

Vineyard Avenue Warehouse

NOISE AND VIBRATION ANALYSIS SAN BERNARDINO COUNTY

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LIST OF ABBREVIATED TERMS

(1)	Reference
ANSI	American National Standards Institute
Calveno	California Vehicle Noise
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
dBA	A-weighted decibels
EPA	Environmental Protection Agency
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
INCE	Institute of Noise Control Engineering
L _{eq}	Equivalent continuous (average) sound level
L _{max}	Maximum level measured over the time interval
MARB/IPA	March Air Reserve Base/Inland Port Airport
mph	Miles per hour
PPV	Peak Particle Velocity
Project	Vineyard Avenue Warehouse
REMEL	Reference Energy Mean Emission Level
RMS	Root-mean-square
VdB	Vibration Decibels

EXECUTIVE SUMMARY

Urban Crossroads, Inc. has prepared this noise study to determine the noise exposure and the necessary noise mitigation measures for the proposed Vineyard Avenue Warehouse development ("Project"). The Project site is located at the easterly terminus of Vineyard Avenue, west of Maple Avenue, and south of Bohnert Avenue in unincorporated San Bernardino County. The Project consists of the development of 311,315 square feet (SF) of warehousing use. 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 noise study has been prepared to satisfy applicable San Bernardino County noise standards and significance criteria based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (1)

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

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

TABLE ES-1: SUMMARY OF CEQA SIGNIFICANCE FINDINGS



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1 INTRODUCTION

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

1.1 SITE LOCATION

The proposed Project is located at the easterly terminus of Vineyard Avenue, west of Maple Avenue, and south of Bohnert Avenue in unincorporated San Bernardino County near the City of Rialto, as shown on Exhibit 1-A.

1.2 PROJECT DESCRIPTION

A preliminary site plan for the proposed Project is shown on Exhibit 1-B. The Project consists of the development of 311,315 square feet (SF) of warehousing use. It is anticipated that the Project would be developed in a single phase with an anticipated Opening Year of 2025.

At the time this noise analysis was prepared, the future warehousing tenants of the proposed Project were unknown, and therefore, this noise study includes a conservative analysis of the proposed Project uses. The on-site Project-related noise sources are expected to include: loading dock activity, roof-top air conditioning units, parking lot vehicle activities, trash enclosure activity, and truck movements. This noise analysis is intended to describe the noise level impacts associated with the expected typical operational activities at the Project site.





EXHIBIT 1-A: LOCATION MAP





EXHIBIT 1-B: PRELIMINARY SITE PLAN



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2 FUNDAMENTALS

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

COMMON OUTDOOR ACTIVITIES	COMMON INDOOR ACTIVITIES	A - WEIGHTED SOUND LEVEL dBA	SUBJECTIVE LOUDNESS	EFFECTS OF NOISE	
THRESHOLD OF PAIN		140			
NEAR JET ENGINE		130	INTOLERABLE OR		
		120	DEAFENING	HEARING LOSS	
JET FLY-OVER AT 300m (1000 ft)	ROCK BAND	110			
LOUD AUTO HORN		100			
GAS LAWN MOWER AT 1m (3 ft)		90			
DIESEL TRUCK AT 15m (50 ft), at 80 km/hr (50 mph)	FOOD BLENDER AT 1m (3 ft)	80			
NOISY URBAN AREA, DAYTIME	VACUUM CLEANER AT 3m (10 ft)	70	LOUD	SPEECH INTERFERENCE	
HEAVY TRAFFIC AT 90m (300 ft)	NORMAL SPEECH AT 1m (3 ft)	60			
QUIET URBAN DAYTIME	LARGE BUSINESS OFFICE	50	MODERATE	SLEED	
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		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. (2) The most common sounds vary between 40 dBA (very quiet) to 100 dBA (very loud). Normal



conversation at three feet is roughly at 60 dBA, while loud jet engine noises equate to 110 dBA at approximately 1,000 feet, which can cause serious discomfort. (3) Another important aspect of noise is the duration of the sound and the way it is described and distributed in time.

2.2 NOISE DESCRIPTORS

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

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

2.3 SOUND PROPAGATION

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

2.3.1 GEOMETRIC SPREADING

Sound from a localized source (i.e., a stationary point source) propagates uniformly outward in a spherical pattern. The sound level attenuates (or decreases) at a rate of 6 dB for each doubling of distance from a point source. Highways consist of several localized noise sources on a defined path and hence can be treated as a line source, which approximates the effect of several point sources. Noise from a line source propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of 3 dB for each doubling of distance from a line source. (2)

2.3.2 GROUND ABSORPTION

The propagation path of noise from a highway to a receiver is usually very close to the ground. Noise attenuation from ground absorption and reflective wave canceling adds to the attenuation



associated with geometric spreading. Traditionally, the excess attenuation has also been expressed in terms of attenuation per doubling of distance. This approximation is usually sufficiently accurate for distances of less than 200 feet. For acoustically hard sites (i.e., sites with a reflective surface between the source and the receiver, such as a parking lot or body of water), no excess ground attenuation is assumed. For acoustically absorptive or soft sites (i.e., those sites with an absorptive ground surface between the source and the receiver such as soft dirt, grass, or scattered bushes and trees), an excess ground attenuation value of 1.5 dB per doubling of distance is normally assumed. When added to the cylindrical spreading, the excess ground attenuation results in an overall drop-off rate of 4.5 dB per doubling of distance from a line source. (4)

2.3.3 ATMOSPHERIC EFFECTS

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

2.3.4 SHIELDING

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

2.4 NOISE CONTROL

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

2.5 Noise Barrier Attenuation

Effective noise barriers can reduce noise levels by 10 to 15 dBA, cutting the loudness of traffic noise in half. A noise barrier is most effective when placed close to the noise source or receiver. Noise barriers, however, do have limitations. For a noise barrier to work, it must block the line-of-sight path of sound from the noise source.



2.6 LAND USE COMPATIBILITY WITH NOISE

Some land uses are more tolerant of noise than others. For example, schools, hospitals, churches, and residences are more sensitive to noise intrusion than are commercial or industrial developments and related activities. As ambient noise levels affect the perceived amenity or livability of a development, so too can the mismanagement of noise impacts impair the economic health and growth potential of a community by reducing the area's desirability as a place to live, shop and work. For this reason, land use compatibility with the noise environment is an important consideration in the planning and design process. The FHWA encourages State and Local government to regulate land development in such a way that noise-sensitive land uses are either prohibited from being located adjacent to a highway, or that the developments are planned, designed, and constructed in such a way that noise impacts are minimized. (6)

2.7 COMMUNITY RESPONSE TO NOISE

Approximately sixteen percent of the population has a very low tolerance for noise and will object to any noise not of their making. Consequently, even in the quietest environment, some complaints may occur. Twenty to thirty percent of the population will not complain even in very severe noise environments. (7 pp. 8-6) Thus, a variety of reactions can be expected from people exposed to any given noise environment.

Surveys have shown that community response to noise varies from no reaction to vigorous action for newly introduced noises averaging from 10 dB below existing to 25 dB above existing. (8) According to research originally published in the Noise Effects Handbook (7), the percentage of high annoyance ranges from approximately 0 percent at 45 dB or less, 10 percent are highly annoyed around 60 dB, and increases rapidly to approximately 70 percent being highly annoyed at approximately 85 dB or greater. Despite this variability in behavior on an individual level, the population can be expected to exhibit the following responses to changes in noise levels as shown on Exhibit 2-B. A change of 3 dBA is considered barely perceptible, and changes of 5 dBA are considered readily perceptible. (4)







2.8 VIBRATION

Per the Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment Manual*, 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.

Additionally, in contrast to airborne noise, ground-borne vibration outdoors is not a common environmental problem and annoyance from ground-borne vibration is almost exclusively an indoor phenomenon (8). Therefore, the effects of vibrations should only be evaluated at a structure and the effects of the building structure on the vibration should be considered. Woodframe buildings, such as typical residential structures, are more easily excited by ground vibration than heavier buildings. In contrast, large masonry buildings with spread footings have a low response to ground vibration (8). In general, the heavier a building is, the lower the response will be to the incident vibration energy. However, all structurers reduce vibration levels due to the coupling of the building to the soil. 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 (8). 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 (8). However, the RMS amplitude and PPV are related mathematically, and the RMS amplitude of equipment is typically calculated from the PPV reference level. The RMS amplitude is approximately 70% of the PPV (9). Thus, either can be used in the description of vibration impacts.

While not universally accepted, vibration decibel notation (VdB) is another vibration notation developed and used by the FTA in their guidance manual to describe vibration levels and provide a background of common vibration levels and set vibration limits. (8) Decibel notation (VdB) serves to reduce the range of numbers used to describe vibration levels and is used in this report to describe vibration levels. As stated in the FTA guidance manual, the background vibration-velocity level in residential areas is generally 50 VdB. Ground-borne vibration velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels. Typical outdoor sources of perceptible ground-borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the ground-borne vibration is rarely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration-velocity level, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings. Exhibit 2-C illustrates common vibration sources and the human and structural response to ground-borne vibration.



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

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

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



3 REGULATORY SETTING

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

3.1 STATE OF CALIFORNIA NOISE REQUIREMENTS

The State of California regulates freeway noise, sets standards for sound transmission, provides occupational noise control criteria, identifies noise standards, and provides guidance for local land use compatibility. State law requires that each county and city adopt a General Plan that includes a Noise Element which is to be prepared per guidelines adopted by the Governor's Office of Planning and Research (OPR). (10) OPR identifies suggested land use noise compatibility levels as part of its General Plan Guidelines. These suggested guidelines provide planners with a tool to gauge the compatibility of land uses relative to existing and future noise levels. The guidelines identify normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable noise levels for various land uses. The land use compatibility guidelines are intended to be an advisory resource when considering changes in land use and policies, such as zoning modifications. In addition, the State through the California Environmental Quality Act (CEQA) requires that all known environmental effects of a project be analyzed, including environmental noise impacts.

California Assembly Bill 98 (AB 98), signed in September 2024, controls noise impacts from logistics facilities by establishing buffer zones and setbacks from sensitive areas like homes and schools. It mandates that loading bays and entrances face away from these areas and requires noise-dampening measures such as walls and landscaping. The law also directs cities and counties to implement designated truck routes to keep heavy-duty vehicles away from residential neighborhoods. These regulations aim to reduce noise pollution and improve the quality of life for communities near warehouses. As the Project was applied for prior to adoption of AB 98, the Project would not be subject to AB 98.

3.2 SAN BERNARDINO COUNTY COUNTYWIDE PLAN HAZARDS ELEMENT

The San Bernardino County is committed to protecting life, property, and commerce from impacts associated with natural hazards, human-generated hazards, and increased risk due to climate change. The County also works to ensure that residents in unincorporated disadvantaged communities have a reduced risk of exposure to pollution and have equitable access to public facilities and services. Effectively reducing these risks requires the County and its partners to evaluate public safety threats, proactively plan and protect against potential hazards, and establish systems that will make the county and its people safer and more self- reliant. (11) To



address noise sources found in the San Bernardino County, the following policies have been identified in the Countywide Plan Hazards Element:

- **Policy HZ-2.6**: Coordination with transportation authorities. We collaborate with airport owners, FAA, Caltrans, SBCTA, SCAG, neighboring jurisdictions, and other transportation providers in the preparation and maintenance of, and updates to transportation-related plans and projects to minimize noise impacts and provide appropriate mitigation measures.
- **Policy HZ-2.7**: Truck delivery areas. We encourage truck delivery areas to be located away from residential properties and require associated noise impacts to be mitigated.
- **Policy HZ-2.8**: Proximity to noise generating uses. We limit or restrict new noise sensitive land uses in proximity to existing conforming noise generating uses and planned industrial areas.
- **Policy HZ-2.9**: Control sound at the source. We prioritize noise mitigation measures that control sound at the source before buffers, sound walls, and other perimeter measures.
- **Policy HZ-2.10:** Agricultural operations. We require new development adjacent to existing conforming agricultural operations to provide adequate buffers to reduce the exposure of new development to operational noise, odor, and the storage or application of pesticides or other hazardous materials.
- **Policy HZ-3.19**: Community education. We make educational materials available to the public in unincorporated environmental justice focus areas so that they clearly understand the potential for adverse pollution, noise, odor, vibration, and lighting and glare, and the effects of toxic materials to promote civil engagement. We require that such educational materials be developed in accordance with Plain Language Guidelines.

3.3 SAN BERNARDINO COUNTY DEVELOPMENT CODE

While the San Bernardino County Countywide Plan Hazards Element provides guidelines and criteria to assess transportation noise on sensitive land uses, the County Code, Title 8 Development Code contains the noise level limits for mobile, stationary, and construction-related noise sources. (12) All the nearest noise-sensitive receivers are located within San Bernardino County. Receivers within the City of Rialto are also evaluated using the same County criteria, as the City of Rialto Municipal Code does not identify specific exterior noise level standards.

3.3.1 TRANSPORTATION NOISE STANDARDS

Section 83.01.080(d), Table 83-3, contains the San Bernardino County's mobile noise sourcerelated standards, shown on Exhibit 3-A. Exterior transportation (mobile) noise level standards for residential land uses in the Project study area are shown to be 60 dBA CNEL, while non-noisesensitive land uses, such as office uses, require exterior noise levels of 65 dBA CNEL per the County's Table 83-3 mobile noise source standards.



	Noise Standards for Adjacent Mobile Noise Sources					
	Land Use Ldn (or CNEL) dB(A)					
Categories	Uses	Interior (1)	Exterior (2)			
Residential	Single and multi-family, duplex, mobile homes	45	60(3)			
Commercial	Hotel, motel, transient housing	45	60(3)			
	Commercial retail, bank, restaurant	50	N/A			
	Office building, research and development, professional offices	45	65			
	Amphitheater, concert hall, auditorium, movie theater	45	N/A			
Institutional/Public	Hospital, nursing home, school classroom, religious institution, library	45	65			
Open Space	Park	N/A	65			
 (2) The outdoor enviror Hospital/office build Hotel and motel recr Mobile home parks Multi-family private Park picnic areas Private yard of singl School playgrounds (3) An exterior poise left 	nment shall be limited to: ding patios reation areas patios or balconies e-family dwellings	been substant	ially			
(3) An exterior holse is mitigated through a rea exceed 45 dB(A) (or CNI acceptable interior noi CNEL = (Community Noi addition of approxima	even of up to 65 dB(A) (of CNEL) shart be arrowed provided exterior horse revers have asonable application of the best available noise reduction technology, and interior EL) with windows and doors closed. Requiring that windows and doors remain clos se level shall necessitate the use of air conditioning or mechanical ventilation. se Equivalent Level). The average equivalent A-weighted sound level during a 24-ho tely five decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and ter	ed to achieve a ur day, obtain	re does not an ed after ound levels			

Ехнівіт З-А:	COUNTY OF SAM	N BERNARDINO	MOBILE NOISE	LEVEL STANDARDS
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Source: County of San Bernardino County Code, Title 8 Development Code, Table 83-3.

3.3.2 OPERATIONAL NOISE STANDARDS

To analyze noise impacts originating from a designated fixed location such as the Vineyard Avenue Warehouse Project, stationary-source (operational) noise such as the expected loading dock activity, roof-top air conditioning units, parking lot vehicle activities, trash enclosure activity, and truck movements are typically evaluated against standards established under a jurisdiction's Municipal Code. The San Bernardino County Code, Title 8 Development Code, Section 83.01.080(c) Table 83-2, shown on Exhibit 3-B establishes the noise level standards for stationary noise sources. Since the Project's land use will potentially impact adjacent noise-sensitive uses in the Project study area, this noise study relies on the more conservative residential noise level standards to describe potential operational noise impacts.



Table 83-2					
Noise Standards for Stationary Noise Sources					
Affected Land Uses (Receiving Noise) 7:00 a.m 10:00 p.m. Leq 10:00 p.m 7:00 a.m. Leq					
Residential	55 dB(A)	45 dB(A)			
Professional Services	55 dB(A)	55 dB(A)			
Other Commercial	60 dB(A)	60 dB(A)			
Industrial	70 dB(A)	70 dB(A)			
Leq = (Equivalent Energy Level). The sound level corresponding to a steady-state sound level containing the same total energy as a time-varying signal over a given sample period, typically one, eight or 24 hours.					
dB(A) = (A-weighted Sound Pressure Level). The sound pressure level, in decibels, as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de- emphasizes the very low and very high frequency components of the sound, placing greater emphasis on those frequencies within the sensitivity range of the human ear.					
Ldn = (Day-Night Noise Level). The average equivalent A-weighted sound level during a 24-hour day obtained by adding 10 decibels to the hourly noise levels measured during the night (from 10:00 p.m. to 7:00 a.m.). In this way Ldn takes into account the lower tolerance of people for noise during nighttime periods.					

EXHIBIT 3-B: COUNTY OF SAN BERNARDINO STATIONARY NOISE LEVEL STANDARDS

Source: County of San Bernardino County Code, Title 8 Development Code, Table 83-2.

For residential properties, the exterior noise level shall not exceed 55 dBA L_{50} during the daytime hours (7:00 a.m. to 10:00 p.m.) and 45 dBA L_{50} during the nighttime hours (10:00 p.m. to 7:00 a.m.) for both the whole hour, and for not more than 30 minutes in any hour. The exterior noise level (11)standards shall apply for a cumulative period of 30 minutes in any hour, as well as the standard plus 5 dBA cannot be exceeded for a cumulative period of more than 15 minutes in any hour, or the standard plus 10 dBA for a cumulative period of more than 5 minutes in any hour, or the standard plus 15 dBA for a cumulative period of more than 1 minute in any hour, or the standard plus 20 dBA for any period of time.

Further, Section 83.01.080(e) indicates that if the existing ambient noise level already exceeds any of the exterior noise level limit categories, then the standard shall be adjusted to reflect the ambient conditions. The San Bernardino County operational noise level standards are shown on Table 3-1 and included in Appendix 3.1.

TABLE 3-1: UPERATIONAL NOISE LEVEL STANDARDS	TABLE 3-1:	OPERATIONAL	NOISE LEVEI	STANDARDS
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	Exterior Noise Level Standards (dBA) ¹					
Time Period	L ₅₀ (30 mins)	L ₂₅ (15 mins)	L ₈ (5 mins)	L ₂ (1 min)	L _{max} (Anytime)	
Daytime (7:00 a.m. to 10:00 p.m.)	55	60	65	70	75	
Nighttime (10:00 p.m. to 7:00 a.m.)	45	50	55	60	65	

 1 County of San Bernardino Development Code, Title 8, Section 83.01.080 (Appendix 3.1). The percent noise level is the level exceeded "n" percent of the time during the measurement period. L₅₀ is the noise level exceeded 50% of the time.



The percentile noise descriptors are provided to ensure that the duration of the noise source is fully considered. However, due to the relatively constant intensity of the Project operational activities, the L_{50} or average L_{eq} noise level metrics best describe the loading dock activity, roof-top air conditioning units, parking lot vehicle activities, trash enclosure activity, and truck movements. In addition, the L_{eq} noise level metric accounts for noise fluctuations over time by averaging the louder and quieter events and giving more weight to the louder events. In addition, due to the mathematical relationship between the median (L_{50}) and the mean (L_{eq}), the L_{eq} will always be larger than or equal to the L_{50} . The more variable the noise becomes, the larger the L_{eq} becomes in comparison to the L_{50} . Therefore, this noise study conservatively relies on the average L_{eq} sound level limits to describe the Project operational noise levels.

3.4 CONSTRUCTION NOISE STANDARDS

Section 83.01.080(g)(3) of the San Bernardino County Development Code, provided in Appendix 3.1, indicates that construction activity is considered exempt from the noise level standards between the hours of 7:00 a.m. to 7:00 p.m. except on Sundays and Federal holidays. (12) However, neither the San Bernardino County Countywide Plan or Development 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. Therefore, a numerical construction threshold based on Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual is used for analysis of daytime construction impacts, as discussed below. According to the FTA, local noise ordinances are typically not very useful in evaluating construction noise. They usually relate to nuisance and hours of allowed activity, and sometimes specify limits in terms of maximum levels, but are generally not practical for assessing the impact of a construction project. Project construction noise criteria should account for the existing noise environment, the absolute noise levels during construction activities, the duration of the construction, and the adjacent land use. Due to the lack of standardized construction noise thresholds, the FTA provides guidelines that can be considered reasonable criteria for construction noise assessment. The FTA considers a daytime exterior construction noise level of 80 dBA Leg as a reasonable threshold for noise sensitive residential land use (8 p. 179).

3.5 CONSTRUCTION VIBRATION STANDARDS

The San Bernardino County Development Code, Section 83.01.090(a) states that vibration shall be no greater than or equal to two-tenths inches per second measured at or beyond the lot line. (12) (b) Vibration velocity shall be measured with a seismograph or other instrument capable of measuring and recording displacement and frequency, particle velocity, or acceleration. Readings shall be made at points of maximum vibration along any lot line next to a parcel within a residential, commercial and industrial land use zoning district. Subsection (c) indicates that the following sources vibration shall be exempt from the vibration regulations (1) motor vehicles not under the control of the subject use; (2) temporary construction, maintenance, repair, or demolition activities between 7:00 a.m. and 7:00 p.m., except Sundays and Federal holidays. Therefore, to determine if the vibration levels are due to the operation and construction of the Project, the peak particle velocity (PPV) vibration level standard of 0.2 inches per second is used.



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4 SIGNIFICANCE CRITERIA

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

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

4.1 NOISE LEVEL INCREASES (THRESHOLD A)

Noise level increases resulting from the Project are evaluated based on the Appendix G CEQA Guidelines. Under CEQA, consideration must be given to the magnitude of the increase, the existing baseline ambient noise levels, and the location of 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* (13). 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) (14) 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 (13). For example, if the ambient noise environment is quiet (<60 dBA) and the new noise source greatly increases the noise levels, an impact may occur if the noise criteria may be exceeded. Therefore, for this analysis, a *readily perceptible* 5 dBA or greater project-related noise level increase is considered a significant impact when the without project noise levels are below 60 dBA. Per the FICON, in areas where the without project noise levels range from 60 to 65 dBA, a 3 dBA *barely perceptible* noise level increase appears to be

appropriate for most people. When the without project noise levels already exceed 65 dBA, any increase in community noise louder than 1.5 dBA or greater is considered a significant impact if the noise criteria for a given land use is exceeded, since it likely contributes to an existing noise exposure exceedance. The FICON guidance provides an established source of criteria to assess the impacts of substantial temporary or permanent increase in baseline ambient noise levels. Based on the FICON criteria, the amount to which a given noise level increase is considered acceptable is reduced when the without Project (baseline) noise levels are already shown to exceed certain land-use specific exterior noise level criteria. The specific levels are based on typical responses to noise level increases of 5 dBA or *readily perceptible*, 3 dBA or *barely perceptible*, and 1.5 dBA depending on the underlying without Project noise levels for noise-sensitive uses. These levels of increases and their perceived acceptance are consistent with the guidance provided by both the Federal Highway Administration (4 p. 9) and Caltrans (15 p. 2_48).

4.2 VIBRATION (THRESHOLD B)

As described in Section 3.5, the vibration impacts originating from the construction of the Vineyard Avenue Warehouse, vibration-generating activities are appropriately evaluated using the San Bernardino County threshold to assess potential temporary construction-related impacts at nearby receiver locations. The San Bernardino County Municipal Code identifies an operational vibration level threshold of 0.2 in/sec PPV.

4.3 CEQA GUIDELINES NOT FURTHER ANALYZED (THRESHOLD C)

CEQA Noise Threshold C applies when there are nearby public and private airports and/or air strips and focuses on land use compatibility of the Project to nearby airports and airstrips. The Project site is not located within two miles of an airport or airstrip. The closest airport is the San Bernardino International Airport located over 9 miles southeast of the Project site. As such, the Project site would not be exposed to excessive noise levels from airport operations, and therefore, impacts are considered *less than significant*, and no further noise analysis is conducted in relation to Appendix G to the CEQA Guidelines, Noise Threshold C.



4.4 SIGNIFICANCE CRITERIA SUMMARY

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

Analusia	Level Here		Significance Criteria		
Analysis	Land Use	Condition(s)	Daytime	Nighttime	
		if ambient is < 60 dBA CNEL	≥ 5 dBA CNEL P	Project increase	
Off-Site	Noise- Sensitive ¹	if ambient is 60 - 65 dBA CNEL	≥ 3 dBA CNEL P	Project increase	
	Sensitive	if ambient is > 65 dBA CNEL	≥ 1.5 dBA CNEL Project increase		
	Residential	Exterior Noise Level Limit ²	55 dBA L _{eq}	45 dBA L _{eq}	
Operational	Noise- Sensitive ¹	if ambient is < 60 dBA L_{eq}	\geq 5 dBA L _{eq} Project increase		
Operational		if ambient is 60 - 65 dBA L _{eq}	≥ 3 dBA L _{eq} Project increase		
		if ambient is > 65 dBA L_{eq}	\geq 1.5 dBA L _{eq} Project increase		
Construction	Noise-	Permitted between 7:00 a.m. to 7:00 p.m.; except Sunda and Federal holidays. ³			
Construction	Sensitive	Noise Level Threshold ⁴	80 dBA L _{eq}	n/a	
		Vibration Level Threshold ⁵	0.2 PPV in/sec	n/a	

TABLE 4-1:	SIGNIFICANCE	CRITERIA	SUMMARY
		••••••	

¹ FICON, 1992.

² County of San Bernardino Development Code, Title 8, Section 83.01.080 (Appendix 3.1)

 $^{\scriptscriptstyle 3}$ Section 83.01.080(g)(3) of the County of San Bernardino County Code.

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

⁵ Section 83.01.090(a) of the County of San Bernardino County Code.

"Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m. "n/a" = construction activities are not planned during the nighttime hours; "PPV" = peak particle velocity.



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5 EXISTING NOISE LEVEL MEASUREMENTS

To assess the existing noise level environment, 24-hour noise level measurements were taken at four locations in the Project study area. The receiver locations were selected to describe and document the existing noise environment within the Project study area. Exhibit 5-A provides the boundaries of the Project study area and the noise level measurement locations. To fully describe the existing noise conditions, long-term noise level measurements were collected by Urban Crossroads, Inc. on Tuesday, June 6, 2023. Appendix 5.1 includes study area photos.

5.1 MEASUREMENT PROCEDURE AND CRITERIA

To describe the existing noise environment, the hourly noise levels were measured during typical weekday conditions over a 24-hour period. By collecting individual hourly noise level measurements, it is possible to describe the equivalent daytime and nighttime hourly noise levels and calculate the 24-hour CNEL. The long-term noise readings were recorded using Piccolo Type 2 integrating sound level meter and dataloggers. The Piccolo sound level meters were calibrated using a Larson-Davis calibrator, Model CAL 150. All noise meters were programmed in "slow" mode to record noise levels in "A" weighted form. The sound level meters and microphones were equipped with a windscreen during all measurements. All noise level measurement equipment satisfies the American National Standards Institute (ANSI) standard specifications for sound level meters ANSI S1.4-2014/IEC 61672-1:2013. (16)

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 equivalent hourly noise levels surrounding the Project site. Both Caltrans and the FTA recognize that it is not reasonable to collect noise level measurements that can fully represent every part of a private yard, patio, deck, or balcony normally used for human activity when estimating impacts for new development projects. This is demonstrated in the Caltrans general site location guidelines which indicate that *sites must be free of noise contamination by sources other than sources of interest. Avoid sites located near sources such as barking dogs, lawnmowers, pool pumps, and air conditioners unless it is the express intent of the analyst to measure these sources. (2) Further, FTA guidance states, that it is not necessary nor recommended that existing noise exposure be determined by measuring at every noise-sensitive location in the project area. Rather, the recommended approach is to characterize the noise environment for clusters of sites based on measurements or estimates at representative locations in the community. (8)*

Based on recommendations of Caltrans and the FTA, it is not necessary to collect measurements at each individual building or residence, because each receiver measurement represents a group of buildings that share acoustical equivalence. (8) In other words, the area represented by the receiver shares similar shielding, terrain, and geometric relationship to the reference noise source. Receivers represent a location of noise sensitive areas and are used to estimate the future noise level impacts. Collecting 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 increase due to the Project's contribution to the ambient noise levels. This approach is necessary to calculate the temporary or permanent increase in *ambient* noise levels as required by the CEQA Guidelines Environmental Checklist.

5.3 NOISE MEASUREMENT RESULTS

The noise measurements presented below focus on the equivalent or the energy average hourly sound levels (L_{eq}) to describe the existing *ambient* conditions. 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.

Location ¹	Description	Energy Average Noise Level (dBA L _{eq}) ²		
		Daytime	Nighttime	
L1	Located north of the site near the residence at 18205 Bohnert Ave.	49.3	48.8	
L2	Located north of the site near the residence at 18279 Bohnert Ave.	50.7	49.2	
L3	Located east of the site near the residence at 18312 Vineyard Ave.	55.2	52.0	
L4	Located east of the site near the residence at 2231 N Maple Ave.	58.0	56.2	

TABLE 5-1: 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.

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





EXHIBIT 5-A: NOISE MEASUREMENT LOCATIONS

15533-05 NA

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Site Boundary 🔺 Measurement Locations

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6 TRAFFIC NOISE METHODS AND PROCEDURES

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

6.1 FHWA TRAFFIC NOISE PREDICTION MODEL

The expected roadway noise level increases from vehicular traffic were calculated by Urban Crossroads, Inc. using a computer program that replicates the Federal Highway Administration (FHWA) Traffic Noise Prediction Model- FHWA-RD-77-108. (17) 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. (18) 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. (19)

6.1.1 OFF-SITE TRAFFIC NOISE PREDICTION MODEL INPUTS

Table 6-1 presents the roadway parameters used to assess the Project's off-site transportation noise impacts. Table 6-1 identifies the 9 off-site study area roadway segments, the distance from the centerline to adjacent land use based on the functional roadway classifications per the San Bernardino County General Plan Circulation Element, and the vehicle speeds. The ADT volumes used in this study area presented on Table 6-2 are based on the *Vineyard Avenue Warehouse Traffic Analysis*, prepared by Urban Crossroads, Inc. for the following traffic scenarios (20).

- Existing
- Existing plus Project
- Opening Year Cumulative (OYC) (2025) without Project Conditions
- Opening Year Cumulative (OYC) (2025) with Project Conditions
- Horizon Year (2040) without Project Conditions
- Horizon Year (2040) with Project Conditions

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



Project is anticipated to generate a net total of 536 two-way trips per day (actual vehicles) that includes 216 truck trips.

ID	Roadway	Segment	Classification ¹	Receiving Land Use ²	Distance from Centerline to Receiving Land Use (Feet) ³	Vehicle Speed (mph)
1	Alder Av.	s/o Casmalia Av.	Major	Non-Sensitive	60'	50
2	Alder Av.	n/o Renaissance Pkwy.	Major	Non-Sensitive	60'	50
3	Locust Av.	s/o Vineyard Av.	Secondary	Non-Sensitive	44'	45
4	Locust Av.	n/o Casmalia Av.	Secondary	Non-Sensitive	44'	45
5	Locust Av.	s/o Casmalia Av.	Secondary	Non-Sensitive	44'	45
6	Casmalia Av.	e/o Alder Av.	Secondary	Non-Sensitive	44'	55
7	Casmalia Av.	w/o Laurel Av.	Secondary	Non-Sensitive	44'	55
8	Casmalia Av.	w/o Locust Av.	Secondary	Non-Sensitive	44'	55
9	Casmalia Av.	e/o Locust Av.	Secondary	Non-Sensitive	44'	55

TABLE 6-1: OFF-SITE ROADWAY PARAMETERS

¹Vineyard Avenue Warehouse, Urban Crossroads, Inc.

² Based on a review of existing aerial imagery.

 $^{\rm 3}$ Distance to receiving land use is based upon the right-of-way distances.

			Average Daily Traffic Volumes ¹						
10	Beadway	Comment	Exis	ting	OYC (OYC (2025)		HY (2040)	
עו Koadway	Segment	Without Project	With Project	Without Project	With Project	Without Project	With Project		
1	Alder Av.	s/o Casmalia Av.	14,192	14,600	23,818	24,226	26,322	26,730	
2	Alder Av.	n/o Renaissance Pkwy.	22,348	22,364	35,599	35,615	39,542	39,558	
3	Locust Av.	s/o Vineyard Av.	12,169	12,185	12,661	12,677	14,808	14,824	
4	Locust Av.	n/o Casmalia Av.	13,936	14,456	14,499	15,019	27,224	27,744	
5	Locust Av.	s/o Casmalia Av.	8,071	8,087	8,930	8,946	19,871	19,887	
6	Casmalia Av.	e/o Alder Av.	13,594	14,018	24,761	25,185	27,159	27,583	
7	Casmalia Av.	w/o Laurel Av.	10,369	10,793	13,883	14,307	20,570	20,994	
8	Casmalia Av.	w/o Locust Av.	11,402	11,826	14,958	15,382	19,797	20,221	
9	Casmalia Av.	e/o Locust Av.	7,843	7,939	10,722	10,818	12,106	12,202	

TABLE 6-2: AVERAGE DAILY TRAFFIC VOLUMES

 $^{\rm 1}$ Vineyard Avenue Warehouse Traffic Analysis, Urban Crossroads, Inc.

To quantify the off-site noise levels, the Project related truck trips were added to the heavy truck category in the FHWA noise prediction model. The addition of the Project related truck trips increases the percentage of heavy trucks in the vehicle mix. This approach recognizes that the FHWA noise prediction model is significantly influenced by the number of heavy trucks in the vehicle mix. Table 6-3 provides the time of day (daytime, evening, and nighttime) vehicle splits. The daily Project truck trip-ends were assigned to the individual off-site study area roadway



segments based on the Project truck trip distribution percentages documented in the *Vineyard Avenue Warehouse Traffic Analysis*. Using the Project truck trips in combination with the Project trip distribution, Urban Crossroads, Inc. calculated the number of additional Project truck trips and vehicle mix percentages for each of the study area roadway segments. Table 6-4 shows the traffic flow by vehicle type (vehicle mix) used for all without Project traffic scenarios, and Tables 6-5 to 6-7 show the vehicle mixes used for the with Project traffic scenarios.

		Total of Time of		
Vehicle Type	Daytime	Evening	Nighttime	Day Splits
Autos	69.27%	10.61%	20.12%	100.00%
Medium Trucks	73.75%	4.15%	22.09%	100.00%
Heavy Trucks	79.07%	4.65%	16.28%	100.00%

TABLE 6-3: TIME OF DAY VEHICLE SPLITS

¹ Based on the August 30, 2023, directional vehicle classification count collected on Locust Avenue south of Vineyard Avenue (Vineyard Avenue Warehouse Traffic Analysis, Urban Crossroads, Inc.)

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

TABLE 6-4: WITHOUT PROJECT VEHICLE MIX

Classification		Total		
Classification	Autos	Medium Trucks	Heavy Trucks	lotai
All Segments	88.81%	10.83%	0.36%	100.00%

¹ Based on the August 30, 2023, directional vehicle classification count collected on Locust Avenue south of Vineyard Avenue (Vineyard Avenue Warehouse Traffic Analysis, Urban Crossroads, Inc.)

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



			With Project ¹				
ID	Roadway	Segment	Autos	Medium Trucks	Heavy Trucks	Total	
1	Alder Av.	s/o Casmalia Av.	87.64%	10.58%	1.79%	100.00%	
2	Alder Av.	n/o Renaissance Pkwy.	88.81%	10.83%	0.36%	100.00%	
3	Locust Av.	s/o Vineyard Av.	88.82%	10.82%	0.36%	100.00%	
4	Locust Av.	n/o Casmalia Av.	87.71%	10.49%	1.80%	100.00%	
5	Locust Av.	s/o Casmalia Av.	88.83%	10.81%	0.36%	100.00%	
6	Casmalia Av.	e/o Alder Av.	87.60%	10.55%	1.84%	100.00%	
7	Casmalia Av.	w/o Laurel Av.	87.24%	10.47%	2.29%	100.00%	
8	Casmalia Av.	w/o Locust Av.	87.38%	10.50%	2.12%	100.00%	
9	Casmalia Av.	e/o Locust Av.	88.94%	10.70%	0.36%	100.00%	

TABLE 6-5: EXISTING WITH PROJECT VEHICLE MIX

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

TABLE 6-6: OYC 2025 WITH PROJECT VEHICLE MIX

			With Project ¹				
ID	Roadway	Segment	Autos	Medium Trucks	Heavy Trucks	Total	
1	Alder Av.	s/o Casmalia Av.	88.10%	10.68%	1.22%	100.00%	
2	Alder Av.	n/o Renaissance Pkwy.	88.81%	10.83%	0.36%	100.00%	
3	Locust Av.	s/o Vineyard Av.	88.82%	10.82%	0.36%	100.00%	
4	Locust Av.	n/o Casmalia Av.	87.76%	10.50%	1.74%	100.00%	
5	Locust Av.	s/o Casmalia Av.	88.83%	10.81%	0.36%	100.00%	
6	Casmalia Av.	e/o Alder Av.	88.14%	10.68%	1.19%	100.00%	
7	Casmalia Av.	w/o Laurel Av.	87.63%	10.56%	1.81%	100.00%	
8	Casmalia Av.	w/o Locust Av.	87.71%	10.58%	1.71%	100.00%	
9	Casmalia Av.	e/o Locust Av.	88.91%	10.74%	0.36%	100.00%	

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


			With Project ¹					
ID	Roadway	Segment	Autos	Medium Trucks	Heavy Trucks	Total		
1	Alder Av.	s/o Casmalia Av.	88.17%	10.69%	1.14%	100.00%		
2	Alder Av.	n/o Renaissance Pkwy.	88.81%	10.83%	0.36%	100.00%		
3	Locust Av.	s/o Vineyard Av.	88.82%	10.82%	0.36%	100.00%		
4	Locust Av.	n/o Casmalia Av.	88.24%	10.65%	1.11%	100.00%		
5	Locust Av.	s/o Casmalia Av.	88.82%	10.83%	0.36%	100.00%		
6	Casmalia Av.	e/o Alder Av.	88.19%	10.69%	1.11%	100.00%		
7	Casmalia Av.	w/o Laurel Av.	88.00%	10.65%	1.35%	100.00%		
8	Casmalia Av.	w/o Locust Av.	87.97%	10.64%	1.39%	100.00%		
9	Casmalia Av.	e/o Locust Av.	88.89%	10.75%	0.36%	100.00%		

TABLE 6-7: HY 2040 WITH PROJECT VEHICLE MIX

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



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7 OFF-SITE TRAFFIC NOISE ANALYSIS

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

7.1 TRAFFIC NOISE CONTOURS

Noise contours were used to assess the Project's incremental 24-hour dBA CNEL traffic-related noise impacts at receiving 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 CNEL noise levels. The noise contours do not consider the effect of any existing noise barriers or topography that may attenuate ambient noise levels. In addition, because the noise contours reflect modeling of vehicular noise on area roadways, they appropriately do not reflect noise contributions from the surrounding stationary noise sources within the Project study area. Tables 7-1 through 7-6 present a summary of the exterior traffic noise levels without barrier attenuation for each traffic condition. Appendix 7.1 includes the traffic noise level contours worksheets for each traffic condition.

5	Pood	Comment	Receiving	CNEL at Receiving	Distance to Contour from Centerline (Feet)		
ם	коао	Land Use ¹		Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Alder Av.	s/o Casmalia Av.	Non-Sensitive	73.0	56	122	262
2	Alder Av.	n/o Renaissance Pkwy.	Non-Sensitive	75.0	RW	111	240
3	Locust Av.	s/o Vineyard Av.	Non-Sensitive	72.4	RW	75	161
4	Locust Av.	n/o Casmalia Av.	Non-Sensitive	73.0	75	162	350
5	Locust Av.	s/o Casmalia Av.	Non-Sensitive	70.6	75	161	347
6	Casmalia Av.	e/o Alder Av.	Non-Sensitive	75.0	170	367	790
7	Casmalia Av.	w/o Laurel Av.	Non-Sensitive	73.9	166	358	770
8	Casmalia Av.	w/o Locust Av.	Non-Sensitive	74.3	166	358	771
9	Casmalia Av.	e/o Locust Av.	Non-Sensitive	72.6	314	677	1459

TABLE 7-1: EXISTING WITHOUT PROJECT CONTOURS

¹ Based on a review of existing aerial imagery.

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

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



10	Road	Segment	Receiving	CNEL at Receiving	Distance to Contour from Centerline (Feet)		
ם			Land Use ¹	Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Alder Av.	s/o Casmalia Av.	Non-Sensitive	73.8	107	231	497
2	Alder Av.	n/o Renaissance Pkwy.	Non-Sensitive	75.0	129	279	600
3	Locust Av.	s/o Vineyard Av.	Non-Sensitive	72.4	63	136	294
4	Locust Av.	n/o Casmalia Av.	Non-Sensitive	73.8	79	170	366
5	Locust Av.	s/o Casmalia Av.	Non-Sensitive	70.6	48	104	224
6	Casmalia Av.	e/o Alder Av.	Non-Sensitive	75.7	106	229	493
7	Casmalia Av.	w/o Laurel Av.	Non-Sensitive	74.8	91	197	425
8	Casmalia Av.	w/o Locust Av.	Non-Sensitive	75.1	96	208	447
9	Casmalia Av.	e/o Locust Av.	Non-Sensitive	72.7	66	143	308

TABLE 7-2: EXISTING WITH PROJECT CONTOURS

¹ Based on a review of existing aerial imagery.

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

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

TABLE 7-3: OYC 2025 WITHOUT PROJECT CONTOURS

	Deed	6t	Receiving	CNEL at Receiving	Distance to Contour from Centerline (Feet)		
U	коао	segment	Land Use ¹	Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Alder Av.	s/o Casmalia Av.	Non-Sensitive	75.3	135	291	626
2	Alder Av.	n/o Renaissance Pkwy.	Non-Sensitive	77.0	176	380	818
3	Locust Av.	s/o Vineyard Av.	Non-Sensitive	72.5	65	140	302
4	Locust Av.	n/o Casmalia Av.	Non-Sensitive	73.1	71	153	330
5	Locust Av.	s/o Casmalia Av.	Non-Sensitive	71.0	51	111	239
6	Casmalia Av.	e/o Alder Av.	Non-Sensitive	77.6	142	306	660
7	Casmalia Av.	w/o Laurel Av.	Non-Sensitive	75.1	97	208	449
8	Casmalia Av.	w/o Locust Av.	Non-Sensitive	75.5	102	219	472
9	Casmalia Av.	e/o Locust Av.	Non-Sensitive	74.0	81	175	378

¹ Based on a review of existing aerial imagery.

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

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



10	Road	Grannet	Receiving	CNEL at Receiving	Distance to Contour from Centerline (Feet)		
ם		Segment	Land Use ¹	Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Alder Av.	s/o Casmalia Av.	Non-Sensitive	75.7	145	312	671
2	Alder Av.	n/o Renaissance Pkwy.	Non-Sensitive	77.0	176	380	818
3	Locust Av.	s/o Vineyard Av.	Non-Sensitive	72.5	65	140	302
4	Locust Av.	n/o Casmalia Av.	Non-Sensitive	73.9	81	174	374
5	Locust Av.	s/o Casmalia Av.	Non-Sensitive	71.0	52	111	239
6	Casmalia Av.	e/o Alder Av.	Non-Sensitive	78.0	151	326	702
7	Casmalia Av.	w/o Laurel Av.	Non-Sensitive	75.8	108	232	499
8	Casmalia Av.	w/o Locust Av.	Non-Sensitive	76.1	112	242	521
9	Casmalia Av.	e/o Locust Av.	Non-Sensitive	74.0	82	176	379

TABLE 7-4: OYC 2025 WITH PROJECT CONTOURS

¹ Based on a review of existing aerial imagery.

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

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

TABLE 7-5: HY 2040 WITHOUT PROJECT CONTOURS

	Deed	Corment	Receiving	CNEL at Receiving	Distance to Contour from Centerline (Feet)		
U	Road	Segment	Land Use ¹	Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Alder Av.	s/o Casmalia Av.	Non-Sensitive	75.7	144	311	669
2	Alder Av.	n/o Renaissance Pkwy.	Non-Sensitive	77.5	189	407	878
3	Locust Av.	s/o Vineyard Av.	Non-Sensitive	73.2	72	155	335
4	Locust Av.	n/o Casmalia Av.	Non-Sensitive	75.9	108	233	502
5	Locust Av.	s/o Casmalia Av.	Non-Sensitive	74.5	88	189	407
6	Casmalia Av.	e/o Alder Av.	Non-Sensitive	78.0	151	326	702
7	Casmalia Av.	w/o Laurel Av.	Non-Sensitive	76.8	126	271	583
8	Casmalia Av.	w/o Locust Av.	Non-Sensitive	76.7	122	264	568
9	Casmalia Av.	e/o Locust Av.	Non-Sensitive	74.5	88	190	410

¹ Based on a review of existing aerial imagery.

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

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



10	Road	Segment	Receiving	CNEL at Receiving	Distance to Contour from Centerline (Feet)		
ם			Land Use ¹	Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Alder Av.	s/o Casmalia Av.	Non-Sensitive	76.1	154	331	713
2	Alder Av.	n/o Renaissance Pkwy.	Non-Sensitive	77.5	189	407	878
3	Locust Av.	s/o Vineyard Av.	Non-Sensitive	73.2	72	155	335
4	Locust Av.	n/o Casmalia Av.	Non-Sensitive	76.3	116	250	539
5	Locust Av.	s/o Casmalia Av.	Non-Sensitive	74.5	88	189	407
6	Casmalia Av.	e/o Alder Av.	Non-Sensitive	78.4	160	345	743
7	Casmalia Av.	w/o Laurel Av.	Non-Sensitive	77.3	135	291	628
8	Casmalia Av.	w/o Locust Av.	Non-Sensitive	77.2	132	285	614
9	Casmalia Av.	e/o Locust Av.	Non-Sensitive	74.5	88	191	410

TABLE 7-6: HY 2040 WITH PROJECT CONTOURS

¹ Based on a review of existing aerial imagery.

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

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

7.2 EXISTING PROJECT TRAFFIC NOISE LEVEL INCREASES

An analysis of existing traffic noise levels plus traffic noise generated by the proposed Project has been included in this report for informational purposes and to fully analyze all the existing traffic scenarios identified in the Traffic Analysis prepared by Urban Crossroads, Inc. However, the analysis of existing off-site traffic noise levels plus traffic noise generated by the proposed Project scenario will not actually occur since the Project would not be fully constructed and operational until Year 2025 conditions. Table 7-1 shows the Existing without Project conditions CNEL noise levels. The Existing without Project exterior noise levels range from 70.6 to 75.0 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-2 shows the Existing with Project conditions ranging from 70.6 to 75.7 dBA CNEL. Table 7-7 shows that the Project off-site traffic noise level increases range from 0.0 to 0.9 dBA CNEL on the study area roadway segments. Based on the significance criteria for off-site traffic noise presented in Table 4-1, 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.

7.3 OYC 2025 TRAFFIC NOISE LEVEL INCREASES

Table 7-3 presents the Opening Year Cumulative (OYC) without Project conditions CNEL noise levels. The OYC without Project exterior noise levels range from 71.0 to 77.6 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-4 shows that the OYC with Project conditions will range from 71.0 to 78.0 dBA CNEL. Table 7-8 shows that the Project off-site traffic noise level increases range from 0.0 to 0.8 dBA CNEL. Based on the significance criteria for off-site traffic noise presented in Table 4-1, 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.

7.4 HORIZON YEAR 2040 TRAFFIC NOISE LEVEL INCREASES

Table 7-5 presents the HY 2040 without Project conditions CNEL noise levels. The HY 2040 without Project exterior noise levels range from 73.2 to 78.0 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-6 shows that the HY 2040 with Project conditions will range from 73.2 to 78.4 dBA CNEL. Table 7-9 shows that the Project off-site traffic noise level increases range from 0.0 to 0.5 dBA CNEL. Based on the significance criteria for off-site traffic noise presented in Table 4-1, 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.



10	Road	Segment	Receiving	CNEL at Receiving Land Use (dBA) ²			Incremental Noise Level Increase Threshold ³	
U			Land Use ¹	No Project	With Project	Project Addition	Limit	Exceeded?
1	Alder Av.	s/o Casmalia Av.	Non-Sensitive	73.0	73.8	0.8	1.5	No
2	Alder Av.	n/o Renaissance Pkwy.	Non-Sensitive	75.0	75.0	0.0	1.5	No
3	Locust Av.	s/o Vineyard Av.	Non-Sensitive	72.4	72.4	0.0	1.5	No
4	Locust Av.	n/o Casmalia Av.	Non-Sensitive	73.0	73.8	0.8	1.5	No
5	Locust Av.	s/o Casmalia Av.	Non-Sensitive	70.6	70.6	0.0	1.5	No
6	Casmalia Av.	e/o Alder Av.	Non-Sensitive	75.0	75.7	0.7	1.5	No
7	Casmalia Av.	w/o Laurel Av.	Non-Sensitive	73.9	74.8	0.9	1.5	No
8	Casmalia Av.	w/o Locust Av.	Non-Sensitive	74.3	75.1	0.8	1.5	No
9	Casmalia Av.	e/o Locust Av.	Non-Sensitive	72.6	72.7	0.1	1.5	No

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

¹ Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.

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

³ Does the Project create an incremental noise level increase exceeding the significance criteria (Table 4-1)?

10	Poad	Sogmont	Receiving	CNEL at Receiving Land Use (dBA) ²			Incremental Noise Level Increase Threshold ³	
	Koad	Segment	Land Use ¹	No Project	With Project	Project Addition	Limit	Exceeded?
1	Alder Av.	s/o Casmalia Av.	Non-Sensitive	75.3	75.7	0.4	1.5	No
2	Alder Av.	n/o Renaissance Pkwy.	Non-Sensitive	77.0	77.0	0.0	1.5	No
3	Locust Av.	s/o Vineyard Av.	Non-Sensitive	72.5	72.5	0.0	1.5	No
4	Locust Av.	n/o Casmalia Av.	Non-Sensitive	73.1	73.9	0.8	1.5	No
5	Locust Av.	s/o Casmalia Av.	Non-Sensitive	71.0	71.0	0.0	1.5	No
6	Casmalia Av.	e/o Alder Av.	Non-Sensitive	77.6	78.0	0.4	1.5	No
7	Casmalia Av.	w/o Laurel Av.	Non-Sensitive	75.1	75.8	0.7	1.5	No
8	Casmalia Av.	w/o Locust Av.	Non-Sensitive	75.5	76.1	0.6	1.5	No
9	Casmalia Av.	e/o Locust Av.	Non-Sensitive	74.0	74.0	0.0	1.5	No

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

¹ Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.

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

³ Does the Project create an incremental noise level increase exceeding the significance criteria (Table 4-1)?



10	Road	Segment Lan	Receiving	CNI La	CNEL at Receiving Land Use (dBA) ²			Incremental Noise Level Increase Threshold ³	
	Koad		Land Use ¹	No Project	With Project	Project Addition	Limit	Exceeded?	
1	Alder Av.	s/o Casmalia Av.	Non-Sensitive	75.7	76.1	0.4	1.5	No	
2	Alder Av.	n/o Renaissance Pkwy.	Non-Sensitive	77.5	77.5	0.0	1.5	No	
3	Locust Av.	s/o Vineyard Av.	Non-Sensitive	73.2	73.2	0.0	1.5	No	
4	Locust Av.	n/o Casmalia Av.	Non-Sensitive	75.9	76.3	0.4	1.5	No	
5	Locust Av.	s/o Casmalia Av.	Non-Sensitive	74.5	74.5	0.0	1.5	No	
6	Casmalia Av.	e/o Alder Av.	Non-Sensitive	78.0	78.4	0.4	1.5	No	
7	Casmalia Av.	w/o Laurel Av.	Non-Sensitive	76.8	77.3	0.5	1.5	No	
8	Casmalia Av.	w/o Locust Av.	Non-Sensitive	76.7	77.2	0.5	1.5	No	
9	Casmalia Av.	e/o Locust Av.	Non-Sensitive	74.5	74.5	0.0	1.5	No	

TABLE 7-9: HY 2040 WITH PROJECT TRAFFIC NOISE LEVEL INCREASES

¹ Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.

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

³ Does the Project create an incremental noise level increase exceeding the significance criteria (Table 4-1)?



8 **RECEIVER LOCATIONS**

To assess the potential for long-term operational and short-term construction noise impacts, the following sensitive receiver locations, as shown on Exhibit 8-A, were identified as representative locations for analysis. Sensitive receivers are generally defined as locations where people reside or where the presence of unwanted sound could otherwise adversely affect the use of the land. Noise-sensitive land uses are generally considered to include schools, hospitals, single-family dwellings, mobile home parks, churches, libraries, and recreation areas. Moderately noise-sensitive land uses typically include multi-family dwellings, hotels, motels, dormitories, outpatient clinics, cemeteries, golf courses, country clubs, athletic/tennis clubs, and equestrian clubs. Land uses that are considered relatively insensitive to noise include business, commercial, and professional developments. Land uses that are typically not affected by noise include: industrial, manufacturing, utilities, agriculture, undeveloped land, parking lots, warehousing, liquid and solid waste facilities, salvage yards, and transit terminals.

To describe the potential off-site Project noise levels, seven receiver locations in the vicinity of the Project site were identified. The selection of receiver locations is based on FHWA guidelines and is consistent with additional guidance provided by Caltrans and the FTA, as previously described in Section 5.2. Due to the additional attenuation from distance and the shielding of intervening structures, other sensitive land uses in the Project study area that are located at greater distances than those identified in this noise study will experience lower noise levels than those presented in this report due to the additional attenuation from distance and the shielding of intervening structures. Distance is measured in a straight line from the project boundary to each receiver location.

- R1: Location R1 represents the existing noise sensitive residence at 18205 Bohnert Avenue, approximately 76 feet north of the Project site. It appears that there are no distinct private outdoor living areas (patio, pool, porch, etc.). Therefore, R1 is placed in the backyard near the building façade. A 24-hour noise measurement was taken near this location, L1, to describe the existing ambient noise environment.
- R2: Location R2 represents the existing noise sensitive residence at 18279 Bohnert Avenue, approximately 91 feet north of the Project site. It appears that there are no distinct private outdoor living areas (patio, pool, porch, etc.). Therefore, R2 is placed in the backyard near the building façade. A 24-hour noise measurement was taken near this location, L2, to describe the existing ambient noise environment.
- R3: Location R3 represents the existing noise sensitive residence at 18312 Vineyard Avenue approximately 86 feet east of the Project site. A 24-hour noise measurement was taken near this location, L3, to describe the existing ambient noise environment.
- R4: Location R4 represents the existing noise sensitive residence at 2231 N Maple Avenue, approximately 89 feet east of the Project site. A 24-hour noise measurement was taken near this location, L4, to describe the existing ambient noise environment. ambient noise environment.





EXHIBIT 8-A: RECEIVER LOCATIONS

N L

LEGEND:

Site Boundary 💮 Receiver Locations — Distance from receiver to Project site boundary (in feet)



9 OPERATIONAL NOISE IMPACTS

This section analyzes the potential stationary-source operational noise impacts at the nearest receiver locations, identified in Section 8, resulting from the operation of the proposed Vineyard Avenue Warehouse Project. Exhibit 9-A presents the 23 individual noise sources used to assess the operational noise levels with the planned 8-foot-high noise barrier at the northwest corner of the Project site. To reduce the noise exposure to the existing noise sensitive residential areas near the Project site, several design features were considered as part of the site planning process. These design features include positioning the loading dock areas in a north-south orientation and placing the warehouse buildings between the loading docks and the residential areas to the north on Bohnert Avenue and to the east on Maple Avenue.

9.1 OPERATIONAL NOISE SOURCES

This operational noise analysis is intended to describe noise level impacts associated with the expected typical of daytime and nighttime activities at the Project site. Consistent with similar warehouse uses, the Project business operations would primarily be conducted within the enclosed building, except for traffic movement, parking, as well as loading and unloading of trucks at designated loading bays. The on-site Project-related noise sources are expected to include: loading dock activity, roof-top air conditioning units, parking lot vehicle activities, trash enclosure activity, and truck movements. Additional noise activity may be attributed to emergency generators. However, emergency generators are designed for use only during power outages or emergencies, meaning their operation is infrequent and temporary. Additionally, they require periodic testing and maintenance, but this occurs on a scheduled basis for short durations rather than continuous operation. Because they are not a constant source of noise, their impact does not contribute to ongoing operational noise levels in a way that would typically require regulatory restrictions. In addition, Section 83.01.080(e)(2) of the San Bernardino County Development Code recognizes this distinction and exempts emergency generators from standard noise limitations.

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 reasonable worst-case noise environment with the typical noise sources operating at the same time. These sources of noise activity will likely vary throughout the day.

9.2.1 MEASUREMENT PROCEDURES

The reference noise level measurements presented in this section were collected using a Larson Davis LxT Type 1 precision sound level meter (serial number 01146) or Piccolo Type 2 integrating sound level meter and dataloggers. All sound level meter was calibrated using a Larson-Davis calibrator, Model CAL 150 or 200, 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. Detailed reference noise measurement worksheets with photos for each noise source activity are included in Appendix 9.1.



EXHIBIT 9-A: OPERATIONAL NOISE SOURCE LOCATIONS



Reference Noise Source	Noise Source Height (Feet)	Mi Ho Day	n./ ur ¹ Night	Reference Noise Level (dBA L _{eq}) @ 50 Feet	Sound Power Level (dBA) ²
Loading Dock Activity	8'	60	60	62.8	103.4
Roof-Top Air Conditioning Units	5'	39	28	57.2	88.9
Parking Lot Vehicle Movements	5'	60	60	52.6	81.1
Trash Enclosure Activity	5'	60	30	57.3	89.0
Truck Movements	8'	60	60	59.9	93.2
Loading Dock Activity Roof-Top Air Conditioning Units Parking Lot Vehicle Movements Trash Enclosure Activity Truck Movements	8' 5' 5' 8'	60 39 60 60 60	60 28 60 30 60	62.8 57.2 52.6 57.3 59.9	103.4 88.9 81.1 89.0 93.2

 TABLE 9-1:
 REFERENCE NOISE LEVEL MEASUREMENTS

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

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

9.2.2 LOADING DOCK ACTIVITY

The reference loading dock activities are intended to describe the typical operational noise source levels associated with the Project. This includes truck idling, deliveries, backup alarms, unloading/loading, docking including a combination of tractor trailer semi-trucks, two-axle delivery trucks, and background forklift operations. At a uniform reference distance of 50 feet, Urban Crossroads collected a reference noise level of 62.8 dBA L_{eq}. The loading dock activity noise level measurement was taken over a fifteen-minute period and represents multiple noise sources taken from the center of activity. The reference noise level measurement includes 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, air brakes noise, in addition to on-going idling of an already docked truck.

9.2.3 ROOF-TOP AIR CONDITIONING UNITS

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



9.2.4 PARKING LOT VEHICLE MOVEMENTS

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

9.2.5 TRASH ENCLOSURE ACTIVITY

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

9.2.6 TRUCK MOVEMENTS

The truck movements reference noise level measurement was collected over a period of 1 hour and 28 minutes and represent multiple heavy trucks entering and exiting the outdoor loading dock area producing a reference noise level of 59.98 dBA L_{eq} at 50 feet. It is expected that the trucks will access the site to the west on Vineyard Avenue with truck activities occurring on the western building façade away from the noise sensitive residential uses to the north and east. The noise sources included at this measurement location account for trucks entering and existing the Project driveways and maneuvering in and out of the outdoor loading dock activity area.

9.3 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 multiple types of noise sources using the spatially accurate Project site plan, georeferenced Nearmap aerial imagery, topography, buildings, and barriers in its calculations to predict outdoor noise levels. Using the ISO 9613-2 protocol, CadnaA will calculate the distance from each noise source to the noise receiver locations, using the ground absorption, distance, and barrier/building attenuation inputs to provide a summary of noise level at each receiver and the partial noise level contributions by noise source. Consistent with the ISO 9613-2 protocol, the CadnaA noise prediction model relies on the reference sound power level (L_w) to describe individual noise sources.

While sound pressure levels (e.g., L_{eq}) quantify in decibels the intensity of given sound sources at a reference distance, sound power levels (L_w) are connected to the sound source and are independent of distance. Sound pressure levels vary substantially with distance from the source



and diminish because of intervening obstacles and barriers, air absorption, wind, and other factors. Sound power is the acoustical energy emitted by the sound source and is an absolute value that is not affected by the environment. The operational noise level calculations provided in this noise study account for the distance attenuation provided due to geometric spreading, when sound from a localized stationary source (i.e., a point source) propagates uniformly outward in a spherical pattern. A default ground attenuation factor of 0.5 was used in the CadnaA noise analysis to account for mixed ground representing a combination of hard and soft surfaces. Appendix 9.1 includes the detailed noise model inputs including the planned screenwall used to estimate the Project operational noise levels presented in this section.

9.4 **PROJECT OPERATIONAL NOISE LEVELS**

Using the reference noise levels to represent the proposed Project operations that include loading dock activity, roof-top air conditioning units, parking lot vehicle activities, trash enclosure activity, and truck movements, Urban Crossroads, Inc. calculated the unmitigated operational source noise levels that are expected to be generated at the Project site and the Project-related noise level increases that would be experienced at each of the sensitive receiver locations. Table 9-2 shows the Project operational noise levels during the daytime hours of 7:00 a.m. to 10:00 p.m. The daytime hourly noise levels at the off-site receiver locations are expected to range from 32.7 to 48.9 dBA L_{eq}.

Noise Coursel	Operational Noise Levels by Receiver Location (dBA Leq)						
Noise Source-	R1	R2	R3	R4			
Loading Dock Activity	47.1	25.5	25.6	25.7			
Roof-Top Air Conditioning Units	35.8	32.7	29.2	36.1			
Parking Lot Vehicle Movements	41.0	39.6	27.8	31.8			
Trash Enclosure Activity	31.8	10.8	9.6	12.3			
Truck Movements	39.4	17.3	15.5	15.5			
Total (All Noise Sources)	48.9	40.6	32.7	37.8			

TABLE 9-2: DAYTIME PROJECT OPERATIONAL NOISE LEVELS

¹ See Exhibit 9-A for the noise source locations. CadnaA noise model calculations are included in Appendix 9.2.

Table 9-3 shows the Project operational noise levels during the nighttime hours of 10:00 p.m. to 7:00 a.m. The nighttime hourly noise levels at the off-site receiver locations are expected to range from 31.7 to 48.8 dBA L_{eq}. The differences between the daytime and nighttime noise levels are largely related to the estimated duration of noise activity as outlined in Table 9-1. While it is expected that the noise source activities will be reduced during the nighttime hours, the analysis assumes no difference between the operating duration for loading dock activity, parking lot vehicle and truck movements. However, the analysis assumes that roof-top air conditioning units and trash enclosure activities operating durations will be lower during the nighttime hours. This explains the minor variation in the Project operational noise levels between the daytime and nighttime hours. Appendix 9.2 includes detailed noise model calculations including the planned 8-foot-high-wall at the northwest corner of the Project site.



Noise Coursel	Operationa	Operational Noise Levels by Receiver Location (dBA Leq)					
Noise Source-	R1	R2	R3	R4			
Loading Dock Activity	47.1	25.5	25.6	25.7			
Roof-Top Air Conditioning Units	33.4	30.3	26.8	33.7			
Parking Lot Vehicle Movements	41.0	39.6	27.8	31.8			
Trash Enclosure Activity	27.8	6.9	5.6	8.3			
Truck Movements	39.4	17.3	15.5	15.5			
Total (All Noise Sources)	48.8	40.3	31.7	36.3			

TABLE 9-3: NIGHTTIME PROJECT OPERATIONAL NOISE LEVELS

¹ See Exhibit 9-A for the noise source locations. CadnaA noise model calculations are included in Appendix 9.2.

9.5 PROJECT OPERATIONAL NOISE LEVEL COMPLIANCE

To demonstrate compliance with local noise regulations, the Project-only operational noise levels are evaluated against exterior noise level thresholds based on the San Bernardino County exterior noise level standards at nearby noise-sensitive receiver locations. Table 9-4 shows the operational noise levels associated with Vineyard Avenue Warehouse will satisfy the Section 83.01.080 of the County of San Bernardino Development Code at the nearest receiver locations. Therefore, the operational noise impacts are considered *less than significant* at the nearest noise-sensitive receiver locations.

Receiver	Project Operational Noise Levels (dBA Leq) ²		Noise Leve (dBA	l Standards Leq) ³	Noise Level Standards Exceeded? ⁴	
Location	Daytime	Nighttime	Daytime	Nighttime	Daytime	Nighttime
R1	48.9	48.8	55.0	48.8	No	No
R2	40.6	40.3	55.0	49.2	No	No
R3	32.7	31.7	55.2	52.0	No	No
R4	37.8	36.3	58.0	56.2	No	No

TABLE 9-4: OPERATIONAL NOISE LEVEL COMPLIANCE

¹ See Exhibit 8-A for the receiver locations.

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

³ Exterior noise level standards, adjusted to reflect the ambient noise levels (see Table 5-1) per the County of San Bernardino Development Code Section 83.01.080(e).

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

⁵ Project operational noise levels provided for informational purposes

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



9.6 PROJECT OPERATIONAL NOISE LEVEL INCREASES

To describe the Project operational noise level increases, the Project operational noise levels are combined with the existing ambient noise levels measurements for the nearby receiver locations that may be potentially impacted by Project operational noise sources. Since the units used to measure noise, decibels (dB), are logarithmic units, the Project-operational and existing ambient noise levels cannot be combined using standard arithmetic equations. (2) Instead, they must be logarithmically added using the following base equation:

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

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 describes the Project noise level increases to the existing ambient noise environment. Noise levels that would be experienced at receiver locations when Project-source noise is added to the daytime and nighttime ambient conditions are presented on Tables 9-5 and 9-6, respectively. As indicated on Table 9-5, the Project will generate a daytime operational noise level increase ranging from 0.0 to 2.8 dBA L_{eq} at the nearest receiver locations. Table 9-6 shows that the Project will generate a nighttime operational noise level increase ranging from 0.0 to 3.0 dBA L_{eq} at the nearest receiver locations. Project-related operational noise level increases will not exceed the operational noise level increase significance criteria presented in Table 4-1. Therefore, Project related operational noise level 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	Increase Criteria ⁷	Increase Criteria Exceeded?
R1	48.8	L1	49.3	52.1	2.8	5.0	No
R2	40.3	L2	50.7	51.1	0.4	5.0	No
R3	31.7	L3	55.2	55.2	0.0	5.0	No
R4	36.3	L4	58.0	58.0	0.0	5.0	No

TABLE 9-5: DAYTIME PROJECT OPERATIONAL NOISE LEVEL INCREASES

¹ See Exhibit 8-A for the receiver locations.

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

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

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

⁵ Represents the combined ambient conditions plus the Project activities.

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

⁷ Significance increase criteria as shown on Table 4-1.



Receiver Location ¹	Total Project Operational Noise Level ²	Measurement Location ³	Reference Ambient Noise Levels ⁴	Combined Project and Ambient ⁵	Project Increase ⁶	Increase Criteria ⁷	Increase Criteria Exceeded?
R1	48.8	L1	48.8	51.8	3.0	5.0	No
R2	40.3	L2	49.2	49.7	0.5	5.0	No
R3	31.7	L3	52.0	52.0	0.0	5.0	No
R4	36.3	L4	56.2	56.2	0.0	5.0	No

TABLE 9-6: NIGHTTIME OPERATIONAL NOISE LEVEL INCREASES

¹ See Exhibit 8-A for the receiver locations.

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

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

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

⁵ Represents the combined ambient conditions plus the Project activities.

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

⁷ Significance increase criteria as shown on Table 4-1.



10 CONSTRUCTION IMPACTS

This section analyzes potential impacts resulting from the short-term construction activities associated with the development of the Project. Exhibit 10-A shows the construction noise source locations in relation to the nearest sensitive receiver locations previously described in Section 8. To prevent high levels of construction noise from impacting noise-sensitive land uses, San Bernardino County Development Code Section 83.01.080(g)(3), states that construction activities are limited to the hours of 7:00 a.m. to 7:00 p.m. on any day and limited at any time on Sundays and federal holidays.

10.1 CONSTRUCTION NOISE LEVELS

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

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

10.2 CONSTRUCTION REFERENCE NOISE LEVELS

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





EXHIBIT 10-A: CONSTRUCTION NOISE SOURCE LOCATIONS

🕅 Construction Activity 🕀 Receiver Locations 🛛 — Distance from receiver to Project site boundary (in feet)

N



10.3 ON-SITE CONSTRUCTION NOISE ANALYSIS

Using the reference construction equipment noise levels and the CadnaA noise prediction model, calculations of the Project construction noise level impacts at the nearby sensitive receiver locations were completed. Consistent with FTA guidance for detailed construction noise assessment, Table 10-1 presents the combined noise levels for the loudest construction equipment, assuming all equipment operates at the same time. Therefore, while stages of construction activities may overlap, only the loudest construction activity is evaluated.

To account for the dynamic nature of construction activities, the CadnaA construction noise analysis evaluates the equipment as multiple moving point sources within the construction area (Project site boundary). Construction impacts are based on the highest noise level calculated at each receiver location. As shown on Table 10-2, the construction noise levels are expected to range from 58.1 to 69.8 dBA L_{eq} at the nearby receiver locations. Appendix 10.1 includes the detailed CadnaA construction noise model inputs.

Construction Stage	Reference Construction Equipmnet ¹	Reference Noise Level @ 50 Feet (dBA L _{eq})	Composite Reference Noise Level (dBA L _{eq}) ²	Reference Power Level (dBA L _w) ³	
	Concrete Saw	83			
Demolition	Grapple (on backhoe)	83	86.8	118.4	
	Gradall	79			
	Tractor	80			
Site	Backhoe	74	84.0	115.6	
rieparation	Grader	81			
	Scraper	80			
Grading	Excavator	77	83.3	114.9	
	Dozer	78			
	Crane	73			
Building	Generator	78	80.6	112.2	
construction	Front End Loader	75			
	Paver	74			
Paving	Dump Truck	72	77.8	109.5	
	Roller	73			
	Man Lift	68			
Architectural	Compressor (air)	74	76.2	107.8	
Coating	Generator (<25kVA)	70			

TABLE 10-1: CONSTRUCTION REFERENCE NOISE LEVELS

¹ FHWA Road Construction Noise Model.

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

³ Sound power level represents the total amount of acoustical energy (noise level) produced by a sound source independent of distance or surroundings.



	Construction Noise Levels (dBA Leq)						
Receiver Location ¹	Demolition	Site Preparation	Grading	Building Construction	Paving	Architectural Coating	Highest Levels ²
R1	68.9	65.4	65.4	62.7	60.0	58.3	68.9
R2	68.7	65.2	65.2	62.5	59.8	58.1	68.7
R3	69.8	66.3	66.3	63.6	60.9	59.2	69.8
R4	69.3	65.8	65.8	63.1	60.4	58.7	69.3

TABLE 10-2: ON-SITE CONSTRUCTION EQUIPMENT NOISE LEVEL SUMMARY

 $^{1}\mbox{Construction}$ noise source and receiver locations are shown on Exhibit 10-A.

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

10.4 CONSTRUCTION NOISE LEVEL COMPLIANCE

To evaluate whether the Project will generate potentially significant short-term noise levels at nearest receiver locations, a construction-related daytime noise level threshold of 80 dBA L_{eq} is used as a reasonable threshold to assess the daytime construction noise level impacts. The construction noise analysis shows that the nearest receiver locations will satisfy the reasonable daytime 80 dBA L_{eq} significance threshold during Project construction activities as shown on Table 10-3. Therefore, the noise impacts due to Project construction noise are considered *less than significant* at all receiver locations.

TABLE 10-3:	PROJECT SITE CONSTRUCTION NOISE LEVEL COMPLIANCE

	Const	struction Noise Levels (dBA L _{eq})				
Receiver Location ¹	Highest Construction Noise Levels ²	Threshold ³	Threshold Exceeded? ⁴			
R1	68.9	80	No			
R2	68.7	80	No			
R3	69.8	80	No			
R4	69.3	80	No			

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

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

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

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

⁵ Project operational noise levels provided for informational purposes

10.6 NIGHTTIME CONCRETE POUR NOISE ANALYSIS

It is our understanding that nighttime concrete pouring activities will occur as a part of Project building construction activities. Nighttime concrete pouring activities are often used to support reduced concrete mixer truck transit times and lower air temperatures than during the daytime hours and are generally limited to the actual building pad area as shown on Exhibit 10-B. Since the nighttime concrete pours will take place outside the permitted San Bernardino County



Municipal Code, Section 16.20.125.E.3 hours of 7:00 a.m. to 7:00 p.m. on any day and at any time on Sundays and federal holidays. The Project Applicant will be required to obtain authorization for nighttime work from the San Bernardino County. Any nighttime construction noise activities shall satisfy the noise limits outlined in Table 3-1.



EXHIBIT 10-B: CONCRETE POUR NOISE SOURCE LOCATIONS



10.6.1 NIGHTTIME CONCRETE POUR REFERENCE NOISE LEVEL MEASUREMENTS

To estimate the noise levels due to nighttime concrete pouring activities, sample reference noise level measurements were taken during a nighttime concrete pouring at a construction site. Urban Crossroads, Inc. collected short-term nighttime concrete pour reference noise level measurements during the noise-sensitive nighttime hours between 1:00 a.m. to 2:00 a.m. at 27334 San Bernardino Avenue in the City of Redlands. The reference noise levels describe the expected concrete pour noise sources that may include concrete mixer truck movements and pouring activities, concrete paving equipment, rear mounted concrete mixer truck backup alarms, engine idling, air brakes, generators, and workers communicating/whistling. To describe the nighttime concrete pour noise levels associated with the construction of the Vineyard Avenue Warehouse, this analysis relies on reference sound pressure level of 67.7 dBA L_{eq} at 50 feet representing a sound power level of 100.3 dBA L_w . While the Project noise levels will depend on the actual duration of activities and specific equipment fleet in use at the time of construction, the reference sound power level of 100.3 dBA L_w is used to describe the expected Project nighttime concrete pour noise activities.

10.6.2 NIGHTTIME CONCRETE POUR NOISE LEVEL COMPLIANCE

As shown on Table 10-4, the noise levels associated with the nighttime concrete pour activities are estimated to range from 48.0 to 51.1 dBA L_{eq} and will satisfy the San Bernardino County nighttime stationary-source exterior hourly average L_{eq} residential noise level threshold at all the receiver locations. Based on the results of this analysis, all nearest noise receiver locations will experience *less than significant* impacts due to the Project related nighttime concrete pour activities. Appendix 10.2 includes the CadnaA nighttime concrete pour noise model inputs.

	Concrete Pour Construction Noise Levels (dBA L _{eq})					
Receiver Location ¹	Exterior Noise Levels ²	Threshold ³	Threshold Exceeded? ⁴			
R1	48.0	48.8	No			
R2	49.0	49.2	No			
R3	51.1	52.0	No			
R4	50.4	56.2	No			

TABLE 10-4: NIGHTTIME CONCRETE POUR NOISE LEVEL COMPLIANCE

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

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

³ Exterior nighttime noise level standards, adjusted to reflect the ambient noise levels (see Table 5-1) per the County of San Bernardino Development Code Section 83.01.080(e).

County of San Bernardino Development Code Section 83.01.080(e).

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

⁵ Project operational noise levels provided for informational purposes



10.7 CONSTRUCTION VIBRATION ANALYSIS

Construction activity can result in varying degrees of ground vibration, depending on the equipment and methods employed. The operation of construction equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Ground vibration levels associated with various types of construction equipment are summarized on Table 10-5. Based on the representative vibration levels presented for various construction equipment types, it is possible to estimate the potential Project construction vibration levels using the following vibration assessment methods defined by the FTA. To calculate the vibration levels, 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
Vibratory Roller	0.210

TABLE 10-5: VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual

Table 10-6 presents the expected Project related vibration levels at the nearby receiver locations. At distances ranging from 76 to 91 feet from Project construction activities, construction vibration velocity levels are estimated to range from 0.030 to 0.040 in/sec PPV. Based on maximum acceptable continuous vibration threshold of 0.2 PPV (in/sec), the typical Project construction vibration levels will fall below the building damage thresholds at all the noise sensitive receiver locations. Therefore, the Project-related vibration impacts are considered *less than significant* during typical construction activities at the Project site.

	Distance to Const.	Typical Construction Vibration Levels PPV (in/sec) ³					Thresholds	Thresholds	
Location ¹	Activity (Feet) ²	Small bulldozer	Jack- hammer	Loaded Trucks	Large bulldozer	Vibratory Roller	Highest Vibration Level	PPV (in/sec)⁴	Exceeded? ⁵
R1	76'	0.001	0.007	0.014	0.017	0.040	0.040	0.2	No
R2	91'	0.000	0.005	0.011	0.013	0.030	0.030	0.2	No
R3	86'	0.000	0.005	0.012	0.014	0.033	0.033	0.2	No
R4	89'	0.000	0.005	0.011	0.013	0.031	0.031	0.2	No

TABLE 10-6: PROJECT CONSTRUCTION VIBRATION LEVELS

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

² Distance from receiver to limits of construction activity.

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

⁴ Section 83.01.090(a) of the County of San Bernardino County Code.

 $^{\rm 5}$ Does the peak vibration exceed the acceptable vibration thresholds?

"PPV" = Peak Particle Velocity

11 REFERENCES

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12 CERTIFICATION

The contents of this noise study report represent an accurate depiction of the noise environment and impacts associated with the proposed Vineyard Avenue Warehouse Project. The information contained in this noise study report is based on the best available data at the time of preparation. If you have any questions, please contact me directly at (949) 584-3148.

Bill Lawson, P.E., INCE Principal URBAN CROSSROADS, INC. 1133 Camelback #8329 Newport Beach, CA 92658 (949) 581-3148 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 San Diego • March, 2018 Certified Acoustical Consultant – County of Orange • February, 2011 FHWA-NHI-142051 Highway Traffic Noise Certificate of Training • February, 2013



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APPENDIX 3.1:

SAN BERNARDINO COUNTY MUNICIPAL CODE

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§ 83.01.080 Noise.

This Section establishes standards concerning acceptable noise levels for both noise-sensitive land uses and for noise-generating land uses.

(a) Noise Measurement. Noise shall be measured:

(1) At the property line of the nearest site that is occupied by, and/or zoned or designated to allow the development of noise-sensitive land uses;

 (2) With a sound level meter that meets the standards of the American National Standards Institute (ANSI § SI4 1979, Type 1 or Type 2);

(3) Using the "A" weighted sound pressure level scale in decibels (ref. pressure = 20 micronewtons per meter squared). The unit of measure shall be designated as dB(A).

(b) Noise Impacted Areas. Areas within the County shall be designated as "noise-impacted" if exposed to existing or projected future exterior noise levels from mobile or stationary sources exceeding the standards listed in Subdivision (d) (Noise Standards for Stationary Noise Sources) and Subdivision (e) (Noise Standards for Adjacent Mobile Noise Sources), below. New development of residential or other noise-sensitive land uses shall not be allowed in noise-impacted areas unless effective mitigation measures are incorporated into the project design to reduce noise levels to these standards. Noise-sensitive land uses shall include residential uses, schools, hospitals, nursing homes, religious institutions, libraries, and similar uses.

(c) Noise Standards for Stationary Noise Sources.

(1) *Noise Standards.* Table 83-2 (Noise Standards for Stationary Noise Sources) describes the noise standard for emanations from a stationary noise source, as it affects adjacent properties:

Table 83-2							
Noise Standards for Stationary Noise Sources							
Affected Land Uses (Receiving Noise)	7:00 a.m 10:00 p.m. Leq	10:00 p.m 7:00 a.m. Leq					
Residential	55 dB(A)	45 dB(A)					
Professional Services	55 dB(A)	55 dB(A)					
Other Commercial	60 dB(A)	60 dB(A)					
Industrial	70 dB(A)	70 dB(A)					
Leq = (Equivalent Energy Leve containing the same total ener one, eight or 24 hours.	el). The sound level corresponding gy as a time-varying signal over a	to a steady-state sound level given sample period, typically					
dB(A) = (A-weighted Sound Pressure Level). The sound pressure level, in decibels, as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de- emphasizes the very low and very high frequency components of the sound, placing greater emphasis on those frequencies within the sensitivity range of the human ear							
Ldn = (Day-Night Noise Level) day obtained by adding 10 dec 10:00 p.m. to 7:00 a.m.). In thi noise during nighttime periods	The average equivalent A-weight bibles to the hourly noise levels me s way Ldn takes into account the log.	ed sound level during a 24-hou asured during the night (from ower tolerance of people for					

(2) *Noise Limit Categories.* No person shall operate or cause to be operated a source of sound at a location or allow the creation of noise on property owned, leased, occupied, or otherwise controlled by the person, which causes the noise level, when measured on another property, either incorporated or unincorporated, to exceed any one of the following:

(A) The noise standard for the receiving land use as specified in Subdivision (b) (Noise-Impacted Areas), above, for a cumulative period of more than 30 minutes in any hour.

- (B) The noise standard plus five dB(A) for a cumulative period of more than 15 minutes in any hour.
- (C) The noise standard plus ten dB(A) for a cumulative period of more than five minutes in any hour.
- (D) The noise standard plus 15 dB(A) for a cumulative period of more than one minute in any hour.
- (E) The noise standard plus 20 dB(A) for any period of time.

(d) Noise Standards for Adjacent Mobile Noise Sources. Noise from mobile sources may affect adjacent properties adversely. When it does, the noise shall be mitigated for any new development to a level that shall not exceed the standards described in the following Table 83-3 (Noise Standards for Adjacent Mobile Noise Sources).

	Table 83-3				
	Table 83-3 Noise Standards for Adjacent Mobile Noise Sources Land Use Ldn (or CNEL) dB(A) ries Uses Interior (1) Exterior (2) ial Single and multi-family, duplex, mobile homes 45 60 ⁽³⁾ cial Hotel, motel, transient housing 45 60 ⁽³⁾ Commercial retail, bank, restaurant 50 N/A Office building, research and development, professional offices 45 65 Amphitheater, concert hall, auditorium, movie theater 45 N/A hal/Public Hospital, nursing home, school classroom, religious institution, library 45 65				
Land Use			Ldn (or CNEL) dB(A)		
Categories		Uses	Interior ⁽¹⁾	Exterior ⁽²⁾	
Residential	<u>.</u>	Single and multi-family, duplex, mobile homes	45	60 ⁽³⁾	
Commercial		Hotel, motel, transient housing	45	60 ⁽³⁾	
		Commercial retail, bank, restaurant	50	N/A	
		Office building, research and development, professional offices	45	65	
		Amphitheater, concert hall, auditorium, movie theater	45	N/A	
Institutional/Put	olic	Hospital, nursing home, school classroom, religious institution, library	45	65	
Open Space		Park	N/A	65	
Notes:					
(1) The indoor	envir	onment shall exclude bathrooms, kitchens, to	lets, closets and	d corridors.	
 (2) The outdoo Hospital/off Hotel and r Mobile hom Multi-family Park picnic Private yan School play 	fice b notel ne pa / priva area d of s ygrou	ironment shall be limited to: uilding patios recreation areas rks ate patios or balconies s ingle-family dwellings nds			
(3) An exterior levels have been noise reduction with windows and acceptable interventilation.	r noise en sub techi nd do rior ne	e level of up to 65 dB(A) (or CNEL) shall be a ostantially mitigated through a reasonable app nology, and interior noise exposure does not e ors closed. Requiring that windows and doors bise level shall necessitate the use of air cond	llowed provided lication of the b exceed 45 dB(A s remain closed litioning or mecl	exterior noise est available) (or CNEL) to achieve an nanical	
CNEL = (Comm during a 24-hou evening from 7: p.m. to 7:00 a.m	nunity ur day :00 p. n.	Noise Equivalent Level). The average equiva , obtained after addition of approximately five m. to 10:00 p.m. and ten decibels to sound leve	alent A-weighted decibels to souvels in the night	d sound level nd levels in the from 10:00	

(e) Increases in Allowable Noise Levels. If the measured ambient level exceeds any of the first four noise limit categories in Subdivision (d)(2), above, the allowable noise exposure standard shall be increased to reflect the ambient noise level. If the ambient noise level exceeds the fifth noise limit category in Subdivision (d)(2), above, the maximum allowable noise level under this category shall be increased to reflect the maximum ambient noise level.

(f) *Reductions in Allowable Noise Levels.* If the alleged offense consists entirely of impact noise or simple tone noise, each of the noise levels in Table 83-2 (Noise Standards for Stationary Noise Sources) shall be reduced by five dB(A).

(g) *Exempt Noise*. The following sources of noise shall be exempt from the regulations of this Section:

- (1) Motor vehicles not under the control of the commercial or industrial use.
- (2) Emergency equipment, vehicles, and devices.

(3) Temporary construction, maintenance, repair, or demolition activities between 7:00 a.m. and 7:00 p.m., except Sundays and Federal holidays.

(h) Noise Standards for Other Structures. All other structures shall be sound attenuated against the combined input of all present and projected exterior noise to not exceed the criteria.

Table 83-4	
Noise Standards for Other Structures	
Typical Uses	12-Hour Equivalent Sound Level (Interior) in dBA Ldn
---	---
Educational, institutions, libraries, meeting facilities, etc.	45
General office, reception, etc.	50
Retail stores, restaurants, etc.	55
Other areas for manufacturing, assembly, testing, warehousing, etc.	65

In addition, the average of the maximum levels on the loudest of intrusive sounds occurring during a 24-hour period shall not exceed 65 dBA interior.

(Ord. 4011, passed - -2007; Am. Ord. 4245, passed - -2014)

§ 83.01.090 Vibration.

(a) *Vibration Standard.* No ground vibration shall be allowed that can be felt without the aid of instruments at or beyond the lot line, nor shall any vibration be allowed which produces a particle velocity greater than or equal to two-tenths inches per second measured at or beyond the lot line.

(b) *Vibration Measurement*. Vibration velocity shall be measured with a seismograph or other instrument capable of measuring and recording displacement and frequency, particle velocity, or acceleration. Readings shall be made at points of maximum vibration along any lot line next to a parcel within a residential, commercial and industrial land use zoning district.

(c) Exempt Vibrations. The following sources of vibration shall be exempt from the regulations of this Section.

(1) Motor vehicles not under the control of the subject use.

(2) Temporary construction, maintenance, repair, or demolition activities between 7:00 a.m. and 7:00 p.m., except Sundays and Federal holidays.

(Ord. 4011, passed - -2007)

APPENDIX 5.1:

STUDY AREA PHOTOS



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15533_L1_A 1.North 34, 8' 32.540000"117, 24' 20.660000"



15533_L1_A 2.South 34, 8' 32.580000"117, 24' 20.660000"



15533_L1_A 3.East 34, 8' 32.610000"117, 24' 20.600000"



15533_L1_A 4.West 34, 8' 32.580000"117, 24' 20.660000"



15533_L2_C 1.North 34, 8' 32.770000"117, 24' 20.030000"



15533_L2_C 2.South 34, 8' 32.700000"117, 24' 20.000000"



15533_L2_C 3.East 34, 8' 32.690000"117, 24' 19.970000"



15533_L2_C 4.West 34, 8' 32.760000"117, 24' 20.060000"



15533_L3_J 1.North 34, 8' 27.210000"117, 24' 19.310000"



15533_L3_J 2.South 34, 8' 27.120000"117, 24' 19.340000"



15533_L3_J 3.East 34, 8' 27.350000"117, 24' 19.400000"



15533_L3_J 4.West 34, 8' 27.350000"117, 24' 19.310000"



15533_L4_O 1.North 34, 8' 22.690000"117, 24' 19.230000"



15533_L4_O 2.South 34, 8' 22.530000"117, 24' 19.290000"



15533_L4_O 3.East 34, 8' 22.720000"117, 24' 19.340000"



15533_L4_O 4.West 34, 8' 22.650000"117, 24' 19.370000"

APPENDIX 5.2:

NOISE LEVEL MEASUREMENT WORKSHEETS



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						24-Ho	ur Noise L	evel Measu	urement S	ummary						
Date:	Tuesday, Ju	ne 6, 2023			Location:	L1 - Located	north of the	site near the	residence a	t 18205	Meter	: Piccolo II			JN:	15533
Project:	Blackmon 8	k Berry			Source:	Bohnert Ave									Analyst:	Z. Ibrahim
							Hourly L _{eq}	dBA Readings	(unadjusted)							
85.0	2															
a 80.0																
<u>ع</u> 70.0 65.0	3 =====															
60.0 تــ 60.0 <u>ح</u> 55.0	3 =====															
50.0 0 45.0	S .	6.08	- LO	8.4 L.8	L:2	9.9 9.4		8. 1 .	un d		- <mark>0</mark>	6. 4.	<mark></mark>	<mark>.5</mark>	8.8 8.8	<u> </u>
± 40.0 35.0		-44	4	- 45 25	- 2	<mark>- 4</mark>	- <mark>4</mark>	<mark>4 4</mark>	- <mark>4</mark>	<mark>4</mark> - 4	- <mark>4</mark>	2 <mark>4 - 7</mark> -	- <mark>ឆ ឆ</mark> -		4 4	- 4
	Dete: Tuesday, June 6, 2023. Location: L1-Located north of the site near the residence at 18205. Meter: Piccolo II Arrive Statument Accession Dete: Tuesday, June 6, 2023. Colspan="2">Meter: Piccolo II Meter: Piccolo II Arrive Statument Accession Meter: Meter Accession Meter: Piccolo II Meter: Piccolo II Arrive Statument Accession Meter: Meter: Accession Meter: Piccolo II Meter: Piccolo II Arrive Accession Meter: Piccolo II Arrive Accession Meter: Piccolo II Arrive Accession Meter: Piccolo II Meter: Piccolo II															
								Hour Be	eginning							
Timeframe	Hour			L _{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%		Adj.	Adj. L _{eq}
	0	45.2 49.9	50.5 57.9	41.5	49.9 57.8	49.4 57.5	48.6 56.9	48.2 55.9	46.2	44.1 44.8	42.2	41.9 41.8	41.6	45.2 49.9	10.0	55.2
	2	43.8	47.3	41.7	46.8	46.3	45.6	45.3	44.3	43.5	42.3	42.0	41.8	43.8	10.0	53.8
Night	3	46.5	50.1	44.3	49.7	49.3	48.6	48.2	47.1	46.2	45.0	44.7	44.4	46.5	10.0	56.5
	4 5	48.4 51.8	58.8	45.4	58.0	52.7	51.9	51.5	52.4	50.7	48.5	45.8	45.5	48.4 51.8	10.0	61.8
	6	51.2	57.4	47.7	56.8	56.1	54.7	53.8	51.6	50.4	48.6	48.3	47.8	51.2	10.0	61.2
	7	49.9 49.4	54.1 54.5	47.4 46.8	53.6 53.7	53.2 53.2	52.3 51.9	51.8 51.3	50.4 49.9	49.4 48.9	48.1 47.6	47.9 47.3	47.5 47.0	49.9 49.4	0.0	49.9 49.4
	9	48.0	53.5	44.1	53.0	52.7	52.1	51.7	48.5	46.7	45.0	44.7	44.3	48.0	0.0	48.0
	10	46.8	51.5	43.8	51.0	50.5	49.5	49.0	47.5	46.3	44.6	44.4	44.0	46.8	0.0	46.8
	11	46.4 44.5	52.7 49.8	42.4	51.7 49.2	50.8 48.9	49.6 48.1	49.1 47.2	47.3 45.3	45.4 43.4	43.3 41.9	43.0 41.6	42.6	46.4 44.5	0.0	46.4 44.5
	13	46.3	51.8	43.0	51.2	50.7	49.5	49.0	47.0	45.6	43.7	43.5	43.1	46.3	0.0	46.3
Day	14 15	48.4	54.1	44.9	53.5	53.2	52.5	51.7	48.8	47.2	45.6	45.3	45.0	48.4	0.0	48.4
	15	48.0	52.7	45.2	52.2	51.5	50.8	50.2	48.8	47.5	45.9	45.7	45.4	48.0	0.0	48.0
	17	51.4	56.5	48.9	55.9	55.3	54.1	53.5	51.7	50.7	49.6	49.4	49.0	51.4	0.0	51.4
	18 19	53.2 51.2	58.0	50.7	57.4 54.7	56.7 54.2	55.7 53 1	55.2 52.7	53.7 51.6	52.7 50.8	51.4	51.2	50.8 49.3	53.2 51.2	0.0	53.2 56.2
	20	49.5	52.0	47.8	51.7	51.4	51.0	50.7	49.9	49.3	48.4	48.2	47.9	49.5	5.0	54.5
	21	49.4	52.9	47.3	52.5	52.3	51.7	51.1	49.9	49.0	47.9	47.7	47.4	49.4	5.0	54.4
Night	22 23	48.8 46.7	52.9 51.6	45.9 43.2	52.3 51.2	52.0 50.8	51.4 50.0	51.0 49.2	49.5 47.7	48.4 45.9	46.7 44.0	46.4 43.7	46.0 43.4	48.8 46.7	10.0 10.0	58.8 56.7
Timeframe	Hour	L _{eq}	L _{max}	L _{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	24-Hour	Leq	(dBA)
Day	Min	44.5	49.8	41.2	49.2	48.9	48.1	47.2	45.3	43.4	41.9 51 4	41.6	41.3	CNEL	Daytime	Nighttime
Energy	Average	49.3	Ave	erage:	53.0	52.5	51.6	51.0	49.4	48.1	46.7	46.4	46.1		(7am-10pm)	(10pm=7am)
Night	Min	43.8	47.3	41.4	46.8	46.3	45.6	45.3	44.3	43.5	42.0	41.8	41.5	55.6	49.3	48.8
Energy	Average	48.8	58.8 Ave	47.7 erage:	58.0	57.5	56.9	55.9	48.6	46.8	48.6	48.3	47.8			



						24-Ho	ur Noise L	evel Meas	urement S	ummary						
Date:	Tuesday, Ju	ine 6, 2023			Location:	L2 - Located	north of the	site near the	residence a	t 18279	Meter	: Piccolo II			JN:	15533
Project:	Blackmon &	& Berry			Source:	Bohnert Ave									Analyst:	Z. Ibrahim
							Hourly L _{eq}	dBA Readings	(unadjusted)							
85.	0															
Uber Volse Level Measurement Summary Date: Tuesday, June 6, 2023 Location: L2 - Located north of the site near the residence at 18279 Meter: Piccolo II Just 5533 Project: Blackmon & Berry Location: L2 - Located north of the site near the residence at 18279 Meter: Piccolo II Just 5533 Meter: Piccolo II Just 5533 Just 553 Just 553 Just 553 Just 55 Just 55 <th cols<="" td=""></th>																
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60.1 ت ۔ 55.1 <u>ح</u>	0															
n 50. o 45.	0 6.	4.9	7.9	9.5	1.3	<mark>1.5</mark>		<mark>7.4</mark>	6. 0	9.6	<mark></mark>	3.0	2.8	<mark>1:3</mark>	9.9	
± 40.0 35.0	0 - 4 -	- <u>v</u> - 4	4	4 ú		<u></u>	4	4 4	4	4 4	4	<u>л</u> – <u>л</u>	ii	<u> </u>	<u>0</u> 4	4
	0	1 2	3	4 5	6	7 8	9	10 11	12 1	13 14	15	16 17	18 19	20	21 22	23
Timoframo	Hour	1	,	,	11%	12%	15%			150%	100%	105%	100%	,	Adi	Adi I
Timejrume	0	44.9	48.7	42.6	48.3	47.8	46.9	46.5	45.4	44.5	43.2	43.0	42.7	44.9	10.0	54.9
	1	50.2	56.9	42.5	56.6	56.5	56.1	55.8	51.0	45.0	43.2	43.0	42.6	50.2	10.0	60.2
Night	2	44.9	48.1	42.6	47.7	47.3	46.7	46.4	45.4	44.6	43.3	43.0	42.7	44.9	10.0	54.9
Nigrit	4	49.5	54.4	45.5	54.0	53.7	53.0	52.4	48.2	47.4	40.1	45.8	46.5	47.5	10.0	59.5
	5	51.2	55.8	48.5	55.2	54.6	53.5	53.0	51.7	50.8	49.3	49.0	48.6	51.2	10.0	61.2
	6	51.3	55.5 55.7	48.8	55.0	54.5	53.6 54.0	53.1	51.8	50.8	49.6	49.3	49.0	51.3	0.0	61.3 51.5
	8	50.5	54.4	48.2	53.8	53.4	52.5	52.1	51.0	50.1	48.9	48.6	48.3	50.5	0.0	50.5
	9 10	48.9 47.4	55.0 50.8	45.5	54.3	53.8 50.0	53.0	52.3	49.2	47.6 47.1	46.2	46.0 45 0	45.7 45.6	48.9	0.0	48.9
	10	46.6	51.1	43.7	50.5	50.0	49.5	49.0	47.5	45.9	44.3	44.1	43.8	46.6	0.0	46.6
	12	45.9	53.0	41.8	52.4	51.8	50.4	49.5	46.3	44.2	42.3	42.1	41.9	45.9	0.0	45.9
Dav	13 14	47.2 49.6	53.2 55.3	44.0 46.4	52.6 54.9	51.9 54.4	50.5 53.4	49.7 52.7	47.7 49.8	46.3 48.6	44.7 47.1	44.4 46.9	44.1 46.5	47.2	0.0	47.2 49.6
	15	49.2	54.1	46.6	53.6	53.0	52.1	51.5	49.9	48.4	47.2	47.0	46.7	49.2	0.0	49.2
	16 17	50.6	54.6	48.2	54.2	53.8	53.0	52.4	51.0	50.1	48.8	48.6	48.3	50.6	0.0	50.6
	17	53.0 54.7	60.3	50.5	59.5	58.7	55.8 57.5	55.2	55.1	52.5	52.7	52.4	52.0	55.0	0.0	53.0 54.7
	19	52.8	57.3	50.6	56.7	56.1	54.9	54.3	53.2	52.4	51.2	51.0	50.7	52.8	5.0	57.8
	20 21	51.3 51.0	54.6 55.3	49.2 48.7	54.2 54.8	53.8 54 3	53.2 53.4	52.8 52.8	51.7 51.4	51.0 50.5	49.9 49.4	49.7 49 1	49.3 48.8	51.3 51.0	5.0 5.0	56.3 56.0
Night	22	49.9	53.8	47.2	53.3	53.0	52.3	51.8	50.3	49.4	48.0	47.8	47.4	49.9	10.0	59.9
Timoframo	23	48.1	53.8	44.6	53.5	53.0	51.7	50.5	48.8	47.1	45.4	45.1	44.7	48.1	10.0	58.1
Dev	Min	45.9	50.8	41.8	50.4	50.0	49.3	48.9	46.3	44.2	42.3	42.1	41.9	24-Hour	Daytime	Nighttime
Day	Max	54.7	60.3	51.9	59.5	58.7	57.5	56.7	55.1	54.0	52.7	52.4	52.0	CNEL	(7am-10pm)	(10pm-7am)
Energy	Average	50.7	Ave 48.1	42.5	54.3 47.7	53.8	52.8 46.7	52.2 46.4	50.5 45.4	49.3 44.5	48.0	47.7	47.4	56 3	50 7	49 2
Night	Max	51.3	56.9	48.8	56.6	56.5	56.1	55.8	51.8	50.8	49.6	49.3	49.0	50.5	50.7	75.2
Energy	Average	49.2	Ave	rage:	52.9	52.5	51.6	51.1	49.2	47.6	46.1	45.9	45.5			



Date:	Tuesday, Ju	ne 6, 2023			Location	24-Ho	ur Noise L o east of the si	evel Measurite near the r	urement S residence at :	ummary 18312	Meter:	Piccolo II			JN:	15533
Project:	Blackmon 8	k Berry			Source	Vineyard Ave	2.								Analyst:	Z. Ibrahim
1							Hourly L _{eq} (dBA Readings	(unadjusted)							
85.	0															
₹ ^{80.}	Õ – – –															
e 73.	0															
e5.																
<u>→</u> 55.	ğ — — —									<u> </u>		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	o			
a 50.0 o 45.0	0 0 - S	1.0					8.		4	28.	<u>.</u>		<mark>57.0</mark>	5 .9	3.7	
≖ 40.	0 - 4 -	- ⁵ - 5		- <u>2</u> <u>2</u>		– <mark>හ</mark> ––– හ –		<u>ю — </u>	- <mark>4</mark>	<u>م</u>	- ¹⁰ 1	;		- ⁶	<mark>и</mark> — й –	- 2 -
	0	1 2	3	1 5	6	7 8	α 1	IN 11	12 1	3 1/	15 1	6 17	18 10	20	21 22	23
	0	1 2	5	4 J	0	/ 0	5	Hour Be	eginning	.5 14	15 1	0 17	10 15	20	21 22	25
Timeframe	Hour	L _{eq}	L _{max}	L _{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L _{eq}	Adj.	Adj. L _{eq}
	0	47.9	51.6	45.5	51.2	50.8	50.1	49.6	48.5	47.6	46.2	45.9	45.6	47.9	10.0	57.9
	1	54.0	60.5	50.1	60.0	59.6	58.8	58.1	53.5	51.8	50.6	50.4	50.1	54.0	10.0	64.0
Nicht	2	49.1	52.5	46.4	52.2	51.9	51.3	50.8	49.7	48.7	47.2	46.9	46.6	49.1	10.0	59.1
Night	3	51.7	54.9	49.3	54.6	54.3	53.7	53.4	52.3	51.4	50.0	49.7	49.4	51.7	10.0	61.7
	5	53.1	58.5	49.0 50.6	57.9	57.3	56.0	55.1	53.4	52.4	51.2	51.0	49.7 50.7	53.1	10.0	63.1
	6	52.8	55.1	51.2	54.8	54.6	54.2	54.0	53.2	52.6	51.6	51.5	51.3	52.8	10.0	62.8
	7	53.2	56.8	51.3	56.5	56.2	55.6	55.0	53.5	52.8	51.8	51.6	51.4	53.2	0.0	53.2
	8	53.2	58.0	50.9	57.6	57.1	55.8	54.9	53.4	52.7	51.6	51.3	51.0	53.2	0.0	53.2
	9	51.8	58.7	48.3	57.9	57.4	56.3	55.6	51.5	50.1	49.0	48.7	48.4	51.8	0.0	51.8
	10	51.5	58.6	48.3	57.8	57.0	54.9	53.8	51.9	50.6	49.1	48.8	48.4	51.5	0.0	51.5
	11	50.8 47.4	57.7	46.6	52.5	52.0	50.6	33.9 49.7	51.5 47.7	49.0	47.4	47.1	40.7	50.8 47.4	0.0	50.8 47.4
	13	54.4	65.1	48.1	64.5	63.9	62.3	58.5	52.0	50.5	48.8	48.5	48.2	54.4	0.0	54.4
Day	14	58.6	69.5	50.3	68.6	67.9	66.1	64.1	56.5	53.8	51.2	50.8	50.5	58.6	0.0	58.6
	15	53.3	62.5	50.0	61.4	60.5	56.8	55.5	53.1	51.9	50.6	50.4	50.1	53.3	0.0	53.3
	16	53.5	57.5	51.3	57.1	56.6	55.6	55.1	54.0	53.1	51.9	51.6	51.4	53.5	0.0	53.5
	17	57.2	60.5	55.1	60.2	59.8	59.2	58.8	57.7	56.8	55.7	55.5	55.2	57.2	0.0	57.2
	18	59.0	61.9 60 F	57.0	61.6	61.3	60.7	60.4 59.0	59.4 EQ 1	58.7	57.6	57.4	57.1	59.0	0.0	59.0
	20	55.9	59.2	53.5	58.9	58.5	57.9	57.5	56.4	55.6	54.2	53.9	53.6	55.9	5.0	60.9
	21	55.8	60.5	53.0	60.0	59.4	58.2	57.6	56.4	55.4	53.9	53.6	53.2	55.8	5.0	60.8
Night	22	53.7	58.7	50.9	58.2	57.7	56.7	56.2	54.0	53.1	51.7	51.4	51.0	53.7	10.0	63.7
Mgm	23	51.1	56.6	47.6	56.2	55.7	54.5	53.7	51.5	50.1	48.5	48.2	47.8	51.1	10.0	61.1
Timeframe	Hour				L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	24-Hour	Leq	dBA)
Day	IVIIN Max	47.4 59.0	53.U 69.5	45.0	52.5	52.0	50.6	49.7 64.1	47.7	46.6 58.7	45.4 57.6	45.3 57.4	45.0 57.1	CNEL	(7am-10nm)	Nighttime
Energy	Average	55.2	Ave	erage:	59.5	59.0	57.6	56.6	54.2	53.0	51.6	51.3	51.0		(7am-10pm)	(10pm=/um)
Nicht	Min	47.9	51.6	45.5	51.2	50.8	50.1	49.6	48.5	47.6	46.2	45.9	45.6	59.7	55.2	52.0
Night	Max	54.0	60.5	51.2	60.0	59.6	58.8	58.1	54.0	53.1	51.7	51.5	51.3		00.1	
Energy	Average	52.0	Ave	erage:	55.7	55.2	54.4	53.8	52.0	51.0	49.7	49.4	49.1			



						24-Ho	ur Noise Le	evel Measu	urement S	ummary						
Date:	Tuesday, Ju	ne 6, 2023			Location:	L4 - Located	east of the si	te near the r	esidence at 2	2231 N	Meter:	Piccolo II			JN:	15533
Project:	Blackmon 8	Berry			Source:	Maple Ave									Analyst:	Z. Ibrahim
							Hourly L _{eq} (dBA Readings	(unadjusted)							
85.0	<u>0</u>						1									
80.0																
<u>ع</u> /0.0 65.0																
60.0 ت۔ 55.0 <u>ح</u>						m m						<u> </u>	<mark>.</mark>		4 – ~ ~	
b 50.0 o 45.0	6 - : -	3.4	290	56.6	28.2	23.6	4 .3	8.5	0.0		56.5	<mark></mark>	- <mark>60</mark>	2 <mark>.</mark> 59	59.	56.1
± 40.0 35.0		_ w ii						n	- 4 - i	ň" _				+		
	0	1 2	3	4 5	6	7 8	9 1	.0 .11	12 1	.3 14	15 1	6 17	18 19	20	21 22	23
								Hour Be	eginning							
Timeframe	Hour	L _{eq}	L _{max}	L _{min}	L1%	L2%	55.8	L8%	L25%	L50%	L90%	L95%	L99%	L eq	Adj.	Adj. L _{eq}
	1	54.9	62.5	49.3	61.9	61.3	59.7	59.0	55.3	52.8	50.5	50.2	49.5	54.9	10.0	64.9
A.Y. 1.1	2	53.4	57.9	49.3	57.5	57.2	56.5	55.9	54.2	52.9	50.4	50.0	49.4	53.4	10.0	63.4
Night	3	56.0 56.6	60.1 60.6	52.2	59.7 60.2	59.4 59.9	58.7 59.0	58.3 58.5	56.9 57.2	55.5 56.2	53.3 54.6	52.8 54.3	52.4 54.0	56.0 56.6	10.0	66.0 66.6
	5	57.1	59.7	55.0	59.4	59.2	58.8	58.5	57.5	56.8	55.7	55.4	55.1	57.1	10.0	67.1
	6	58.2	60.7	56.1	60.4	60.2	59.8	59.5	58.7	58.0	56.8	56.6	56.3	58.2	10.0	68.2
	8	59.3 57.9	60.6	55.8	60.3	62.9	59.5	59.2	59.9 58.4	58.5 57.7	57.3	57.1	56.0	59.3	0.0	59.3 57.9
	9	54.3	58.0	52.2	57.6	57.4	56.7	56.0	54.8	54.0	52.8	52.6	52.3	54.3	0.0	54.3
	10	54.8 52 5	58.0	52.3	57.6	57.3	56.8	56.5	55.4	54.5	53.0	52.7	52.4	54.8	0.0	54.8 52 5
	11	49.0	53.3	46.9	52.6	52.0	55.8	50.6	49.5	48.6	43.3	47.2	47.0	49.0	0.0	49.0
	13	52.8	56.9	50.4	56.4	55.9	54.8	54.4	53.4	52.4	51.0	50.7	50.5	52.8	0.0	52.8
Day	14 15	55.8 56.5	59.7 63.5	53.1 53.9	59.3 62.4	59.0 61.2	58.2 59.3	57.7 58 1	56.4 56.7	55.4 55.9	53.8 54.5	53.5 54.3	53.2 54.0	55.8 56.5	0.0	55.8 56.5
	16	57.6	61.1	55.4	60.7	60.5	59.6	59.1	58.1	57.3	56.1	55.8	55.5	57.6	0.0	57.6
	17	60.3	63.3	58.2	63.0	62.7	62.1	61.8	60.8	60.1	58.8	58.6	58.3	60.3	0.0	60.3
	18 19	61.6 60.5	64.8 63.6	59.5 58.0	64.5 63.3	64.2 63.0	63.6 62.4	63.2 62.1	62.2 61.1	61.4 60.3	60.2 58.9	59.9 58.5	59.6 58.1	61.6 60.5	0.0	61.6 65.5
	20	59.5	62.5	57.0	62.3	62.0	61.5	61.2	60.1	59.2	57.8	57.5	57.1	59.5	5.0	64.5
	21	59.4	63.4	56.5	63.1	62.8	62.1	61.6	59.9	59.0	57.4	57.0	56.7	59.4	5.0	64.4
Night	22	57.8	61.3	54.6	60.9	60.6	59.6	58.9	58.3	57.3	53.0	55.2	54.8	57.8	10.0	66.1
Timeframe	Hour	L _{eq}	L _{max}	L _{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	24-Hour	Leq	(dBA)
Day	Min Max	49.0 61.6	53.3 64.8	46.9 59.5	52.6 64.5	52.0 64.2	51.1 63.6	50.6 63.2	49.5 62.2	48.6 61.4	47.4 60.2	47.2 59.9	47.0 59.6	CNEL	Daytime (7am-10pm)	Nighttime (10pm-7am)
Energy	Average	58.0	Ave	rage:	60.5	60.1	59.3	58.8	57.3	56.3	55.0	54.7	54.4			
Night	Min Max	53.1 58.2	57.4 62.5	49.3 56.1	57.1 61 9	56.7 61 3	55.8 60.7	55.3 60.3	54.0 58.7	52.7 58.0	50.4 56.8	50.0 56.6	49.4	63.5	58.0	56.2
Energy	Average	56.2	Ave	rage:	59.9	59.5	58.7	58.2	56.6	55.2	53.4	53.0	52.6			

APPENDIX 7.1:

OFF-SITE TRAFFIC NOISE LEVEL CALCULATIONS



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	FHWA-R	D-77-108 HIGH	WAY NO	DISE F	PREDIC	TION MC	DDEL (S	9/12/20	021)		
Scenai Road Nan Road Segme	rio: E ne: Alder Av. ent: s/o Casma	lia Av.				Project I Job Nu	Vame: \ mber: 1	/ineya 15533	rd Av. War	rehouse	
SITE	SPECIFIC IN	NPUT DATA				N	DISE N	IODE	L INPUT	S	
Highway Data				Si	ite Con	ditions (l	Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	14,192 vehicl	es				,	Autos:	15		
Peak Hour	Percentage:	7.17%			Me	dium True	cks (2 A	(xles):	15		
Peak H	-lour Volume:	1,018 vehicle	s		He	avy Truck	ks (3+ A	(xles):	15		
Ve	ehicle Speed:	50 mph		V	ohiclo I	Mix					
Near/Far La	ane Distance:	72 feet			Veh	icleTyne		Dav	Evenina	Night	Daily
Site Data						A	utos:	69.3%	10.6%	20.1%	88.81%
Ba	rrier Height	0.0 feet			Me	edium Tru	icks:	73.8%	4.2%	22.1%	10.83%
Barrier Type (0-V	Vall. 1-Berm):	0.0			ŀ	leavy Tru	icks:	79.1%	4.7%	16.3%	0.36%
Centerline D	ist. to Barrier:	60.0 feet		N	nisa Sr	urco Elo	vation	in fa	oof)		
Centerline Dist.	to Observer:	60.0 feet			0136 00	Autos	0.0	000			
Barrier Distance	to Observer:			Mediu	n Trucks	. 21	207				
Observer Height	(Above Pad):	5.0 feet			Heav	n Trucks	. 2.4	104	Grade Adi	iustment	.00
P	ad Elevation:	0.0 feet			near	y macks.	. 0.0	-04	0/000/10	aounom	. 0.0
Ro	ad Elevation:	0.0 feet		Lá	ane Equ	uivalent l	Distanc	e (in t	feet)		
	Road Grade:	0.0%				Autos:	48.2	260			
	Left View:	-90.0 degre	es		Mediui	n Trucks:	48.0	076			
	Right View:	90.0 degre	es		Heav	y Trucks:	48.0	094			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distar	ice	Finite	Road	Fresn	el	Barrier Atte	en Ber	m Atten
Autos:	70.20	-2.74		0.13		-1.20		-4.69	0.0	000	0.000
Medium Trucks:	81.00	-11.87		0.15		-1.20		-4.88	0.0	000	0.000
Heavy Trucks:	85.38	-26.66		0.15		-1.20		-5.34	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier a	ttenu	ation)						
VehicleType	Leq Peak Ho	ur Leq Day	/ Le	eq Eve	ening	Leq N	light		Ldn	CI	NEL
Autos:	66	3.4	65.5		63.3		61.3		68.5	5	68.9
Medium Trucks:	68	3.1	67.4		60.9		63.4		70.5	5	70.6
Heavy Trucks:	57	7.7	57.3		51.0		51.7		59.2	2	59.4
Vehicle Noise:	70	0.6	69.8		65.5		65.7		72.8	3	73.0
Centerline Distan	ce to Noise C	ontour (in feet)					T			
				70 dE	BA	65 d	BA	6	60 dBA	55	dBA
			Ldn:		92		199		429		925
		C	NEL:		95		206		443		955

11114							IODEE	(0) 12/2	•- •)		
Scenario: E+P						Projec	t Name	: Vineya	ard Av. Wa	rehouse	
Road Name: Alder Av						Job I	lumber	15533			
Road Segment: s/o Casi	nalia Av	Ι.									
SITE SPECIFIC	INPU'	T DATA				I	NOISE	MODE	EL INPUT	S	
Highway Data					Site Con	ditions	(Hard	= 10, S	oft = 15)		
Average Daily Traffic (Adt,	: 14,6	00 vehicle	es					Autos.	15		
Peak Hour Percentage	: 7.'	17%			Me	dium Ti	rucks (2	Axles).	15		
Peak Hour Volume	: 1,04	17 vehicles	5		He	avy Tru	icks (3+	Axles).	15		
Vehicle Speed	: (50 mph			Vehicle I	Nix					
Near/Far Lane Distance	: 1	72 feet			Vehi	cleTyp	e	Day	Evening	Night	Daily
Site Data							Autos:	69.3%	6 10.6%	20.1%	87.64
Barrier Heigh	:	0.0 feet			Me	edium 1	rucks:	73.8%	6 4.2%	22.1%	10.589
Barrier Type (0-Wall, 1-Berm,		0.0			ŀ	leavy 1	rucks:	79.1%	6 4.7%	16.3%	1.799
Centerline Dist. to Barrie	: 6	0.0 feet			Noise So	urce E	levatio	ns (in f	eet)		
Centerline Dist. to Observe	: 6	0.0 feet				Auto	os: (0.000	1		
Barrier Distance to Observe		0.0 feet			Mediur	n Truck	(s: 2	2.297			
Observer Height (Above Pad	:	5.0 feet			Heav	y Truck	(S: 8	3.004	Grade Ad	justment	: 0.0
Pad Elevation	r I	0.0 feet			Long Eg	ui ve le n	t Diata	nee (in	faat		
Road Elevation		U.U Teet			Lane Equ	Auto			ieelj		
Road Grade	. 0.1	J% 0.0. dogrod			Mediu	AUIC n Truck	/S. 40	0.200			
Dight View	· -9	0.0 degree	25		Heav	v Truck	(e. //	3.070 R 004			
Night view	. 9	0.0 degree	55		neav	y macr	ю. т	5.054			
FHWA Noise Model Calculati	ons										
VehicleType REMEL	Tra	ffic Flow	Di	stance	Finite	Road	Fres	snel	Barrier Att	en Bei	rm Atten
Autos: 70.	20	-2.67		0.1	13	-1.20		-4.69	0.0	000	0.00
Medium Trucks: 81.	00	-11.85		0.1	15	-1.20		-4.88	0.0	000	0.00
Heavy Trucks: 85.	38	-19.58		0.1	15	-1.20		-5.34	0.0	000	0.00
Unmitigated Noise Levels (w	ithout 1	Topo and	barri	er attei	nuation)						
VehicleType Leq Peak I	lour	Leq Day	e	Leq E	evning	Leq	Night		Ldn	С	NEL
Autos:	66.5		65.5		63.4		61	.4	68.	6	68.
Medium Trucks:	68.1		67.4		61.0		63	.4	70.	5	70.
Heavy Trucks:	64.7		64.4		58.1		58	.8	66.	3	66.
Vehicle Noise:	71.4		70.7		66.1		66	i.4	73.0	3	73.
Centerline Distance to Noise	Conto	ur (in feet))	70	-(0.4				CO -/D A		-10.4
			Lalari	70	aBA	65	aBA		OU ABA	55	aBA
		~	Lan:		104		22	3	481		1,03
		()	vel '		107				107		1 ()7(

Monday, October 2, 2023

	FHWA-RD	-77-108 HIGHV	VAY NOIS	SE PRED	ICTION M	ODEL (9/12/2	021)		
Scenar Road Nam Road Segme	io: OYC ne: Alder Av. nt: s/o Casmali	a Av.			Project Job N	Name: umber:	Vineya 15533	ard Av. War	ehouse	
SITE	SPECIFIC IN	PUT DATA			N	IOISE I	NODE	L INPUT	S	
Highway Data				Site Co	onditions	(Hard =	10, So	oft = 15)		
Average Daily Peak Hour	Traffic (Adt): Percentage:	23,818 vehicles 7.17%		/	1edium Tri	ucks (2)	Autos: Axles):	15 15		
Peak H	lour Volume:	1,708 vehicles		1	leavy Truc	cks (3+)	Axles):	15		
Ve	hicle Speed:	50 mph		Vehicl	Mix					
Near/Far La	ne Distance:	72 feet		Venici	hicleType		Dav	Evenina	Niaht	Dailv
Site Data						Autos:	69.3%	10.6%	20.1%	88.81%
Ba	rrier Height:	0.0 feet			Medium Ti	rucks:	73.8%	4.2%	22.1%	10.83%
Barrier Type (0-W	/all, 1-Berm):	0.0			Heavy Ti	rucks:	79.1%	4.7%	16.3%	0.36%
Centerline Di	st. to Barrier:	60.0 feet		Noise	Source El	evation	s (in f	eet)		
Centerline Dist.	to Observer:	60.0 feet			Auto	s: 0	000			
Barrier Distance	to Observer:	0.0 feet		Med	ium Truck	s: 2.	297			
Observer Height (Above Pad):	5.0 feet		He	avy Truck	s: 8.	004	Grade Adj	iustment	: 0.0
Fo	ad Elevation:	0.0 feet		Lane F	quivalent	Distan	ce (in	feet)		
Not	Bood Grade:	0.0 1001		20110 2	Auto	e //8	260			
	Left View:	0.0 %		Med	ium Truck	s' 48	076			
	Right View:	90.0 degrees		He	avy Truck	s: 48.	094			
FHWA Noise Mode	el Calculations	;		1						
VehicleType	REMEL	Traffic Flow	Distance	e Fini	te Road	Fresr	nel	Barrier Atte	en Ber	m Atten
Autos:	70.20	-0.49	0	.13	-1.20		-4.69	0.0	000	0.000
Medium Trucks:	81.00	-9.62	0	.15	-1.20		-4.88	0.0	000	0.000
Heavy Trucks:	85.38	-24.41	0	.15	-1.20		-5.34	0.0	000	0.000
Unmitigated Noise	e Levels (witho	ut Topo and b	arrier atte	enuation)					
VehicleType	Leq Peak Hou	r Leq Day	Leq	Evening	Leq	Night		Ldn	C	NEL
Autos:	68.	6 6	7.7	65	.6	63.6	5	70.8	3	71.1
Medium Trucks:	70.	3 6	9.7	63	.2	65.	7	72.7	7	72.9
Heavy Trucks:	59.	9 5	9.6	53	.3	53.9	9	61.5	5	61.7
Vehicle Noise:	72.	8 7	2.1	67	.7	67.9	9	75.1	1	75.3
Centerline Distance	ce to Noise Co	ntour (in feet)	7	0 -10 4	05	-10.4		0.404		-10.4
		,	/	U aBA	1 65	OBA 2014		DU aBA	55	1 200
			an: El:	13	-	281		606		1,306
		CN	EL:	13	D	291		626		1,349

	FHWA-RI	J-77-108 HIGH	WATN	UISEI	PREDIC	TION MC	DEL (9/12/20	J21)		
Scenar	io: OYC+P					Project N	lame: \	Vineya	rd Av. Wa	rehouse	
Road Nam	e: Alder Av.					Job Nu	mber:	15533			
Road Segme	nt: s/o Casmal	lia Av.									
SITE	SPECIFIC IN	IPUT DATA				N	DISE	IODE	L INPUT	s	
Highway Data				S	ite Con	ditions (l	Hard =	10, So	oft = 15)		
Average Daily	Traffic (Adt):	24,226 vehicle	es					Autos:	15		
Peak Hour	Percentage:	7.17%			Me	dium Truc	cks (2 A	Axles):	15		
Peak H	lour Volume:	1,737 vehicles	6		He	avy Truck	(3+ A	Axles):	15		
Ve	hicle Speed:	50 mph		v	ehicle I	Nix					
Near/Far La	ne Distance:	72 feet			Vehi	cleType		Day	Evening	Night	Daily
Site Data						AL	itos:	69.3%	10.6%	20.1%	88.10%
Ba	rrier Height	0.0 feet			Me	edium Tru	icks:	73.8%	4.2%	22.1%	10.68%
Barrier Type (0-W	/all, 1-Berm):	0.0			ŀ	leavy Tru	icks:	79.1%	4.7%	16.3%	1.22%
Centerline Di	st. to Barrier:	60.0 feet		N	loise So	urce Ele	vation	s (in fe	et)		
Centerline Dist.	to Observer:	60.0 feet				Autos	0.	000			
Barrier Distance	to Observer:	0.0 feet			Mediu	n Trucks	2	297			
Observer Height	(Above Pad):	5.0 feet			Heav	v Trucks:	8.	004	Grade Ad	justment	t: 0.0
P	ad Elevation:	0.0 feet		-							
Ro	ad Elevation:	0.0 feet		L	ane Equ	uvalent l	Distanc	ce (in f	'eet)		
	Road Grade:	0.0%				Autos:	48.	260			
	Left View:	-90.0 degree	es		Mediur	n Trucks:	48.	076			
	Right View:	90.0 degree	es		Heav	y Trucks:	48.	094			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresn	el	Barrier Att	en Bei	rm Atten
Autos:	70.20	-0.45		0.13	1	-1.20		-4.69	0.0	000	0.000
Medium Trucks:	81.00	-9.61		0.15	i	-1.20		-4.88	0.0	000	0.000
Heavy Trucks:	85.38	-19.04		0.15	,	-1.20		-5.34	0.0	000	0.000
Unmitigated Noise	e Levels (with	out Topo and	barrier	attenu	uation)						
VehicleType	Leq Peak Hou	ır Leq Day	L	Leq Ev	ening	Leq N	light		Ldn	С	NEL
Autos:	68	3.7	67.7		65.6		63.6	6	70.	В	71.2
Medium Trucks:	70	0.3	69.7		63.2		65.7	7	72.	7	72.9
Heavy Trucks:	65	i.3	64.9		58.6		59.3	3	66.	9	67.0
Vehicle Noise:	73	1.3	72.6		68.1		68.4	Ļ	75.	5	75.7
Centerline Distant	ce to Noise Co	ontour (in feet,									
				70 di	BA	65 di	BA	6	i0 dBA	55	i dBA
			Ldn:		140		302		650)	1,401
		CI	VEL:		145		312		671		1,447

	FHWA-RI	D-77-108 HIGH	WAY NC	DISE F	PREDIC		DDEL (S	9/12/2	:021)		
Scenai Road Nan Road Segme	rio: HY ne: Alder Av. nt: s/o Casma	lia Av.				Project N Job Nu	Vame: \ mber: 1	/ineya 15533	ard Av. War	ehouse	
SITE	SPECIFIC IN	IPUT DATA				N	DISE N	IODE	EL INPUT	5	
Highway Data				S	ite Con	ditions (I	Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt):	26,322 vehicle	es				,	Autos.	15		
Peak Hour	Percentage:	7.17%			Me	dium True	cks (2 A	(xles)	: 15		
Peak H	lour Volume:	1,887 vehicle	в		He	avy Truck	ks (3+ A	(xles)	: 15		
Ve	ehicle Speed:	50 mph		V	ehicle l	Mix					
Near/Far La	ne Distance:	72 feet		-	Veh	icleType		Day	Evening	Night	Daily
Site Data						A	utos:	69.3%	6 10.6%	20.1%	6 88.81%
Ba	rrier Heiaht:	0.0 feet			M	edium Tru	icks:	73.8%	6 4.2%	22.1%	6 10.83%
Barrier Type (0-V	Vall, 1-Berm):	0.0			1	Heavy Tru	icks:	79.1%	6 4.7%	16.3%	6 0.36%
Centerline D	ist. to Barrier:	60.0 feet		N	oise So	ource Ele	vations	s (in f	eet)		
Centerline Dist.	to Observer:	60.0 feet				Autos:	: 0.0	000			
Barrier Distance	to Observer:	0.0 feet			Mediu	m Trucks:	2.2	297			
Observer Height	(Above Pad):	5.0 feet			Heav	v Trucks	8.0	004	Grade Ad	justmen	t: 0.0
P	ad Elevation:	0.0 feet									
Ro	ad Elevation:	0.0 feet		La	ane Eq	uivalent l	Distanc	e (in	feet)		
	Road Grade:	0.0%				Autos:	: 48.2	260			
	Left View:	-90.0 degre	es		Mediu	m Trucks:	: 48.0	076			
	Right View:	90.0 degre	es		Heav	/y Trucks:	: 48.0)94			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distan	се	Finite	Road	Fresn	el	Barrier Att	en Be	rm Atten
Autos:	70.20	-0.05		0.13		-1.20		-4.69	0.0	000	0.000
Medium Trucks:	81.00	-9.19		0.15		-1.20		-4.88	0.0	000	0.000
Heavy Trucks:	85.38	-23.97		0.15		-1.20		-5.34	0.0	000	0.000
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	light		Ldn	C	NEL
Autos:	69	9.1	68.1		66.0		64.0)	71.2	2	71.6
Medium Trucks:	70).8	70.1		63.6		66.1		73.2	2	73.3
Heavy Trucks:	60).4	60.0		53.7		54.4		61.9	3	62.1
Vehicle Noise:	73	3.2	72.5		68.1		68.4		75.5	5	75.7
Centerline Distan	ce to Noise Co	ontour (in feet)								
				70 dE	BA	65 d	BA		60 dBA	55	5 dBA
			Ldn:		140		301		648	<i>.</i>	1,396
		C	NEL:		144		311		669	1	1,442

Scenario: HY+P						Proiec	t Name	Vineva	ard Av. Wa	rehouse	
Road Name: Alder Av						Job I	lumber.	15533			
Road Segment: s/o Casi	nalia /	Av.									
SITE SPECIFIC	INP	JT DATA				I	NOISE	MODE	L INPUT	S	
Highway Data					Site Cond	ditions	(Hard	= 10, S	oft = 15)		
Average Daily Traffic (Adt)	: 26	,730 vehicle	es					Autos.	15		
Peak Hour Percentage	: 7	7.17%			Med	dium Ti	rucks (2	Axles).	15		
Peak Hour Volume	: 1,	917 vehicles	s		Hea	avy Tru	icks (3+	Axles).	15		
Vehicle Speed	:	50 mph			Vehicle N	lix					
Near/Far Lane Distance	2	72 feet			Vehi	cleTyp	e	Day	Evening	Night	Daily
Site Data							Autos:	69.3%	6 10.6%	20.1%	88.17
Barrier Heigh	:	0.0 feet			Me	dium 1	rucks:	73.8%	6 4.2%	22.1%	10.69
Barrier Type (0-Wall, 1-Berm,		0.0			H	leavy 1	rucks:	79.1%	6 4.7%	16.3%	1.149
Centerline Dist. to Barrie		60.0 feet			Noise So	urce E	levatio	ns (in f	eet)		
Centerline Dist. to Observe		60.0 feet				Auto	os: (0.000	,		
Barrier Distance to Observe		0.0 feet			Mediun	n Truck	(s: 2	2.297			
Observer Height (Above Pad		5.0 feet			Heav	y Truck	(s: 8	3.004	Grade Ad	ljustmen	t: 0.0
Pad Elevation	C.	0.0 feet			1 5		4 Di-4-	//	6		
Road Elevation	ι,	0.0 feet			Lane Equ	ivalen	t Distai	ice (in	reet)		
Road Grade	с (J.U%			Modium	AUIC	05: 40	3.20U			
Len View Diaht View		90.0 degree	es		Heav		(S. 40	2 004			
rught view	-	90.0 degree	53		neav,	y 1100	ю. т о	.034			
FHWA Noise Model Calculati	ons										
VehicleType REMEL	T	raffic Flow	Di	stance	Finite	Road	Fres	snel	Barrier Att	en Be	rm Atten
Autos: 70.	20	-0.02		0.	13	-1.20		-4.69	0.	000	0.00
Medium Trucks: 81.	00	-9.18		0.	15	-1.20		-4.88	0.	000	0.00
Heavy Trucks: 85.	38	-18.91		0.	15	-1.20		-5.34	0.	000	0.00
Unmitigated Noise Levels (w	ithou	t Topo and	barri	ier atte	nuation)						
VehicleType Leq Peak I	lour	Leq Day	/	Leq E	vening	Leq	Night		Ldn	0	NEL
Autos:	69.1		68.2		66.0		64	.1	71.	2	71.
Medium Trucks:	70.8		70.1		63.6		66	.1	73.	2	73.
Heavy Trucks:	65.4		65.1		58.8		59	.4	67.	0	67.
venicie Noise:	13.1		73.0		08.5		60	.8	75.	9	76.
Centerline Distance to Noise	Cont	our (in feet,)		-/0.4				0.404	-	-10.4
			I da:	70	aBA 440	65	aBA		DU dBA	5	dBA
		~	Lan:		149		32	1	691		1,48
		CI	VEL:		154		- 33	1	/13	5	1,53

ionuay, october 2, 2023

	FHWA-RD	-77-108 HIGH	IWAY	NOISE	E PREDIO		IODEL	(9/12/2	.021)		
Scenari Road Nam Road Segmer	io: E le: Alder Av. nt: n/o Renaiss	ance Pkwy.				Projec Job N	t Name: lumber:	Viney 15533	ard Av. Wa	rehouse	
SITE	SPECIFIC IN	PUT DATA				I	NOISE	MOD	EL INPUT	s	
Highway Data					Site Cor	nditions	(Hard =	= 10, S	oft = 15)		
Average Daily	Traffic (Adt):	22,348 vehicle	es					Autos	15		
Peak Hour	Percentage:	7.17%			Me	edium Ti	rucks (2	Axles)	: 15		
Peak H	lour Volume:	1,602 vehicle	s		He	eavy Tru	icks (3+	Axles)	: 15		
Ve	hicle Speed:	50 mph		ŀ	Vehicle	Mix					
Near/Far La	ne Distance:	72 feet		ł	Veh	nicleType	9	Dav	Evenina	Niaht	Dailv
Site Data							Autos:	69.39	6 10.6%	20.1%	88.81%
Pa	rrior Hoight:	0.0 foot			M	ledium 1	rucks:	73.89	6 4.2%	22.1%	10.83%
Barrier Type (0-W	all. 1-Berm):	0.0				Heavy 1	rucks:	79.19	6 4.7%	16.3%	0.36%
Centerline Dis	st. to Barrier:	60.0 feet		-	Noine O				41		
Centerline Dist.	to Observer:	60.0 feet		ł	Noise S	ource E	levation	15 (11) 1	eet)		
Barrier Distance	to Observer:	0.0 feet				Auto	os: 0	.000			
Observer Height (Above Pad):	5.0 feet			Meaiu	Im Truck	(S: 2	.297	Grade Ad	iustmon	+ 0.0
Pa	ad Elevation:	0.0 feet			Hea	vy Truck	(S.' 8	.004	Graue Au	lusunen	1. 0.0
Roa	ad Elevation:	0.0 feet		[Lane Eq	luivalen	t Distar	ice (in	feet)		
I	Road Grade:	0.0%				Auto	os: 48	.260			
	Left View:	-90.0 degree	es		Mediu	ım Truck	(s: 48	.076			
	Right View:	90.0 degree	es		Hea	vy Truck	(s: 48	.094			
FHWA Noise Mode	el Calculation	5									
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	e Road	Fres	nel	Barrier Att	en Be	rm Atten
Autos:	70.20	-0.76		0.1	13	-1.20		-4.69	0.0	000	0.000
Medium Trucks:	81.00	-9.90		0.1	15	-1.20		-4.88	0.0	000	0.000
Heavy Trucks:	85.38	-24.68		0.1	15	-1.20		-5.34	0.0	000	0.000
Unmitigated Noise	e Levels (with	out Topo and	barrie	er atter	nuation)						
VehicleType	Leq Peak Hou	r Leq Day	/	Leq E	vening	Leq	Night		Ldn	C	NEL
Autos:	68	.4	67.4		65.3	3	63.	3	70.	5	70.8
Medium Trucks:	70	.1	69.4		62.9)	65.	.4	72.	5	72.6
Heavy Trucks:	Heavy Trucks: 59.6 59.3)	53.	7	61.3	2	61.4
Vehicle Noise:	72	.5	71.8		67.4	ļ	67.	7	74.	В	75.0
Centerline Distance	ce to Noise Co	ntour (in feet)								
				70	dBA	65	dBA		60 dBA	55	5 dBA
			Ldn:		125		270	D	581		1,251
		C	NEL:		129		27	8	600		1,293

	FHWA-RI	D-77-108 HIGH	WAY	NOISE			ODEL	(9/12/2	021)		
Scenar	io: E+P					Project	Name	Vineya	ard Av. Wa	rehouse	
Road Nam	e: Alder Av.					Job N	umber.	15533			
Road Segme	nt: n/o Renais	sance Pkwy.									
SITE	SPECIFIC IN	IPUT DATA				N	IOISE	MODE	L INPUT	S	
Highway Data					Site Con	ditions	(Hard :	= 10, So	oft = 15)		
Average Daily	Traffic (Adt):	22,364 vehicle	s					Autos:	15		
Peak Hour	Percentage:	7.17%			Me	dium Tri	ucks (2	Axles):	15		
Peak H	lour Volume:	1,604 vehicles	6		He	avy Tru	cks (3+	Axles):	15		
Ve	hicle Speed:	50 mph		ŀ	Vehicle I	Mix					
Near/Far La	ne Distance:	72 feet			Veh	icleTvpe		Dav	Evenina	Night	Dailv
Site Data							Autos:	69.3%	10.6%	20.1%	88.81%
Ba	rrior Hoight:	0.0 foot			M	edium Ti	rucks:	73.8%	4.2%	22.1%	10.83%
Barrier Type (0-W	/all, 1-Berm):	0.0			ŀ	leavy T	rucks:	79.1%	4.7%	16.3%	0.36%
Centerline Di	st. to Barrier:	60.0 feet		ŀ	Noise Sc	urce Fl	ovatio	ne (in fi	oof)		
Centerline Dist.	to Observer:	60.0 feet		ŀ	110/30 00	Auto	evanor	000			
Barrier Distance	to Observer:	0.0 feet			Modiu	m Truck	a. (207			
Observer Height ((Above Pad):	5.0 feet			Heav	n Truck	o. 4	2 004	Grade Ad	liustment	.00
Pa	ad Elevation:	0.0 feet			Tieav	y much	s. c	5.004	0/000/10	Juounoni	. 0.0
Roa	ad Elevation:	0.0 feet			Lane Eq	uivalent	Distar	nce (in	feet)		
	Road Grade:	0.0%				Auto	s: 48	3.260			
	Left View:	-90.0 degree	s		Mediui	m Truck	s: 48	3.076			
	Right View:	90.0 degree	s		Heav	y Truck	s: 48	3.094			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fres	snel	Barrier Att	ten Ber	m Atten
Autos:	70.20	-0.76		0.1	13	-1.20		-4.69	0.	000	0.00
Medium Trucks:	81.00	-9.90		0.1	15	-1.20		-4.88	0.	000	0.000
Heavy Trucks:	85.38	-24.68		0.1	15	-1.20		-5.34	0.	000	0.00
Unmitigated Noise	e Levels (with	out Topo and	barrie	er atter	nuation)						
VehicleType	Leq Peak Hou	ır Leq Day		Leq E	vening	Leq	Night		Ldn	C	NEL
Autos:	68	3.4	67.4		65.3		63	.3	70.	5	70.
Medium Trucks:	70).1	69.4		62.9		65	.4	72.	5	72.
Heavy Trucks:	59).6	59.3		53.0		53	.7	61.	2	61.4
Vehicle Noise:	72	2.5	71.8		67.4		67	.7	74.	8	75.
Centerline Distant	ce to Noise Co	ontour (in feet)									
				70	dBA	65	dBA	(60 dBA	55	dBA
			Ldn:		125		27	0	581	l	1,252
		CI	VEL:		129		27	9	600)	1.293

Monday, October 2, 2023

Monday, October 2, 2023

	FHWA-R	D-77-108 HIGH	IWAY I	NOISE F	PREDIC	TION MO	ODEL (S	9/12/2	:021)		
Scena Road Nan Road Segme	rio: OYC ne: Alder Av. ent: n/o Renais	sance Pkwy.				Project I Job Nu	Name: \ Imber: 1	/ineya 15533	ard Av. War	ehouse	
SITE	SPECIFIC IN	IPUT DATA				N	OISE N	IODE	EL INPUTS	5	
Highway Data				S	ite Con	ditions (Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt):	35,599 vehicl	es				,	Autos.	: 15		
Peak Hou	Percentage:	7.17%			Me	dium Tru	cks (2 A	(xles)	: 15		
Peak I	Hour Volume:	2,552 vehicle	s		He	avy Truc	ks (3+ A	(xles)	: 15		
Ve	ehicle Speed:	50 mph		V	ehicle	Mix					
Near/Far La	ane Distance:	72 feet		-	Veh	icleTvpe		Dav	Evenina	Niaht	Dailv
Site Data						A	utos:	69.3%	6 10.6%	20.1%	88.81%
Ba	rrier Height:	0.0 feet			М	edium Tru	ucks:	73.8%	6 4.2%	22.1%	10.83%
Barrier Type (0-V	Vall, 1-Berm):	0.0			1	Heavy Tri	ucks:	79.1%	6 4.7%	16.3%	0.36%
Centerline D	ist. to Barrier:	60.0 feet		N	oise So	ource Ele	vations	s (in f	eet)		
Centerline Dist.	to Observer:	60.0 feet				Autos	. 0.0	000			
Barrier Distance	to Observer:	0.0 feet			Mediu	m Trucks	2.3	97			
Observer Height	(Above Pad):	5.0 feet			Heav	/v Trucks	: 8.0	004	Grade Adi	ustment	: 0.0
F	ad Elevation:	0.0 feet									
Ro	ad Elevation:	0.0 feet		Li	ane Eq	uivalent	Distanc	e (in	feet)		
	Road Grade:	0.0%				Autos	: 48.	260			
	Left View:	-90.0 degre	es		Mediu	m Trucks	: 48.0	076			
	Right View:	90.0 degre	es		Heav	/y Trucks	: 48.0)94			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresn	el	Barrier Atte	en Bei	rm Atten
Autos:	70.20	1.26		0.13		-1.20		-4.69	0.0	00	0.000
Medium Trucks:	81.00	-7.88		0.15		-1.20		-4.88	0.0	00	0.000
Heavy Trucks:	85.38	-22.66		0.15		-1.20		-5.34	0.0	00	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrie	r attenu	ation)						
VehicleType	Leq Peak Ho	ur Leq Da	/	Leq Eve	ening	Leq N	Vight		Ldn	С	NEL
Autos:	70	0.4	69.4		67.3		65.3		72.5	;	72.9
Medium Trucks:	72	2.1	71.4		64.9		67.4		74.5		74.6
Heavy Trucks:	61	1.7	61.3		55.0		55.7		63.2	2	63.4
Vehicle Noise:	74	1.6	73.8		69.5		69.7	,	76.8		77.0
Centerline Distan	ce to Noise C	ontour (in fee)								
			L	70 dE	ЗA	65 d	IBA		60 dBA	55	dBA
			Ldn:		171		368		792		1,707
		С	NEL:		176		380		818		1,763

Secondria: OVC I B	_			Draiaa	Nome	linovo	rd Av Ma	reheuree			
Scenario: OYC+P Road Name: Aldor Av				Project	wame: v	/ineya	rd Av. vva	renouse			
Road Segment: n/o Renaissance Pkw	N.			300 N	umber.	5555					
SITE SPECIEIC INPUT DA	τ <u>ο</u>					IODE		6			
Highway Data			Site Conditions (Hard = 10, Soft = 15)								
Average Daily Traffic (Adt): 35.615 ve	ehicles					Autos:	15				
Peak Hour Percentage: 7.17%			Med	lium Tr	ucks (2 A	xles):	15				
Peak Hour Volume: 2,554 vel	nicles		Hea	avy Tru	cks (3+ A	xles):	15				
Vehicle Speed: 50 mp	h	-	Vehicle M	liv							
Near/Far Lane Distance: 72 fee	et	-	Vehic	leTvpe		Dav	Evenina	Niaht	Daily		
Site Data					Autos:	69.3%	10.6%	20.1%	88.819		
Barrier Height: 0.0 fe	et		Me	dium T	rucks:	73.8%	4.2%	22.1%	10.839		
Barrier Type (0-Wall. 1-Berm): 0.0			н	leavy T	rucks:	79.1%	4.7%	16.3%	0.36		
Centerline Dist. to Barrier: 60.0 fe	et	H	Noise So	urco E	evation	in f	oof)				
Centerline Dist. to Observer: 60.0 fe	et	f	10/30 000	Auto	evalion.	000					
Barrier Distance to Observer: 0.0 fe	et		Medium	n Truck	s: 2.2	97					
Observer Height (Above Pad): 5.0 fe	et		Heavy	/ Truck	s: 8.0	004	Grade Ad	justmen	t: 0.0		
Pad Elevation: 0.0 fe	et	-									
Road Elevation: 0.0 fe	et	Ľ	Lane Equ	ivalen	Distanc	e (in i	reet)				
Road Grade: 0.0%			Madison	Auto	S: 48.	260					
Left View: -90.0 de	egrees		Mealun	Truck	S: 48.0	010					
Right View. 90.0 de	egrees		(leav)	y ITUCK	3. 40.	54					
FHWA Noise Model Calculations											
VehicleType REMEL Traffic Fl	ow Dist	tance	Finite F	Road	Fresn	el	Barrier Att	en Be	rm Atten		
Autos: 70.20	1.26	0.1	3	-1.20		-4.69	0.0	000	0.00		
Medium Trucks: 81.00 -	7.88	0.1	5	-1.20		-4.88	0.0	000	0.00		
Heavy Trucks: 85.38 -2	2.66	0.1	5	-1.20		-5.34	0.0	000	0.00		
Unmitigated Noise Levels (without Topo	and barrie	r atten	uation)								
VehicleType Leq Peak Hour Leq	Day	Leq E	vening	Leq	Night		Ldn	0	NEL		
Autos: 70.4	69.5		67.3		65.3		72.	5	72.		
Medium Trucks: 72.1	71.4		64.9		67.4		74.	5	74.		
Heavy Trucks: 61.7	61.3		55.0		55.7		63.	2	63.		
Vehicle Noise: 74.6	73.8		69.5		69.7		76.	8	77.		
Centerline Distance to Noise Contour (in	feet)							-			
	L	70 (dBA	65	dBA	6	60 dBA	55	5 dBA		
	Ldn:		171		368		792		1,70		
	CNEL		176		380		818		1 763		

	FHWA-RI	D-77-108 HIGH	IWAY	NOISE	PREDIC		IODEL	(9/12/2	021)		
Scena Road Nar Road Segme	rio: HY ne: Alder Av. ent: n/o Renais	sance Pkwy.				Project Job N	Name lumber	: Vineya : 15533	rd Av. Wa	rehouse	÷
SITE	SPECIFIC IN	NPUT DATA				N	IOISE	MODE	L INPUT	S	
Highway Data					Site Con	ditions	(Hard	= 10, So	oft = 15)		
Average Daily	Traffic (Adt):	39,542 vehicl	es					Autos:	15		
Peak Hou	r Percentage:	7.17%			Me	dium Tr	ucks (2	? Axles):	15		
Peak I	lour Volume:	2,835 vehicle	s		He	avy Tru	cks (3+	Axles):	15		
Ve	ehicle Speed:	50 mph		ŀ	Vehicle	Mix					
Near/Far La	ane Distance:	72 feet			Veh	icleType	•	Day	Evening	Night	Daily
Site Data							Autos:	69.3%	10.6%	20.19	% 88.81%
Ba	rrier Heiaht:	0.0 feet			М	edium T	rucks:	73.8%	4.2%	22.19	% 10.83%
Barrier Type (0-V	Vall, 1-Berm):	0.0			1	Heavy T	rucks:	79.1%	4.7%	16.39	% 0.36%
Centerline D	ist. to Barrier:	60.0 feet		Ē	Noise So	ource El	levatio	ns (in fe	eet)		
Centerline Dist.	to Observer:	60.0 feet		Ī		Auto	s: (0.000	,		
Barrier Distance	to Observer:	0.0 feet			Mediu	m Truck	s:	2.297			
Observer Height	(Above Pad):	5.0 feet			Heav	/v Truck	s: (3.004	Grade Ad	ljustmei	nt: 0.0
F	ad Elevation:	0.0 feet		-							
Ro	ad Elevation:	0.0 feet		-	Lane Eq	uivalen	t Dista	nce (in i	teet)		
	Road Grade:	0.0%				Auto	S.' 4	8.260			
	Left View:	-90.0 degre	es		Meaiu	т тиск	s: 4	8.076			
	Right View:	90.0 degre	es		Heav	/у тиск	s: 4	8.094			
FHWA Noise Mod	lel Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fre	snel	Barrier At	ten Be	erm Atten
Autos:	70.20	1.72		0.1	3	-1.20		-4.69	0.	000	0.000
Medium Trucks:	81.00	-7.42		0.1	5	-1.20		-4.88	0.	000	0.000
Heavy Trucks:	85.38	-22.21		0.1	5	-1.20		-5.34	0.	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barri	er attei	nuation)						
VehicleType	Leq Peak Hou	ur Leq Daj	y	Leq E	vening	Leq	Night		Ldn	(CNEL
Autos:	70).8	69.9		67.8		65	i.8	73.	0	73.3
Medium Trucks:	72	2.5	71.9		65.4		67	.9	74.	9	75.1
Heavy Trucks:	62	2.1	61.8		55.5		56	i.1	63.	7	63.9
Vehicle Noise:	75	5.0	74.3		69.9		70	0.1	77.	3	77.5
Centerline Distan	ce to Noise C	ontour (in feet	t)								
			L	70	dBA	65	dBA	6	60 dBA	5	5 dBA
			Ldn:		183		39	4	850)	1,831
		С	NEL:		189		40	17	878	3	1,891

	FHWA-RD)-77-108 HIGHW	AY NOI	SE P	REDIC		ODEL (9/12/2	021)			
Scenar	io: HY+P					Project	Name:	Vineya	ard Av. V	Nareh	ouse	
Road Narr	e: Alder Av.					Job N	umber:	15533				
Road Segme	nt: n/o Renaiss	ance Pkwy.										
SITE	SPECIFIC IN	PUT DATA				N	IOISE I	NODE	EL INP	JTS		
Highway Data				Si	te Con	ditions	(Hard =	10, S	oft = 15))		
Average Daily	Traffic (Adt):	39,558 vehicles						Autos.	15			
Peak Hour	Percentage:	7.17%			Me	dium Tri	ucks (2 /	Axles).	15			
Peak H	lour Volume:	2,836 vehicles			He	avy Tru	cks (3+)	Axles).	15			
Ve	hicle Speed:	50 mph		Ve	hicle	Mix						
Near/Far La	ne Distance:	72 feet		-	Veh	icleTvpe		Dav	Evenir	na N	liaht	Dailv
Site Data						/	Autos:	69.3%	6 10.6	% 2	20.1%	88.81%
Pa	rrior Hoight:	0.0 foot			М	edium Ti	rucks:	73.8%	6 4.2	% 2	22.1%	10.83%
Barrier Type (0-W	/all_1-Rerm):	0.0			1	Heavy T	rucks:	79.1%	6 4.7	'% 1	6.3%	0.36%
Centerline Di	st. to Barrier:	60.0 feet						- (4	41			
Centerline Dist.	to Observer:	60.0 feet		NO	oise so	ource El	evation	s (in t	eet)			
Barrier Distance	to Observer:	0.0 feet				Auto	s: 0.	207				
Observer Height	(Above Pad):	5.0 feet			Meaiu.	m Truck	s: 2.	297	Crada	Adiua	trant	0.0
P	ad Elevation:	0.0 feet			Heav	y Truck	s: 8.	004	Grade	Aujus	unent.	0.0
Ro	ad Elevation:	0.0 feet		La	ne Eq	uivalent	Distan	ce (in	feet)	-		
	Road Grade:	0.0%				Auto	s: 48.	260		-		
	Left View:	-90.0 degrees			Mediu	m Truck	s: 48.	076				
	Right View:	90.0 degrees			Heav	y Truck	s: 48.	094				
FHWA Noise Mod	el Calculations	5										
VehicleType	REMEL	Traffic Flow	Distanc	e	Finite	Road	Fresr	nel	Barrier	Atten	Berr	m Atten
Autos:	70.20	1.72		0.13		-1.20		-4.69		0.000	,	0.000
Medium Trucks:	81.00	-7.42		0.15		-1.20		-4.88		0.000	1	0.00
Heavy Trucks:	85.38	-22.21		0.15		-1.20		-5.34		0.000)	0.000
Unmitigated Noise	e Levels (with	out Topo and ba	arrier at	tenua	ation)					-		
VehicleType	Leq Peak Hou	r Leq Day	Leo	q Eve	ning	Leq	Night		Ldn		CN	VEL
Autos:	70	.8 69	9.9		67.8		65.8	3	7	/3.0		73.3
Medium Trucks:	72	.5 71	1.9		65.4		67.9	9	1	74.9		75.1
Heavy Trucks:	62	.1 61	1.8		55.5		56.1	1	6	33.7		63.9
Vehicle Noise:	75	.0 74	1.3		69.9		70.1	1	1	7.3		77.5
Centerline Distant	ce to Noise Co	ntour (in feet)						1				
			3	70 dE	BA	65	dBA		60 dBA		55	dBA
		Lo	dn:		183		394		8	350		1,831
		CNE	<i>L:</i>		189		407		8	378		1,891

Monday, October 2, 2023

	FHWA-R	D-77-108 HIGH	WAY NO	DISE	PREDIC	TION M	ODEL (S	9/12/2	021)		
Scenar Road Nan Road Segme	io: E ne: Locust Av. nt: s/o Vineya	rd Av.				Project Job Nu	Name: \ umber: 1	/ineya 15533	ard Av. War	rehouse	
SITE	SPECIFIC I					N	OISE N	IODE		s	
Highway Data				S	ite Con	ditions (Hard =	10, Sc	oft = 15)	-	
Average Daily	Traffic (Adt):	12.169 vehicle	es				/	Autos:	15		
Peak Hour	Percentage:	7.17%			Me	dium Tru	icks (2 A	xles):	15		
Peak H	lour Volume:	873 vehicle	s		He	avy Truc	ks (3+ A	(xles):	15		
Ve	hicle Speed:	45 mph		V	ehicle I	Niv					
Near/Far La	ne Distance:	36 feet			Vehi	icleTvpe		Dav	Evenina	Niaht	Dailv
Site Data						A	utos:	69.3%	6 10.6%	20.1%	88.81%
Ba	rrier Heiaht:	0.0 feet			Me	edium Tr	ucks:	73.8%	6 4.2%	22.1%	10.83%
Barrier Type (0-V	/all, 1-Berm):	0.0			ŀ	leavy Tr	ucks:	79.1%	6 4.7%	16.3%	0.36%
Centerline D	st. to Barrier:	44.0 feet		N	loise So	ource Ele	vations	in f	eet)		
Centerline Dist.	to Observer:	44.0 feet		-		Autos	. 0.0	000			
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks	: 2.2	97			
Observer Height	(Above Pad):	5.0 feet			Heav	v Trucks	: 8.0	004	Grade Ad	justment	: 0.0
P	ad Elevation:	0.0 feet			-						
Ro	ad Elevation:	0.0 feet		L	ane Equ	uvalent	Distanc	e (In	feet)		
	Road Grade:	0.0%			Ma dian	Autos	. 40.4	460			
	Left View:	-90.0 degre	es		Wealur	TI TTUCKS	· 40.4	241			
	Right view.	90.0 degre	55		neav	y mucks	. 40.2	202			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distar	nce	Finite	Road	Fresn	el	Barrier Atte	en Ber	m Atten
Autos:	68.46	-2.95		1.28		-1.20		-4.61	0.0	000	0.000
Medium Trucks:	79.45	-12.08		1.31		-1.20		-4.87	0.0)00	0.000
Heavy Trucks:	84.25	-26.87		1.31		-1.20		-5.50	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier a	attenu	uation)						
VehicleType	Leq Peak Ho	ur Leq Day	/ L	eq Eve	ening	Leq I	Vight		Ldn	CI	VEL
Autos:	65	5.6	64.6		62.5		60.5		67.7	7	68.1
Medium Trucks:	67	7.5	66.8		60.3		62.8		69.9	3	70.0
Heavy Trucks:	51	7.5	57.1		50.8		51.5		59.1	1	59.2
venicie Noise:	05	9.9	69.Z		04.8		65.0		12.2	<u> </u>	72.4
Centerline Distan	ce to Noise C	ontour (in feet)								
			ட	70 dl	BA	65 c	iBA	(50 dBA	55	dBA
		0	Ldn:		61		132		285		613
		C	VEL.		63		136		294		633

	THUANE			NOIDE				" T L /L	<u>52</u> 1)		
Scenario	: E+P					Project	Name: \	/ineya	rd Av. Wa	rehouse	
Road Name	e: Locust Av.					Job Nu	imber: 1	5533			
Road Segmen	t: s/o Vineyaro	d Av.									
SITE S	PECIFIC IN	PUT DATA				N	OISE N	IODE	L INPUT	s	
Highway Data				s	Site Con	ditions ('Hard =	10, So	oft = 15)		
Average Daily 7	raffic (Adt):	12,185 vehicle	es				/	Autos:	15		
Peak Hour F	Percentage:	7.17%			Mee	dium Tru	cks (2 A	xles):	15		
Peak Ho	our Volume:	874 vehicle	s		Hei	avy Truc	ks (3+ A	xles):	15		
Veh	icle Speed:	45 mph		ν	ehicle N	<i>lix</i>					
Near/Far Lan	e Distance:	36 feet			Vehi	cleType		Day	Evening	Night	Daily
Site Data						A	utos:	69.3%	10.6%	20.1%	88.82
Bari	rier Height:	0.0 feet			Me	edium Tr	ucks:	73.8%	4.2%	22.1%	10.82
Barrier Type (0-Wa	all, 1-Berm):	0.0			ŀ	leavy Tr	ucks:	79.1%	4.7%	16.3%	0.36
Centerline Dis	t. to Barrier:	44.0 feet			loise So	urce Ele	vations	in f	pet)		
Centerline Dist. to	o Observer:	44.0 feet		-		Autos	. 00	000	,		
Barrier Distance t	o Observer:	0.0 feet			Mediur	n Trucks	2.2	97			
Observer Height (A	Above Pad):	5.0 feet			Heav	v Trucks	: 8.0	04	Grade Ad	justmen	t: 0.0
Pa	d Elevation:	0.0 feet		_							
Roa	d Elevation:	0.0 feet		L	ane Equ	iivalent	Distanc	e (in	feet)		
R	oad Grade:	0.0%				Autos	: 40.4	160			
	Left View:	-90.0 degree	es		Meaiur	n Trucks	40.2	241			
	Right view:	90.0 degre	es		neav	y mucks	. 40.4	202			
FHWA Noise Mode	Calculations	5									
VehicleType	REMEL	Traffic Flow	Di	stance	Finite	Road	Fresn	e/	Barrier Att	en Be	rm Atten
Autos:	68.46	-2.94		1.28	3	-1.20		4.61	0.0	000	0.00
Medium Trucks:	79.45	-12.08		1.31		-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	84.25	-26.87		1.31		-1.20		-5.50	0.0	000	0.00
Unmitigated Noise	Levels (with	out Topo and	barri	ier attenu	uation)						
VehicleType	Leq Peak Hou	r Leq Day	1	Leq Ev	rening	Leq I	Vight		Ldn	С	NEL
Autos:	65	.6	64.7		62.5		60.5		67.	7	68
Medium Trucks:	67	.5	66.8		60.3		62.8		69.	9	70
Heavy Trucks:	57	.5	57.1		50.8		51.5		59.	1	59
Vehicle Noise:	69	.9	69.2		64.8		65.0		72.3	2	72
Centerline Distance	e to Noise Co	ntour (in feet)								
				70 d	BA	65 0	IBA	(60 dBA	55	dBA
			Ldn:		61		132		285	;	61
		-									

	FHWA-RD	-77-108 HIGH	WAY	NOISE	PREDIC	TION M	ODEL	(9/12/2	021)		
Scenai Road Nan Road Segme	rio: OYC ne: Locust Av. nt: s/o Vineyard	d Av.				Project Job N	Name: umber:	Vineya 15533	rd Av. Wa	rehouse	
SITE	SPECIFIC IN	PUT DATA				N	OISE	MODE		s	
Highway Data					Site Con	ditions	(Hard :	= 10, So	oft = 15)		
Average Daily	Traffic (Adt):	12,661 vehicle	s					Autos:	15		
Peak Hour	Percentage:	7.17%			Me	dium Tru	ıcks (2	Axles):	15		
Peak H	lour Volume:	908 vehicles	;		He	avy Truc	cks (3+	Axles):	15		
Ve	ehicle Speed:	45 mph		-	Vehicle I	lix					
Near/Far La	ne Distance:	36 feet		F	Vehi	cleType		Day	Evening	Night	Daily
Site Data						A	Autos:	69.3%	10.6%	20.1%	88.81%
Ba	rrier Height	0.0 feet			Me	edium Tr	ucks:	73.8%	4.2%	22.1%	10.83%
Barrier Type (0-V	Vall, 1-Berm):	0.0			ŀ	leavy Tr	ucks:	79.1%	4.7%	16.3%	0.36%
Centerline D	ist. to Barrier:	44.0 feet		-	Noise So	urce El	evatio	ns (in fi	pet)		
Centerline Dist.	to Observer:	44.0 feet		-		Auto	s' (000			
Barrier Distance	to Observer:	0.0 feet			Mediur	n Truck	s. 2	297			
Observer Height	(Above Pad):	5.0 feet			Heav	v Truck	s	3 004	Grade Ad	iustment	: 0.0
P	ad Elevation:	0.0 feet		L		<i>y maon</i>	<i>.</i>				
Ro	ad Elevation:	0.0 feet		-	Lane Equ	ivalent	Distar	nce (in	feet)		
	Road Grade:	0.0%				Autos	s: 40	0.460			
	Left View:	-90.0 degree	s		Mediur	n Trucks	s: 40).241			
	Right View:	90.0 degree	!S		Heav	y Trucks	s: 40	0.262			
FHWA Noise Mod	el Calculations	5		-							
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fres	inel	Barrier Att	en Ber	m Atten
Autos:	68.46	-2.77		1.2	28	-1.20		-4.61	0.0	000	0.000
Medium Trucks:	79.45	-11.91		1.3	31	-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	84.25	-26.69		1.3	81	-1.20		-5.50	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and I	barrie	er atter	nuation)						
VehicleType	Leq Peak Hou	r Leq Day		Leq E	vening	Leq	Night		Ldn	C	NEL
Autos:	65	.8 (64.8		62.7		60	.7	67.9	9	68.2
Medium Trucks:	67	.7	67.0		60.5		63	.0	70.0)	70.2
Heavy Trucks:	57.	.7	57.3		51.0		51	.7	59.2	2	59.4
Vehicle Noise:	70	.1 (69.3		64.9		65	.2	72.3	3	72.5
Centerline Distan	ce to Noise Co	ntour (in feet)									
				70	dBA	65 (dBA	(60 dBA	55	dBA
			Ldn:		63		13	6	292		629
					00						

	FHWA-RD	0-77-108 HIGHV	VAY NO	ISE PREDIC	TION M	ODEL (S	9/12/20	021)		
Scenar Road Nam Road Segme	io: OYC+P ne: Locust Av. nt: s/o Vineyan	d Av.			Project Job Ni	Name: \ umber: 1	/ineya 15533	rd Av. War	ehouse	1
SITE	SPECIFIC IN	PUT DATA			N	OISE N	IODE		5	
Highway Data				Site Con	ditions ((Hard =	10, So	ft = 15)	-	
Average Dailv	Traffic (Adt):	12.677 vehicles	5				Autos:	15		
Peak Hour	Percentage:	7.17%		Me	dium Tru	icks (2 A	xles):	15		
Peak H	lour Volume:	909 vehicles		He	avy Truc	ks (3+ A	xles):	15		
Ve	hicle Speed:	45 mph		Mahiala			-			
Near/Far La	ne Distance:	36 feet		Venicie	VIIX		Dev	Evening	Night	Deily
Site Data				ven	icie i ype	utoo:	Day	Evening	Night	Dally
Site Data					A adium Tr	utos:	09.3% 72.0%	10.6%	20.1%	0 88.82%
Ba	rrier Height:	0.0 feet		IVI		ucks.	70.40/	4.270	46.20	0 10.0270
Barrier Type (0-W	/all, 1-Berm):	0.0			Heavy II	UCKS.	79.170	4.770	10.37	0 0.30%
Centerline Di	st. to Barrier:	44.0 teet		Noise Se	ource Ele	evations	s (in fe	eet)		
Centerline Dist.	to Observer:	44.0 teet			Autos	s: 0.0	000			
Barrier Distance	to Observer:	0.0 feet		Mediu	m Trucks	s: 2.2	297			
Observer Height (Above Pad):	5.0 feet		Hear	y Trucks	s: 8.0	004	Grade Adj	ustmen	ot: 0.0
Pa	ad Elevation:	0.0 feet		Long Eg	uivelent	Distanc	o (in f	[a a f]		
Roa	ad Elevation:	0.0 feet		Lane Eq	avalent	Distanc		eel)		
	Road Grade:	0.0%		Martin	Autos	5. 40.4	100			
	Left View:	-90.0 degrees	6	Mediu	m Trucks	5: 40.2	241			
	Right View:	90.0 degrees	6	Heat	y Trucks	5: 40.2	262			
FHWA Noise Mode	el Calculation:	5								-
VehicleType	REMEL	Traffic Flow	Distanc	ce Finite	Road	Fresn	el i	Barrier Atte	en Be	rm Atten
Autos:	68.46	-2.77		1.28	-1.20		-4.61	0.0	00	0.000
Medium Trucks:	79.45	-11.91		1.31	-1.20		-4.87	0.0	00	0.000
Heavy Trucks:	84.25	-26.69		1.31	-1.20		-5.50	0.0	00	0.000
Unmitigated Noise	e Levels (with	out Topo and b	arrier at	tenuation)						
VehicleType	Leq Peak Hou	r Leq Day	Le	q Evening	Leq I	Night		Ldn	C	ONEL
Autos:	65	.8 6	4.8	62.7		60.7		67.9	i	68.2
Medium Trucks:	67	.7 6	7.0	60.5		63.0		70.0	1	70.2
Heavy Trucks:	57	.7 5	7.3	51.0		51.7		59.2	2	59.4
Vehicle Noise:	70	.1 6	9.3	64.9		65.2		72.3	j -	72.5
Centerline Distant	ce to Noise Co	ontour (in feet)								
				70 dBA	65 0	dBA	6	i0 dBA	55	5 dBA
		L	dn:	63	-	136	•	292		630
		CN	EL:	65		140		302		650

Monday, October 2, 2023

	FHWA-RI	D-77-108 HIGH	IWAY I	NOISE F	PREDIC	TION M	ODEL (S	9/12/2	021)		
Scenar Road Nan Road Segme	rio: HY ne: Locust Av. nt: s/o Vineyar	rd Av.				Project Job Ni	Name: \ umber: `	Vineya 15533	ard Av. War	ehouse	
SITE	SPECIFIC IN	IPUT DATA				N	OISE N	IODE	L INPUTS	5	
Highway Data				S	ite Con	ditions ('Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt):	14,808 vehicl	es				,	Autos:	15		
Peak Hour	Percentage:	7.17%			Me	dium Tru	icks (2 A	Axles).	15		
Peak H	lour Volume:	1,062 vehicle	s		He	avy Truc	ks (3+ A	Axles).	15		
Ve	hicle Speed:	45 mph		V	ehicle l	Mix					
Near/Far La	ne Distance:	36 feet			Veh	icleTvpe		Dav	Evenina	Niaht	Dailv
Site Data						A	utos:	69.3%	6 10.6%	20.1%	88.81%
Ba	rrier Height:	0.0 feet			М	edium Tr	ucks:	73.8%	6 4.2%	22.1%	10.83%
Barrier Type (0-W	Vall, 1-Berm):	0.0			1	Heavy Tr	ucks:	79.1%	6 4.7%	16.3%	0.36%
Centerline Di	ist. to Barrier:	44.0 feet		N	oise Sc	ource Ele	vations	s (in f	eet)		
Centerline Dist.	to Observer:	44.0 feet				Autos	: 0.0	000			
Barrier Distance	to Observer:	0.0 feet			Mediu	m Trucks	: 2.2	297			
Observer Height	(Above Pad):	5.0 feet			Heav	v Trucks	: 8.0	004	Grade Adj	ustment	: 0.0
P	ad Elevation:	0.0 feet									
Ro	ad Elevation:	0.0 feet		Li	ane Eq	uivalent	Distanc	ce (in	feet)		
	Road Grade:	0.0%				Autos	: 40.4	460			
	Left View:	-90.0 degre	es		Mediu	m Trucks	: 40.2	241			
	Right View:	90.0 degre	es		Heav	y Trucks	: 40.2	262			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresn	el	Barrier Atte	en Bei	rm Atten
Autos:	68.46	-2.09		1.28		-1.20		-4.61	0.0	00	0.000
Medium Trucks:	79.45	-11.23		1.31		-1.20		-4.87	0.0	00	0.000
Heavy Trucks:	84.25	-26.01		1.31		-1.20		-5.50	0.0	00	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrie	r attenu	ation)						
VehicleType	Leq Peak Hou	ur Leq Da	/	Leq Eve	ening	Leq I	Vight		Ldn	С	NEL
Autos:	66	6.4	65.5		63.4		61.4	Ļ	68.6		68.9
Medium Trucks:	68	3.3	67.7		61.2		63.7	,	70.7		70.9
Heavy Trucks:	58	3.3	58.0		51.7		52.4	ļ.	59.9		60.1
Vehicle Noise:	70).8	70.0		65.6		65.9)	73.0		73.2
Centerline Distan	ce to Noise Co	ontour (in feet)								
			L	70 dE	BA	65 c	1BA		60 dBA	55	dBA
			Ldn:		70		151		324		699
		С	NEL:		72		155		335		721

Scenario: HY+P	Project Name: Vineyard Av. Warehouse	9
Road Name: Locust Av.	Job Number: 15533	
Road Segment: s/o Vineyard Av.		
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS	
Highway Data	Site Conditions (Hard = 10, Soft = 15)	
Average Daily Traffic (Adt): 14,824 vehicles	Autos: 15	
Peak Hour Percentage: 7.17%	Medium Trucks (2 Axles): 15	
Peak Hour Volume: 1,063 vehicles	Heavy Trucks (3+ Axles): 15	
Vehicle Speed: 45 mph	Vehicle Mix	
Near/Far Lane Distance: 36 feet	VehicleType Day Evening Night	Daily
Site Data	Autos: 69.3% 10.6% 20.19	% 88.82%
Barrier Height: 0.0 feet	Medium Trucks: 73.8% 4.2% 22.19	% 10.82%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 79.1% 4.7% 16.3%	6 0.369
Centerline Dist. to Barrier: 44.0 feet	Noise Source Elevations (in feet)	
Centerline Dist. to Observer: 44.0 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 Adjustmen	nt: 0.0
Pad Elevation: 0.0 feet		
Road Elevation: 0.0 feet	Lane Equivalent Distance (in feet)	
Road Grade: 0.0%	Autos: 40.460	
Left View: -90.0 degrees	Heavy Trucks: 40.241	
Right view. 90.0 degrees	11eavy 11ucks. 40.202	
FHWA Noise Model Calculations		
VehicleType REMEL Traffic Flow Dista	ce Finite Road Fresnel Barrier Atten Be	erm Atten
Autos: 68.46 -2.09	1.28 -1.20 -4.61 0.000	0.00
Medium Trucks: 79.45 -11.23	1.31 -1.20 -4.87 0.000	0.00
Heavy Trucks: 84.25 -26.01	1.31 -1.20 -5.50 0.000	0.00
Unmitigated Noise Levels (without Topo and barrier	tenuation)	
VehicleType Leq Peak Hour Leq Day L	q Evening Leq Night Ldn	CNEL
Autos: 66.4 65.5	63.4 61.4 68.6	68.
Medium Trucks: 68.3 67.7	61.2 63.7 70.7	70.
Heavy Trucks: 58.3 58.0	51.7 52.4 59.9	60.
Vehicle Noise: 70.8 70.0	65.6 65.9 73.0	73.
Centerline Distance to Noise Contour (in feet)		
· · · ·	70 dBA 65 dBA 60 dBA 5	5 dBA
Ldn:	70 151 324	699
CNEL	72 155 335	722

FHWA-F	D-77-108 HIGHWAY N	NOISE PREDICTION MODE	L (9/12/20	021)	
Scenario: E Road Name: Locust Av Road Segment: n/o Casm	alia Av.	Project Nam Job Numbe	e: Vineya er: 15533	rd Av. Wa	reho
SITE SPECIFIC I	NPUT DATA	NOIS	E MODE	L INPUT	S
Highway Data		Site Conditions (Hard	1 = 10, So	oft = 15)	
Average Daily Traffic (Adt):	13,936 vehicles		Autos:	15	
Peak Hour Percentage:	7.17%	Medium Trucks	(2 Axles):	15	
Peak Hour Volume:	999 vehicles	Heavy Trucks (3	+ Axles):	15	
Vehicle Speed:	45 mph	Vohiclo Mix			
Near/Far Lane Distance:	36 feet	VehicleType	Day	Evening	Nig
Site Data		Autos	69.3%	10.6%	20
Barrier Height:	0.0 feet	Medium Trucks	73.8%	4.2%	22
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks	: 79.1%	4.7%	16
Centerline Dist. to Barrier:	44.0 feet	Noise Source Elevati	ons (in fa	oof)	
Centerline Dist. to Observer:	44.0 feet	Autoo:	0.000		
Barrier Distance to Observer:	0.0 feet	Autos.	0.000		
Observer Height (Above Pad):	5.0 feet	Medium Trucks:	2.297	Grade Ac	livete
Pad Elevation:	0.0 feet	neavy Trucks:	8.004	Grade AL	justi
Road Elevation:	0.0 feet	Lane Equivalent Dist	ance (in i	feet)	

inginiaj bata						antionio (i	, and	10, 00			
Average Daily	Traffic (Adt):	13,936 vehicl	es					Autos:	15		
Peak Hour	Percentage:	7.17%			Me	dium True	cks (2 A	Axles):	15		
Peak H	lour Volume:	999 vehicle	s		He	avy Truck	ks (3+ A	Axles):	15		
Ve	hicle Speed:	45 mph		V	ahicle I	Aix					
Near/Far La	ne Distance:	36 feet		-	Vehi	cleTvpe		Dav	Evenina	Niaht	Dailv
Site Data						A	utos:	69.3%	10.6%	20.1%	88.81%
Ba	rrier Height:	0.0 feet			Me	edium Tru	icks:	73.8%	4.2%	22.1%	10.83%
Barrier Type (0-V	Vall. 1-Berm):	0.0			F	leavy Tru	icks:	79.1%	4.7%	16.3%	0.36%
Centerline Di	ist. to Barrier:	44.0 feet						- (i - F-	- 41		
Centerline Dist.	to Observer:	44.0 feet		^	ioise So	urce Ele	vations	s (in te	eet)		
Barrier Distance	to Observer:	0.0 feet				Autos:	: 0.0	000			
Observer Height	(Above Pad):	5.0 feet			Meaiur	n Trucks:	: Z.,	297	Crada Ad	unternant	
P	ad Elevation:	0.0 feet			Heav	y Trucks.	8.0	J04	Grade Auj	usuneni	. 0.0
Ro	ad Elevation:	0.0 feet		L	ane Equ	ivalent l	Distand	e (in f	feet)		
	Road Grade:	0.0%				Autos:	40.4	460			
	Left View:	-90.0 degre	es		Mediur	n Trucks:	40.	241			
	Right View:	90.0 degre	es		Heav	y Trucks	40.	262			
FHWA Noise Mod	el Calculation:	s									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresn	el	Barrier Atte	en Ber	m Atten
Autos:	68.46	-2.36		1.28	3	-1.20		-4.61	0.0	00	0.000
Medium Trucks:	79.45	-11.49		1.31		-1.20		-4.87	0.0	00	0.000
Heavy Trucks:	84.25	-26.28		1.31		-1.20		-5.50	0.0	00	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier	attenı	uation)						
VehicleType	Leq Peak Hou	r Leq Da	/ L	.eq Ev	ening	Leq N	light		Ldn	C	NEL
Autos:	66	.2	65.2		63.1		61.1		68.3	1	68.7
Medium Trucks:	68	.1	67.4		60.9		63.4	ŀ	70.5		70.6
Heavy Trucks:	58	.1	57.7		51.4		52.1		59.6	;	59.8
Vehicle Noise:	70	.5	69.7		65.3		65.6	6	72.7	,	73.0
Centerline Distan	ce to Noise Co	ontour (in feet)	70 4	0.4	<u> </u>			0.404		-10.4
			l da:	70 a	BA	65 a	5A 145	6	00 0BA	55	0BA 671
		~			60		145		311		602
					09		149		377		09.0

Scenario:	E+P				Projec	t Name:	Vineya	rd Av. Wa	rehouse	
Road Name: Road Segment:	Locust Av. n/o Casmal	ia Av.			Job I	lumber:	15533			
SITE SP	ECIFIC IN	PUT DATA				NOISE	MODE		s	
Highway Data				Site C	onditions	(Hard :	= 10, So	oft = 15)		
Average Daily Tra	affic (Adt):	14,456 vehicle	es				Autos:	15		
Peak Hour Pe	rcentage:	7.17%			Aedium T	rucks (2	Axles):	15		
Peak Hou	r Volume:	1,036 vehicles	5		Heavy Tru	icks (3+	Axles):	15		
Vehic	le Speed:	45 mph		Vohic	o Mix					
Near/Far Lane	Distance:	36 feet		Venici	e IVIIA ehicleTvp	e	Dav	Evenina	Niaht	Dailv
Site Data						Autos:	69.3%	10.6%	20.1%	87.719
Parrie	vr Hojaht:	0.0 foot			Medium 1	rucks:	73.8%	4.2%	22.1%	10.49%
Barrier Type (0-Wall	1-Rerm)	0.0 1001			Heavy 1	rucks:	79.1%	4.7%	16.3%	1.80%
Centerline Dist	to Barrier:	44.0 feet								
Centerline Dist. to	Observer:	44.0 feet		Noise	Source E	levatioi	ns (in fe	eet)		
Barrier Distance to	Observer:	0.0 feet			Auto	os: (.000			
Observer Height (Ab	ove Pad):	5.0 feet		Med	ium Truci	(S: 2	.297	Grade Ad	iustmont	
Pad	Elevation:	0.0 feet		He	avy Truci	(S. 8	.004	Grade Au	usuneni	. 0.0
Road	Elevation:	0.0 feet		Lane I	quivalen	t Distar	ice (in i	feet)		
Roi	ad Grade:	0.0%			Auto	os: 40	.460			
	Left View:	-90.0 degree	es	Med	lium Truck	(s: 40	.241			
R	ight View:	90.0 degree	2S	He	avy Truck	(s: 40	.262			
FHWA Noise Model (Calculations	6								
VehicleType	REMEL	Traffic Flow	Distar	nce Fin	te Road	Fres	nel	Barrier Att	en Ber	m Atten
Autos:	68.46	-2.25		1.28	-1.20		-4.61	0.0	000	0.00
Medium Trucks:	79.45	-11.47		1.31	-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	84.25	-19.14		1.31	-1.20		-5.50	0.0	000	0.00
Inmitiaated Noise I		out Tono and	barrier a	attenuation	1)					
ommigated Noise E	evels (with	бит торо апи			<i>,</i>				1 .	
VehicleType Le	evels (withe eq Peak Hou	r Leq Day	L	eq Evening	Leq	Night		Ldn	CI	NEL
VehicleType Le Autos:	evels (with og Peak Hou 66	r Leq Day .3	65.3	eq Evening 63	.2	Night 61	2	Ldn 68.4	C/ 1	NEL 68.8
VehicleType Le Autos: Medium Trucks:	evels (with og Peak Hou 66 68	r Leq Day .3 .1	65.3 67.4	eq Evening 63 60	.2 .9	Night 61 63	24	Ldn 68.4 70.5	C/ 4 5	NEL 68.8 70.6
VehicleType Le Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	evels (with eq Peak Hou 66 68 65 71	r Leq Day 3.1 2.5	65.3 67.4 64.9	eq Evening 63 60 58	.2 .9 .6	Night 61 63 59	.2 .4 .2	Ldn 68.4 70.5 66.8	C/ 4 5 3	NEL 68.8 70.6 67.0
Vehicle Type Le Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	evels (without of Peak Hou 66 68 65 71	r Leq Day 3 .1 .2 .5	65.3 67.4 64.9 70.8	eq Evening 63 60 58 60	Leq .2 .9 .6	Night 61 63 59 66	2 4 2 4	Ldn 68.4 70.5 66.8 73.6	C/ 4 5 3 6	NEL 68.4 70.4 67.4 73.4
Vehicle Type Le Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Centerline Distance I	evels (witho eq Peak Hou 66 68 65 71 to Noise Co	r Leq Day 3 1 2 5 ntour (in feet,	65.3 67.4 64.9 70.8	eq Evening 63 60 58 60 70 dBA	Leq .2 .9 .6 .1	Night 61 63 59 66	2 4 2 4	Ldn 68.4 70.5 66.8 73.6	CI 4 5 3 6	NEL 68.4 70.6 67.0 73.4
Vehicle Type Le Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Centerline Distance	evels (witho eq Peak Hou 66 68 65 71 to Noise Co	r Leq Day 3 1 2 5 ntour (in feet,	Ldn:	eq Evening 63 60 58 60 70 dBA	Leq .2 .9 .6 .1 65	Night 61 63 59 66 dBA	2 4 2 4	Ldn 68.4 70.5 66.8 73.6 50 dBA 355	C/ 4 5 3 5 5 5 5 5	NEL 68.8 70.6 67.0 73.8 dBA 764

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Monday, October 2, 2023

	FHWA-RI	D-77-108 HIGH	WAY NO	DISE F	PREDIC	TION MO	ODEL (S	9/12/2	021)		
Scenar	rio: OYC					Project I	Vame: \	/ineya	ard Av. War	rehouse	
Road Nan Road Segme	ne: Locust Av. nt: n/o Casma	lia Av.				JOD NU	infiber:	10533			
SITE	SPECIFIC IN	IPUT DATA				N	OISE N	IODE	L INPUT	S	
Highway Data				S	ite Con	ditions (Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt):	14,499 vehicl	es				,	Autos:	15		
Peak Hour	Percentage:	7.17%			Me	dium Tru	cks (2 A	xles).	15		
Peak H	lour Volume:	1,040 vehicle	s		He	avy Truci	ks (3+ A	(xles)	15		
Ve	hicle Speed:	45 mph		V	ehicle I	Nix					
Near/Far La	ne Distance:	36 feet			Vehi	icleType		Day	Evening	Night	Daily
Site Data						A	utos:	69.3%	6 10.6%	20.1%	88.81%
Ba	rrier Height:	0.0 feet			Me	edium Tru	ucks:	73.8%	6 4.2%	22.1%	10.83%
Barrier Type (0-V	Vall, 1-Berm):	0.0			ŀ	leavy Tru	ucks:	79.1%	6 4.7%	16.3%	0.36%
Centerline D	ist. to Barrier:	44.0 feet		N	oise So	urce Ele	vations	s (in f	eet)		
Centerline Dist.	to Observer:	44.0 feet				Autos	: 0.0	000			
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks	: 2.2	297			
Observer Height	(Above Pad):	5.0 feet			Heav	y Trucks	: 8.0	004	Grade Adj	iustment	: 0.0
P	ad Elevation:	0.0 feet				inclose	Distanc	o (in	faati		
Ro	ad Elevation:	0.0 feet		Le	ane Equ	Autoo		e (III	ieelj		
	Road Grade:	0.0%			Madiu	Autos. m Trucko	. 40.4	+00			
	Lett View: Right View:	-90.0 degre	25 26		Heav	n Trucks. v Trucks	· 40.4	241			
	ragin view.	50.0 degre			mour	<i>y maono</i>	. 10.	-02			
FHWA Noise Mod	el Calculation	S	Dista		Circles.	Deed	F	-1	Dennie a Att		
Venicie I ype	REMEL	I raffic Flow	Distar	1 20	Finite	Road	⊦resn	ei 4 6 1	Barrier Atte	en Ber	m Atten
Autos. Medium Trucks:	70.40	-2.10		1.20		-1.20		-4.01	0.0	000	0.000
Heavy Trucks	84.25	-26.11		1.31		-1.20		-5.50	0.0	000	0.000
Unmitigated Naia	a Lavala (with	out Tono and	horrior		otion						
VehicleType	Lea Peak Ho	ur Leg Day		ea Eve	enina	l ea N	liaht		l dn	C	NEI
Autos:	2007 / 0017 / 00	5.4	65.4	04 210	63.3	2007	61.3		68.5	5	68.8
Medium Trucks:	68	3.2	67.6		61.1		63.6		70.6	3	70.8
Heavy Trucks:	58	3.3	57.9		51.6		52.3		59.8	3	60.0
Vehicle Noise:	70).7	69.9		65.5		65.8		72.9	9	73.1
Centerline Distan	ce to Noise C	ontour (in feet)								
				70 dE	BA	65 d	BA		60 dBA	55	dBA
			Ldn:		69		148		320		689
		C	NEL:		71		153		330		711

	FHWA-RD	-77-108 HIGH	IWAY	NOISE	PREDIC	TION M	ODEL (9/12/2	021)		
Scenario: Road Name:	OYC+P Locust Av.					Project Job N	Name: \ umber: `	/ineya 15533	rd Av. Wa	rehouse	
Road Segment.	n/o Casmali	a Av.									
SITE SI	Scenario: OYC+P Road Name: Locust AV. Road Segment: n/o Casmalia Av. SITE SPECIFIC INPUT DATA way Data Iverage Daily Traffic (AdI): 15,019 vehicles Peak Hour Percentage: 7.17% Peak Hour Percentage: 7.17% Peak Hour Volume: 1,077 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 36 feet Tata Barrier Height: 0.0 feet Centerline Dist. to Diserver: 44.0 feet Interline Dist. to Diserver: 44.0 feet Interline Dist. to Diserver: 0.0 feet erver Height (Above Pad): 5.0 feet Road Elevation: 0.0 feet Road Elevation: 0.0 feet					N	OISE N	IODE	L INPUT	S	
Highway Data				s	Site Con	ditions	Hard =	10, So	oft = 15)		
Average Daily Tr	raffic (Adt):	15,019 vehicle	es					Autos:	15		
Peak Hour P	ercentage:	7.17%			Me	dium Tru	icks (2 A	(xles)	15		
Peak Ho	ur Volume:	1,077 vehicle	s		He	avy Truc	:ks (3+ A	(xles):	15		
Vehi	cle Speed:	45 mph		V	/ehicle I	Nix					
Near/Far Lane	e Distance:	36 feet			Vehi	icleType		Day	Evening	Night	Daily
Site Data						A	utos:	69.3%	10.6%	20.1%	87.769
Barri	ier Height:	0.0 feet			Me	edium Tr	ucks:	73.8%	4.2%	22.1%	10.50
Barrier Type (0-Wal	II, 1-Berm):	0.0			ŀ	leavy Tr	ucks:	79.1%	4.7%	16.3%	1.749
Centerline Dist.	to Barrier:	44.0 feet			loise Sc	urce El	evation	: (in fi	pet)		
Centerline Dist. to	Observer:	44.0 feet		Ê		Autos	. 0.0	000	,		
Barrier Distance to	Observer:	0.0 feet			Mediur	n Trucks	. 2.3	297			
Observer Height (A	bove Pad):	5.0 feet			Heav	v Trucks	. 8.0	004	Grade Ad	justment	: 0.0
Pad	Elevation:	0.0 feet		-							
Road	Elevation:	0.0 feet		1	ane Equ	livalent	Distanc	e (in i	teet)		
Ro	oad Grade:	0.0%			Madiu	Autos Trucki	10.4 10.4	460 544			
,	Left View:	-90.0 degree	es		Heav	II Trucks	. 40.	241			
1	Nghi view.	90.0 degre	55		neav	y mache	. 40.	202			
FHWA Noise Model	Calculations	;									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresn	el	Barrier Att	en Ber	m Atten
Autos:	68.46	-2.08		1.28	3	-1.20		-4.61	0.0	000	0.00
Medium Trucks:	79.45	-11.30		1.31		-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	84.25	-19.10		1.31		-1.20		-5.50	0.0	000	0.00
Unmitigated Noise I	Levels (witho	out Topo and	barri	er attenu	uation)						
VehicleType L	eq Peak Hou	r Leq Day	/	Leq Ev	ening	Leq	Vight		Ldn	C	NEL
Autos:	66.	5	65.5		63.4		61.4		68.	6	68
Medium Trucks:	68.	3	67.6		61.1		63.6		70.	7	70.
Heavy Trucks:	65.	3	64.9		58.6		59.3		66.	8	67.
Vehicle Noise:	71.	6	70.9		66.2		66.5	•	73.	/	73.
Centerline Distance	to Noise Co	ntour (in feet)							1	
			L	70 d	BA	65 (1BA	6	60 dBA	55	dBA
		~	Ldn:		78		168		363		781
		C	VEL:		81		174		374		806

	FHWA-RD-	77-108 HIGHWA	Y NOISE			ODEL (9/12/2	021)	_	_
Scenar Road Nan Road Segme	rio: HY ne: Locust Av. nt: n/o Casmalia	ı Av.			Project Job N	Name: umber:	Vineya 15533	ard Av. War	rehouse	
SITE	SPECIFIC INF	PUT DATA			N	OISE	MODE		s	
Highway Data				Site Con	ditions	(Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt): 2	7,224 vehicles					Autos	15		
Peak Hour	Percentage:	7.17%		Me	dium Tru	icks (2	Axles).	15		
Peak H	lour Volume:	,952 vehicles		He	avy Truc	cks (3+	Axles).	15		
Ve	ehicle Speed:	45 mph	F	Vehicle I	lix					
Near/Far La	ne Distance:	36 feet	ŀ	Vehi	cleType		Day	Evening	Night	Daily
Site Data					4	Autos:	69.3%	6 10.6%	20.1%	88.81%
Ba	rrier Height	0.0 feet		Me	edium Tr	ucks:	73.8%	6 4.2%	22.1%	10.83%
Barrier Type (0-V	Vall, 1-Berm):	0.0		ŀ	leavy Tr	ucks:	79.1%	6 4.7%	16.3%	0.36%
Centerline D	ist. to Barrier:	44.0 feet	ŀ	Noise So	urce El	evation	s (in f	eet)		
Centerline Dist.	to Observer:	44.0 feet	ľ		Autos	s: 0	000			
Barrier Distance	to Observer:	0.0 feet		Mediur	n Truck	5 2	297			
Observer Height	(Above Pad):	5.0 feet		Heav	v Truck	s: 8.	004	Grade Adj	iustment	: 0.0
P	ad Elevation:	0.0 feet	-							
Ro	ad Elevation:	0.0 feet	-	Lane Equ	livalent	Distan	ce (in	feet)		
	Road Grade:	0.0%			Autos	s: 40	460			
	Left View:	-90.0 degrees		Mediur	n Trucks	5: 40	.241			
	Right view:	90.0 degrees		neav	y muck:	5. 40	.202			
FHWA Noise Mod	el Calculations									
VehicleType	REMEL	Traffic Flow D	listance	Finite	Road	Fres	nel	Barrier Atte	en Bei	rm Atten
Autos:	68.46	0.55	1.2	28	-1.20		-4.61	0.0	000	0.000
Medium Trucks:	79.45	-8.58	1.3	31	-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	84.25	-23.37	1.3	31	-1.20		-5.50	0.0	000	0.000
Unmitigated Nois	e Levels (witho	ut Topo and bar	rier attei	nuation)			1		-	
VehicleType	Leq Peak Hour	Leq Day	Leq E	vening	Leq	Night		Ldn	C	NEL
Autos:	69.1	68.1		66.0		64.	0	71.2	2	71.6
Medium Trucks:	/1.0	0.3	5	63.8		66.	3	73.4	+	73.5
Heavy Trucks:	01.0	00.0	,	54.3		55.	5	62.0	7	02.7
venicie Noise.	13.4	12.1		68.3		68.	5	/5./	(75.5
Centerline Distan	ce to Noise Cor	ntour (in feet)	70	-10.4		10.4	1	CO -/D 4		-10.4
		I da	/0	105 105	05 (JBA		00 0BA 407	55	1 0/19
		Lan.		100		220		487		1,048
		CNEL		100		230	,	502		1,003

	r nin An	D-11-100 HIGH	WAT NO		FREDIC			12/2	521)		
Scena	ario: HY+P					Project	Name: \	/ineya	rd Av. Wa	rehouse	
Road Na	me: Locust Av.					Job N	umber: 1	5533			
Road Segm	ent: n/o Casma	alia Av.									
SITE	SPECIFIC II	NPUT DATA				N	OISE N	IODE		s	
Highway Data				S	ite Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Dail	y Traffic (Adt):	27,744 vehicle	es					Autos:	15		
Peak Hou	Ir Percentage:	7.17%			Mee	dium Tru	icks (2 A	xles):	15		
Peak	Hour Volume:	1,989 vehicle	s		Hea	avy Truc	:ks (3+ A	xles):	15		
V	ehicle Speed:	45 mph		v	ehicle I	Nix					
Near/Far L	ane Distance:	36 feet		-	Vehi	cleTvpe		Dav	Evenina	Night	Dailv
Site Data							utos:	69.3%	10.6%	20.1%	88.24%
В	arrier Height	0.0 feet			Me	edium Tr	ucks:	73.8%	4.2%	22.1%	10.65%
Barrier Type (0-	Wall. 1-Berm):	0.0			F	leavy Tr	ucks:	79.1%	4.7%	16.3%	1.11%
Centerline L	Dist. to Barrier:	44.0 feet			laisa Sa	urco El	ovation	(in fr	ootl		
Centerline Dis	t. to Observer:	44.0 feet		N	10/36 30	Autor		00	eel)		-
Barrier Distanc	e to Observer:	0.0 feet			Madium	Autos Trucki	5. U.U	00			
Observer Heigh	(Above Pad):	5.0 feet			Hear	II TIUCKS	5. <u>2.</u> 2		Grade Ad	iustment	+ 0.0
	Pad Elevation:	0.0 feet			neav	y mucks	s. o.u	/04	Orade Au	usunem	. 0.0
R	oad Elevation:	0.0 feet		L	ane Equ	iivalent	Distanc	e (in i	feet)		
	Road Grade:	0.0%				Autos	s: 40.4	160			
	Left View:	-90.0 degree	es		Mediur	n Trucks	s: 40.2	241			
	Right View:	90.0 degree	es		Heav	y Trucks	s: 40.2	262			
FHWA Noise Mo	del Calculation	ıs									
VehicleType	REMEL	Traffic Flow	Distan	ice	Finite	Road	Fresn	e/	Barrier Att	en Ber	m Atten
Autos	68.46	0.61		1.28		-1.20		4.61	0.0	000	0.000
Medium Trucks	c 79.45	5 -8.58		1.31		-1.20		4.87	0.0	000	0.000
Heavy Trucks	84.25	5 -18.40		1.31		-1.20		-5.50	0.0	000	0.000
Unmitigated Noi	se Levels (with	nout Topo and	barrier a	ttenu	uation)						
VehicleType	Leq Peak Ho	ur Leq Day	/ Le	eq Ev	ening	Leq	Night		Ldn	C	NEL
Autos	: 6	9.1	68.2		66.1		64.1		71.3	3	71.6
Medium Trucks	. 7	1.0	70.3		63.8		66.3		73.4	4	73.5
Heavy Trucks	. 6	6.0	65.6		59.3		60.0		67.5	i	67.7
Vehicle Noise	. 7	3.9	73.2		68.6		68.9		76.1	I	76.3
Centerline Dista	nce to Noise C	ontour (in feet)								
				70 d	BA	65 (dBA	6	60 dBA	55	dBA
			Ldn:		112		242		522		1,124
		0	NEL ·		116		250		530		1 160

Monday, October 2, 2023

	FHWA-RI	D-77-108 HIGH	IWAY N	NOISE	PREDIC	TION MO	DDEL (9)	/12/20	21)		
Scenar Road Nan	rio: E ne: Locust Av.	U				Project I Job Ni	Vame: V Imber: 1	ineyar 5533	d Av. War	ehouse	
Road Seyme	ni. s/o Casma	lia AV.									
SITE	SPECIFIC IN	IPUT DATA				N	OISE M	ODEL	INPUTS	3	
Highway Data				S	ite Con	ditions (Hard = 1	0, Sof	ť = 15)		
Average Daily	Traffic (Adt):	8,071 vehicl	es				Α	utos:	15		
Peak Hour	Percentage:	7.17%			Me	dium Tru	cks (2 A)	(les):	15		
Peak H	lour Volume:	579 vehicle	s		He	avy Truc	ks (3+ A)	(les):	15		
Ve	hicle Speed:	45 mph		v	ehicle I	<i>lix</i>					
Near/Far La	ne Distance:	36 feet		-	Vehi	cleType	E	Day	Evening	Night	Daily
Site Data						A	utos: 6	9.3%	10.6%	20.1%	88.81%
Ba	rrier Height:	0.0 feet			Me	edium Tru	ucks: 7	3.8%	4.2%	22.1%	10.83%
Barrier Type (0-W	/all, 1-Berm):	0.0			ŀ	leavy Tru	ucks: 7	9.1%	4.7%	16.3%	0.36%
Centerline Di	st. to Barrier:	44.0 feet		٨	loise So	urce Ele	vations	(in fee	et)		
Centerline Dist.	to Observer:	44.0 feet				Autos	: 0.00	00			
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks	2.2	97			
Observer Height	(Above Pad):	5.0 feet			Heav	y Trucks	: 8.00	04 (Grade Adj	ustment	0.0
P	ad Elevation:	0.0 feet		-	_						
Ro	ad Elevation:	0.0 feet		L	ane Equ	livalent	Distance	e (in fe	eet)		
	Road Grade:	0.0%				Autos	: 40.4	60			
	Left View:	-90.0 degre	es		Meaiur	n Trucks	: 40.2	41			
	Right View:	90.0 degre	es		Heav	y Trucks	: 40.2	02			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresne	el E	Barrier Atte	en Ber	m Atten
Autos:	68.46	-4.73		1.28	3	-1.20		4.61	0.0	00	0.000
Medium Trucks:	79.45	-13.87		1.31		-1.20		4.87	0.0	00	0.000
Heavy Trucks:	84.25	-28.65		1.31		-1.20	-	5.50	0.0	00	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier	r attenı	uation)						
VehicleType	Leq Peak Hou	ur Leq Daj	/	Leq Ev	ening	Leq N	light		Ldn	CI	IEL
Autos:	63	3.8	62.9		60.7		58.7		65.9)	66.3
Medium Trucks:	65	5.7	65.0		58.6		61.0		68.1		68.2
Heavy Trucks:	55	5.7	55.3		49.1		49.7		57.3		57.4
Vehicle Noise:	68	3.1	67.4		63.0		63.3		70.4		70.6
Centerline Distan	ce to Noise Co	ontour (in feet)								
				70 d	BA	65 d	BA	60) dBA	55	dBA
			Ldn:		47		100		216		466
		С	NEL:		48		104		223		481

Scenario	D: E+P					Project	Name:	Vineya	rd Av. Wa	rehouse	
Road Name	e: Locust AV.	- A				JOD N	umper:	15533			
Road Segmen	t: s/o Casmai	ia AV.									
SITE S	PECIFIC IN	PUT DATA				N	IOISE I	NODE	L INPUT	S	
Highway Data				1	Site Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily 1	raffic (Adt):	8,087 vehicle	es					Autos:	15		
Peak Hour I	Percentage:	7.17%			Me	dium Tr	ucks (2)	Axles):	15		
Peak Ho	our Volume:	580 vehicles	s		Hei	avy Tru	cks (3+)	Axles):	15		
Veh	icle Speed:	45 mph		1	Vehicle N	<i>lix</i>					
Near/Far Lar	e Distance:	36 feet		F	Vehi	cleTvpe		Dav	Evenina	Niaht	Dailv
Site Data							Autos:	69.3%	10.6%	20.1%	88.839
Ran	rier Heiaht:	0.0 feet			Me	edium T	rucks:	73.8%	4.2%	22.1%	10.819
Barrier Type (0-Wa	all 1-Berm)	0.0			F	leavy T	rucks:	79.1%	4.7%	16.3%	0.369
Centerline Dis	t. to Barrier:	44.0 feet		-				- (41		
Centerline Dist. t	o Observer:	44.0 feet		1	voise So	urce El	evation	s (in fe	eet)		
Barrier Distance t	o Observer:	0.0 feet				Auto	s: 0.	000			
Observer Height ()	bove Pad):	5.0 feet			Meaiur	n Truck	s: 2.	297	0		
Pa	d Elevation:	0.0 feet			Heav	у ттиск	S: 8.	004	Grade Ad	usimeni	. 0.0
Roa	d Elevation:	0.0 feet		1	Lane Equ	iivalen	t Distan	ce (in i	feet)		
F	oad Grade:	0.0%				Auto	s: 40.	460			
	Left View:	-90.0 degree	es		Mediur	n Truck	s: 40.	241			
	Right View:	90.0 degree	es		Heav	y Truck	s: 40.	262			
FHWA Noise Mode	Calculation:	s									
VehicleType	REMEL	Traffic Flow	Di	stance	Finite	Road	Fresr	nel	Barrier Att	en Ber	m Atten
Autos:	68.46	-4.72		1.2	8	-1.20		-4.61	0.0	000	0.00
Medium Trucks:	79.45	-13.87		1.3	1	-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	84.25	-28.65		1.3	1	-1.20		-5.50	0.0	000	0.00
Unmitigated Noise	Levels (with	out Topo and	barri	er atten	uation)						
VehicleType	Leq Peak Hou	r Leq Day	/	Leg Ev	vening	Leq	Night		Ldn	C	NEL
Autos:	63	.8	62.9		60.7		58.	3	65.	9	66.
Medium Trucks:	65	.7	65.0		58.6		61.0)	68.	1	68.
Heavy Trucks:	55	.7	55.3		49.1		49.	7	57.3	3	57.
Vehicle Noise:	68	.1	67.4		63.0		63.3	3	70.4	1	70.
Centerline Distanc	e to Noise Co	ontour (in feet,)								
			L	70 0	JBA	65	аВА	6	U dBA	55	aBA
		_	Ldn:		47		100		216		466
		~ ~			40		104		224		493

	FHWA-RD	77-108 HIGHW	AY NO	ISE F	REDIC		ODEL	(9/12/2	.021)	_	
Scena Road Nar Road Segme	rio: OYC ne: Locust Av. nt: s/o Casmalia	a Av.				Project Job N	Name umber	Vineya 15533	ard Av. War	rehouse	
SITE	SPECIFIC INI	PUT DATA				N	OISE	MODE	L INPUT	s	
Highway Data				Si	ite Con	ditions	(Hard	= 10, S	oft = 15)		
Average Daily	Traffic (Adt):	8,930 vehicles						Autos	15		
Peak Hour	Percentage:	7.17%			Mee	dium Tru	icks (2	Axles)	: 15		
Peak I	lour Volume:	640 vehicles			Hea	avy Truc	cks (3+	Axles)	: 15		
Ve	ehicle Speed:	45 mph		Ve	ehicle N	Aix					
Near/Far La	ane Distance:	36 feet		F	Vehi	cleType		Day	Evening	Night	Daily
Site Data						4	Autos:	69.3%	6 10.6%	20.1%	88.81%
Ba	rrier Height	0.0 feet			Me	edium Tr	ucks:	73.8%	6 4.2%	22.1%	10.83%
Barrier Type (0-V	Vall, 1-Berm):	0.0			H	leavy Ti	ucks:	79.1%	6 4.7%	16.3%	0.36%
Centerline D	ist. to Barrier:	44.0 feet		N	oise So	urce El	evatio	ns (in f	eet)		
Centerline Dist.	to Observer:	44.0 feet				Auto	5' (000			
Barrier Distance	to Observer:	0.0 feet			Mediur	n Truck		2.297			
Observer Height	(Above Pad):	5.0 feet			Heav	v Truck	s: 1	3.004	Grade Ad	iustment	: 0.0
P	ad Elevation:	0.0 feet		-							
Ro	ad Elevation:	0.0 feet		Lá	ane Equ	livalent	Dista	nce (in	feet)		
	Road Grade:	0.0%				Autos	5.' 41).460			
	Left View:	-90.0 degrees			Mediur	n Trucks	5.' 41	0.241			
	Right View:	90.0 degrees			Heav	y Trucks	s: 41).262			
FHWA Noise Mod	el Calculations										
VehicleType	REMEL	Traffic Flow	Distan	ce	Finite	Road	Fre	snel	Barrier Att	en Ber	m Atten
Autos:	68.46	-4.29		1.28		-1.20		-4.61	0.0	000	0.000
Medium Trucks:	79.45	-13.43		1.31		-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	84.25	-28.21		1.31		-1.20		-5.50	0.0	000	0.000
Unmitigated Nois	e Levels (witho	ut Topo and ba	rrier a	ttenu	ation)						
VehicleType	Leq Peak Hour	Leq Day	Le	q Eve	ening	Leq	Night		Ldn	C	NEL
Autos:	64.3	2 63	.3		61.2		59	.2	66.4	1	66.7
Medium Trucks:	66.	1 65	.5		59.0		61	.5	68.5	5	68.7
Heavy Trucks:	56.	1 55	.8		49.5		50	.2	57.1	<u></u>	57.9
Vehicle Noise:	68.0	5 67	.8		63.4		63	.7	70.8	3	71.0
Centerline Distan	ce to Noise Col	ntour (in feet)	_								
				70 dE	BA	65 (dBA		60 dBA	55	dBA
		10	n'		50		10	7	231		499
		Lu					10		201		

	FHWA-RL	-//-108 HIGH	NAY NO	ISE	PREDIC		ODEL (9/12/2	.021)		
Scenar	io: OYC+P					Project	Name: \	/ineya	ard Av. Wa	rehouse	;
Road Nam	ne: Locust Av.					Job N	umber: *	15533			
Road Segme	nt: s/o Casmali	a Av.									
SITE	SPECIFIC IN	PUT DATA				N	OISE N	IODE		s	
Highway Data				S	ite Con	ditions	Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt):	8,946 vehicle	s				,	Autos	: 15		
Peak Hour	Percentage:	7.17%			Me	dium Tru	icks (2 A	(xles	: 15		
Peak H	lour Volume:	641 vehicles			He	avy Truc	ks (3+ A	(xles	: 15		
Ve	hicle Speed:	45 mph		V	ehicle I	Niv					
Near/Far La	ne Distance:	36 feet		-	Vehi	cleTvpe		Dav	Evenina	Niaht	Daily
Site Data				-			utos:	69.3%	6 10.6%	20.19	6 88.83%
Ba	rrier Height:	0.0 feet			Me	edium Tr	ucks:	73.89	6 4.2%	22.19	6 10.81%
Barrier Type (0-W	/all_1-Rerm):	0.0			F	leavy Tr	ucks:	79.19	6 4.7%	16.39	6 0.36%
Centerline Di	st. to Barrier:	44.0 feet							41		
Centerline Dist.	to Observer:	44.0 feet		N	uise su	aute El	evalions	s (III I	eel)		
Barrier Distance	to Observer:	0.0 feet				Autos	:: U.(000			
Observer Height ((Above Pad):	5.0 feet			Mediur	n Trucks	: Z.4	297	Crada Ad		* 0.0
Pa	ad Elevation:	0.0 feet			Heav	y Trucks	8.0	JU4	Grade Auj	usuner	11. 0.0
Roa	ad Elevation:	0.0 feet		L	ane Equ	uivalent	Distand	e (in:	feet)		
	Road Grade:	0.0%				Autos	: 40.4	460			
	Left View:	-90.0 degree	s		Mediur	n Trucks	: 40.	241			
	Right View:	90.0 degree	s		Heav	y Trucks	: 40.2	262			
FHWA Noise Mode	el Calculations	\$									
VehicleType	REMEL	Traffic Flow	Distan	ce	Finite	Road	Fresn	el	Barrier Att	en Be	erm Atten
Autos:	68.46	-4.28		1.28		-1.20		-4.61	0.0	000	0.000
Medium Trucks:	79.45	-13.43		1.31		-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	84.25	-28.21		1.31		-1.20		-5.50	0.0)00	0.000
Unmitigated Noise	e Levels (with	out Topo and I	oarrier a	ttenu	ation)					-	
VehicleType	Leq Peak Hou	r Leq Day	Le	q Ev	ening	Leq	Vight		Ldn	(CNEL
Autos:	64	.3 6	3.3		61.2		59.2	2	66.4	1	66.7
Medium Trucks:	66	.1 6	5.5		59.0		61.5	;	68.5	5	68.7
Heavy Trucks:	56	.1 5	5.8		49.5		50.2	2	57.1	7	57.9
Vehicle Noise:	68	.6 6	67.8		63.4		63.7	,	70.8	3	71.0
Centerline Distant	ce to Noise Co	ntour (in feet)									
				70 di	BA	65 (1BA		60 dBA	5	5 dBA
		l	.dn:		50		107		232		499
		CA	IEL:		52		111		239		515

Monday, October 2, 2023

	FHWA-RI	D-77-108 HIGH	WAY N	OISE F	PREDIC	TION MO	ODEL (S	9/12/2	021)		
Scenar	rio: HY					Project I	Vame: \	/ineya	ard Av. War	ehouse	
Road Nan Road Segme	ne: Locust Av. ent: s/o Casma	lia Av.				Job Nu	imber: 1	15533			
SITE	SPECIFIC IN	IPUT DATA				N	OISE N	IODE	L INPUT	s	
Highway Data				S	ite Con	ditions (Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt):	19,871 vehicle	es				,	Autos:	15		
Peak Hour	Percentage:	7.17%			Me	dium Tru	cks (2 A	(xles)	15		
Peak H	Hour Volume:	1,425 vehicle	s		He	avy Truci	ks (3+ A	(xles)	15		
Ve	ehicle Speed:	45 mph		V	ehicle I	Nix					
Near/Far La	ane Distance:	36 feet			Vehi	icleType		Day	Evening	Night	Daily
Site Data						A	utos:	69.3%	6 10.6%	20.1%	88.81%
Ba	rrier Height:	0.0 feet			Me	edium Tru	ucks:	73.8%	6 4.2%	22.1%	10.83%
Barrier Type (0-V	Vall, 1-Berm):	0.0			ŀ	leavy Tru	ucks:	79.1%	6 4.7%	16.3%	0.36%
Centerline D	ist. to Barrier:	44.0 feet		N	oise So	urce Ele	vations	s (in f	eet)		
Centerline Dist.	to Observer:	44.0 feet				Autos	: 0.0	000			
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks	: 2.2	297			
Observer Height	(Above Pad):	5.0 feet			Heav	y Trucks	: 8.0	004	Grade Adj	justment	: 0.0
P	ad Elevation:	0.0 feet					D:		f 4)		
Ro	ad Elevation:	0.0 feet		La	ane Equ	livalent	Distanc	e (In	reet)		
	Road Grade:	0.0%				Autos.	: 40.4	100			
	Left View:	-90.0 degre	es		Mealur	TI TTUCKS	: 40.4	241			
	Right View:	90.0 degre	es		Heav	y Trucks	: 40.4	202			
FHWA Noise Mod	el Calculation	s								-	
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresn	el	Barrier Atte	en Ber	m Atten
Autos:	68.46	-0.82		1.28		-1.20		-4.61	0.0)00	0.000
Medium Trucks:	79.45	-9.95		1.31		-1.20		-4.87	0.0)00	0.000
Heavy Trucks:	84.25	-24.74		1.31		-1.20		-5.50	0.0)00	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier a	attenu	ation)						
VehicleType	Leq Peak Hou	ur Leq Day	′ L	eq Eve	ening	Leq N	light		Ldn	CI	NEL
Autos:	67	7.7	66.8		64.7		62.7		69.9)	70.2
Medium Trucks:	69	9.6	68.9		62.5		65.0)	72.0)	72.1
Heavy Trucks:	59	9.6	59.3		53.0		53.6	i	61.2	2	61.4
Vehicle Noise:	72	2.0	71.3		66.9		67.2		74.3	}	74.5
Centerline Distan	ce to Noise C	ontour (in feet)								
			ட	70 dł	BA	65 d	BA		bU dBA	55	aBA
			Ldn:		85		183		395		850
		C	VEL:		88		189		407		878

	FHWA-RL	0-77-108 HIGP	IVVAI	NUISE	PREDIC		IUDEL	(9/12/2	021)		
Scenari	o: HY+P					Project	Name:	Vineya	ard Av. Wa	rehouse	
Road Nam	e: Locust Av.					Job N	lumber:	15533			
Road Segmer	nt: s/o Casmal	ia Av.									
SITE	SPECIFIC IN	PUT DATA				1	IOISE	MODE	L INPUT	s	
Highway Data				:	Site Con	ditions	(Hard =	= 10, So	oft = 15)		
Average Daily	Traffic (Adt):	19,887 vehicl	es					Autos:	15		
Peak Hour	Percentage:	7.17%			Me	dium Tr	ucks (2	Axles):	15		
Peak H	our Volume:	1,426 vehicle	s		He	avy Tru	cks (3+	Axles):	15		
Vel	hicle Speed:	45 mph		1	Vehicle I	Mix					
Near/Far Lar	ne Distance:	36 feet			Veh	icleType		Day	Evening	Night	Daily
Site Data							Autos:	69.3%	10.6%	20.1%	88.82
Bar	rier Heiaht:	0.0 feet			Me	edium T	rucks:	73.8%	4.2%	22.1%	10.839
Barrier Type (0-W	all, 1-Berm):	0.0			ŀ	leavy T	rucks:	79.1%	4.7%	16.3%	0.369
Centerline Dis	t. to Barrier:	44.0 feet		-	Noiso Sr	urco E	lovation	ne (in fi	oof)		
Centerline Dist.	to Observer:	44.0 feet		ŕ	10/30 00	Auto	evaluon e' 0	000			
Barrier Distance	to Observer:	0.0 feet			Mediu	m Truck	s. 0 s [.] 2	297			
Observer Height (J	Above Pad):	5.0 feet			Heav	v Truck	s: 8	.004	Grade Ad	iustment	: 0.0
Pa	d Elevation:	0.0 feet			mour	<i>y m</i> aon	0. 0			,	
Roa	d Elevation:	0.0 feet		1	Lane Eq	uivalen	t Distan	ce (in	feet)		
F	Road Grade:	0.0%				Auto	s: 40	.460			
	Left View:	-90.0 degre	es		Mediu	m Truck	s: 40	.241			
	Right View:	90.0 degre	es		Heav	y Truck	s: 40	.262			
FHWA Noise Mode	Calculation:	S									
VehicleType	REMEL	Traffic Flow	Di	istance	Finite	Road	Fres	nel	Barrier Att	en Bei	m Atten
Autos:	68.46	-0.81		1.2	8	-1.20		-4.61	0.	000	0.00
Medium Trucks:	79.45	-9.95		1.3	1	-1.20		-4.87	0.	000	0.00
Heavy Trucks:	84.25	-24.74		1.3	1	-1.20		-5.50	0.	000	0.00
Unmitigated Noise	Levels (with	out Topo and	barri	ier atten	uation)						
VehicleType	Leq Peak Hou	r Leq Day	/	Leq E	vening	Leq	Night		Ldn	С	NEL
Autos:	67	.7	66.8		64.7		62.	7	69.	9	70
Medium Trucks:	69	.6	68.9		62.5		65.	0	72.	D	72
Heavy Trucks:	59	.6	59.3		53.0		53.	6	61.	2	61.
Vehicle Noise:	72	.0	71.3		66.9		67.	2	74.	3	74.
Centerline Distanc	e to Noise Co	ontour (in feet)								
				70 0	dBA	65	dBA	1	60 dBA	55	dBA
			Ldn:		85		183	3	395	5	850
		C	NFI		0.0		100	`	407	,	070

	FHWA-RD	0-77-108 HIGH	WAY	NOISE	PREDIC	TION M	ODEL (9/12/2	021)		
Scena Road Nar Road Segme	rio: E ne: Casmalia A nt: e/o Alder A	V. V.				Project Job N	Name: umber:	Vineya 15533	rd Av. Wa	rehouse	
SITE	SPECIFIC IN	IPUT DATA				N	OISE	MODE		s	
Highway Data					Site Con	ditions	(Hard =	10, So	oft = 15)		
Average Daily	Traffic (Adt):	13,594 vehicle	es					Autos:	15		
Peak Hou	Percentage:	7.17%			Me	dium Tri	icks (2	Axles):	15		
Peak I	lour Volume:	975 vehicles	5		He	avy Truc	cks (3+ .	Axles):	15		
Ve	ehicle Speed:	55 mph		-	Vehicle I	lix					
Near/Far La	ne Distance:	36 feet		F	Vehi	cleType		Day	Evening	Night	Daily
Site Data						1	Autos:	69.3%	10.6%	20.1%	88.81%
Ba	rrier Height	0.0 feet			Me	edium Ti	ucks:	73.8%	4.2%	22.1%	10.83%
Barrier Type (0-V	Vall, 1-Berm):	0.0			ŀ	leavy Ti	ucks:	79.1%	4.7%	16.3%	0.36%
Centerline D	ist. to Barrier:	44.0 feet		t.	Noise So	urce Fl	evation	s (in fi	pet)		
Centerline Dist.	to Observer:	44.0 feet		F		Auto	er 0	000			
Barrier Distance	to Observer:	0.0 feet			Modiu	n Truck	s. 0.	207			
Observer Height	(Above Pad):	5.0 feet			Heav	v Truck	5. <u>2</u> .	004	Grade Ad	iustment	.00
P	ad Elevation:	0.0 feet			neav	y much	5. 0.	004	0/000/10	aounon	. 0.0
Ro	ad Elevation:	0.0 feet		1	Lane Equ	ivalent	Distan	ce (in	feet)		
	Road Grade:	0.0%				Auto	s: 40	.460			
	Left View:	-90.0 degree	es		Mediur	n Truck	s: 40	241			
	Right View:	90.0 degree	es		Heav	y Truck	s: 40	262			
FHWA Noise Mod	el Calculation:	s									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fres	nel	Barrier Att	en Ber	m Atten
Autos:	71.78	-3.34		1.2	8	-1.20		-4.61	0.0	000	0.000
Medium Trucks:	82.40	-12.47		1.3	1	-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	86.40	-27.26		1.3	1	-1.20		-5.50	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrie	er atten	nuation)						
VehicleType	Leq Peak Hou	ir Leq Day	'	Leq E	vening	Leq	Night		Ldn	C	NEL
Autos:	68	.5	67.6		65.5		63.	5	70.7	7	71.0
Medium Trucks:	70	.0	69.4		62.9		65.	4	72.4	1	72.6
Heavy Trucks:	59	.2	58.9		52.6		53.	3	60.8	3	61.0
Vehicle Noise:	72	.6	71.8		67.5		67.	7	74.8	3	75.0
Centerline Distan	ce to Noise Co	ontour (in feet))								
				70	dBA	65	dBA	(60 dBA	55	dBA
			I dn		00		100		129		023
			Lun.		92		195	·	420		520

	FHWA-RD)-77-108 HIGH\	NAY NOIS	SE PREDIC		ODEL (9/12	/2021)		
Scenar Road Nan Road Segme	io: E+P ne: Casmalia A nt: e/o Alder Av	v. /.			Project Job Ni	Name: Vine umber: 1553	yard Av. War 33	ehouse	
SITE	SPECIFIC IN	PUT DATA			N	OISE MOD	EL INPUTS	5	-
Highway Data				Site Con	ditions (Hard = 10,	Soft = 15)		
Average Daily Peak Hour Peak F Veak F	Traffic (Adt): Percentage: lour Volume: hicle Speed:	14,018 vehicle 7.17% 1,005 vehicles 55 mph	s	Me He	dium Tru avy Truc	Auto icks (2 Axles ks (3+ Axles	s: 15 s): 15 s): 15		
Near/Far La	ne Distance:	36 feet		Venicie	VIIX	Day	Evening	Night	Deily
Site Data				Ven	icie i ype	Udy	Evening	NIGHL	Dally
Barrier Type (0-V	rrier Height: /all. 1-Berm):	0.0 feet 0.0		м	edium Tr Heavy Tr	ucks: 73.8 ucks: 79.1	3% 4.2% 1% 4.7%	20.1% 22.1% 16.3%	10.55% 1.84%
Centerline Di	st. to Barrier:	44.0 feet		Noine C	uree El	vetiene (in	faat		
Centerline Dist.	to Observer:	44.0 feet		NOISe 30	Autoo		leel)		
Barrier Distance	to Observer:	0.0 feet		Madiu	Autos Trucka	. 0.000			
Observer Height	(Above Pad):	5.0 feet		Hear	n Trucks	. 2.237	Grade Adi	ustment [.]	0.0
P	ad Elevation:	0.0 feet		//ca	y mucks	. 0.004	0/440 / 14	uoumoni.	0.0
Ro	ad Elevation:	0.0 feet		Lane Eq	uivalent	Distance (i	n feet)		
	Road Grade:	0.0%			Autos	40.460			
	Left View:	-90.0 degree	s	Mediu	m Trucks	40.241			
	Right View:	90.0 degree	S	Hear	y Trucks	40.262			
FHWA Noise Mod	el Calculations	5		1					
VehicleType	REMEL	Traffic Flow	Distance	e Finite	Road	Fresnel	Barrier Atte	en Bern	n Atten
Autos:	71.78	-3.26	1	.28	-1.20	-4.6	1 0.0	00	0.000
Medium Trucks:	82.40	-12.45	1	.31	-1.20	-4.8	7 0.0	00	0.000
Heavy Trucks:	86.40	-20.03	1	.31	-1.20	-5.5	0 0.0	00	0.000
Unmitigated Nois	e Levels (with	out Topo and b	oarrier atte	enuation)					
VehicleType	Leq Peak Hou	r Leq Day	Leq	Evening	Leq I	Vight	Ldn	CN	IEL
Autos:	68	.6 6	67.7	65.5		63.5	70.7	,	71.1
Medium Trucks:	70	.1 6	69.4	62.9		65.4	72.5	5	72.6
Heavy Trucks:	66	.5 6	6.1	59.8		60.5	68.0)	68.2
Vehicle Noise:	73	.4 7	2.7	68.1		68.4	75.5	5	75.7
Centerline Distan	ce to Noise Co	ntour (in feet)							-
			7	0 dBA	65 0	IBA	60 dBA	55 0	dBA
		L	.dn:	103		222	478		1,030
		CN	IEL:	106		229	493		1,063

Monday, October 2, 2023

	FHWA-R	D-77-108 HIGH	WAY N	OISE F	REDIC	TION MO	ODEL (S	9/12/2	:021)		
Scena Road Nan Road Segme	rio: OYC ne: Casmalia A ent: e/o Alder A	λν. .v.				Project I Job Nu	Name: \ Imber: 1	/ineya 15533	ard Av. War	ehouse	
SITE	SPECIFIC IN	NPUT DATA				N	OISE N	IODE	L INPUTS	5	
Highway Data				S	ite Con	ditions (Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt):	24,761 vehicl	es				,	Autos.	15		
Peak Hour	Percentage:	7.17%			Me	dium Tru	cks (2 A	(xles)	: 15		
Peak I	Hour Volume:	1,775 vehicle	s		He	avy Truc	ks (3+ A	(xles)	: 15		
Ve	ehicle Speed:	55 mph		V	ehicle	Mix					
Near/Far La	ane Distance:	36 feet			Veh	icleType		Day	Evening	Night	Daily
Site Data						A	utos:	69.3%	6 10.6%	20.1%	88.81%
Ba	rrier Height:	0.0 feet			М	edium Tru	ucks:	73.8%	6 4.2%	22.1%	10.83%
Barrier Type (0-V	Vall, 1-Berm):	0.0			1	Heavy Tru	ucks:	79.19	6 4.7%	16.3%	0.36%
Centerline D	ist. to Barrier:	44.0 feet		N	oise So	ource Ele	vations	s (in f	eet)		
Centerline Dist.	to Observer:	44.0 feet				Autos	: 0.0	000			
Barrier Distance	to Observer:	0.0 feet			Mediu	m Trucks	: 2.2	297			
Observer Height	(Above Pad):	5.0 feet			Heav	/y Trucks	: 8.0	004	Grade Adj	ustmen	t: 0.0
F	ad Elevation:	0.0 feet									
Ro	ad Elevation:	0.0 feet		Li	ane Eq	uivalent	Distanc	e (In	teet)		
	Road Grade:	0.0%				Autos	: 40.4	460			
	Left View:	-90.0 degre	es		Mediu	m Trucks	: 40.2	241			
	Right View:	90.0 degre	es		Heav	/y Trucks	40.2	262			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresn	el	Barrier Atte	en Be	rm Atten
Autos:	71.78	-0.73		1.28		-1.20		-4.61	0.0	000	0.000
Medium Trucks:	82.40	-9.87		1.31		-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	86.40	-24.65		1.31		-1.20		-5.50	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier	attenu	ation)						
VehicleType	Leq Peak Ho	ur Leq Da	′ L	.eq Eve	ening	Leq N	Vight		Ldn	C	NEL
Autos:	71	1.1	70.2		68.1		66.1		73.3	3	73.6
Medium Trucks:	72	2.6	72.0		65.5		68.0)	75.0)	75.2
Heavy Trucks:	61	1.9	61.5		55.2		55.9		63.4	ļ	63.6
Vehicle Noise:	75	5.2	74.4		70.1		70.3		77.4	ļ	77.6
Centerline Distan	ce to Noise C	ontour (in feet)	70 -//	-	05 -		_			
			Ldn	70 at	A	00 0	DA		OU OBA	55	UBA A OTO
		0			138		296		639		1,376
		C	VEL:		142		306		660		1,422

	FHWA-RD	-77-108 HIGH	WAY	NOISE	PREDIC	TION M	ODEL (S	9/12/2	021)		
Scenario Road Name	o: OYC+P					Project	Name: \	/ineya	ırd Av. Waı	ehouse	
Road Segmen	t: e/o Alder A	v. /.				300 M		0000			
SITE S	SPECIFIC IN	PUT DATA				N	OISE N	IODE		5	
Highway Data				S	ite Con	ditions ('Hard =	10, So	oft = 15)		
Average Daily 1	Traffic (Adt):	25,185 vehicle	es				/	Autos:	15		
Peak Hour I	Percentage:	7.17%			Me	dium Tru	cks (2 A	xles):	15		
Peak Ho	our Volume:	1,806 vehicle	s		He	avy Truc	ks (3+ A	xles):	15		
Veh	nicle Speed:	55 mph		v	ehicle I	Nix					
Near/Far Lan	ne Distance:	36 feet		F	Vehi	cleType		Day	Evening	Night	Daily
Site Data						A	utos:	69.3%	10.6%	20.1%	88.149
Ban	rier Heiaht:	0.0 feet			Me	edium Tr	ucks:	73.8%	4.2%	22.1%	10.689
Barrier Type (0-Wa	all, 1-Berm):	0.0			ŀ	leavy Tr	ucks:	79.1%	4.7%	16.3%	1.199
Centerline Dis	t. to Barrier:	44.0 feet			loiso Sa	urco Ek	wation	(in f	nof)		
Centerline Dist. t	o Observer:	44.0 feet		~	0136 30			000	eel)		
Barrier Distance t	o Observer:	0.0 feet			Mediu	n Trucks	. 0.0	00			
Observer Height (#	Above Pad):	5.0 feet			Heav	v Trucks	. 2.2	01	Grade Ad	iustment	0.0
Pa	d Elevation:	0.0 feet			mour	,	. 0.0				
Roa	d Elevation:	0.0 feet		L	ane Equ	uivalent	Distanc	e (in	feet)		
F	Road Grade:	0.0%				Autos	: 40.4	160			
	Left View:	-90.0 degre	es		Mediur	n Trucks	: 40.2	241			
	Right View:	90.0 degre	es		Heav	y Trucks	: 40.2	262			
FHWA Noise Mode	I Calculation	5									
VehicleType	REMEL	Traffic Flow	Di	stance	Finite	Road	Fresn	el	Barrier Att	en Ber	m Atten
Autos:	71.78	-0.69		1.28		-1.20		-4.61	0.0	000	0.00
Medium Trucks:	82.40	-9.86		1.31		-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	86.40	-19.40		1.31		-1.20		-5.50	0.0	000	0.00
Unmitigated Noise	Levels (with	out Topo and	barri	er attenu	uation)						
VehicleType	Leq Peak Hou	r Leq Day	/	Leq Ev	ening	Leq I	Vight		Ldn	C	NEL
Autos:	71	.2	70.2		68.1		66.1		73.3	3	73
Medium Trucks:	72	.7	72.0		65.5		68.0		75.1	1	75.
Heavy Trucks:	67	.1	66.7		60.5		61.1		68.	r >	68.
Venicle Noise:	/5	.6	74.9		70.5		70.7		77.8	5	78.
Centerline Distance	e to Noise Co	ntour (in feet)	70 d	PA I	65.0	ID A		SO dPA	55	dBA
			I dn	700	146	031	216		, AUD 00	33	1 /6
		C	NFI ·		140		326		702		1,40

	FHWA-RI	D-77-108 HIG	HWAY	NOISE	PREDIC	TION MO	DEL (S)/12/2	021)		
Scenari Road Nam Road Segmer	o: HY e: Casmalia A nt: e/o Alder A	Av. .v.				Project N Job Nur	lame: \ mber: 1	/ineya 5533	rd Av. War	ehouse	
SITE S	SPECIFIC IN	NPUT DATA				NC	DISE N	IODE	L INPUTS	3	
Highway Data					Site Con	ditions (H	lard =	10, Sc	oft = 15)		
Average Daily Peak Hour Peak H Vel	Traffic (Adt): Percentage: our Volume: hicle Speed:	27,159 vehic 7.17% 1,947 vehicl 55 mph	es	_	Me He	dium Truc avy Truck	A ks (2 A s (3+ A	Autos: xles): xles):	15 15 15		
Near/Far Lar	ne Distance:	36 feet		-	Venicie I	nix ala Tuna		Dav	Evening	Might	Dailu
Site Data					veni	cie i ype Au	itos:	69.3%	Evening 10.6%	20.1%	88.81%
Bar	rier Heiaht:	0.0 feet			Me	edium Tru	cks:	73.8%	4.2%	22.1%	10.83%
Barrier Type (0-W	all, 1-Berm):	0.0			ŀ	leavy Tru	cks:	79.1%	4.7%	16.3%	0.36%
Centerline Dis	st. to Barrier:	44.0 feet			Noise So	urce Elev	vations	; (in fe	eet)		
Centerline Dist. I	to Observer:	44.0 feet				Autos:	0.0	000			
Barrier Distance t	to Observer:	0.0 feet			Mediur	n Trucks:	2.2	297			
Observer Height (Above Pad): d Elevation:	5.0 feet			Heav	y Trucks:	8.0	004	Grade Adj	ustment	: 0.0
Roa	d Elevation:	0.0 feet			Lane Equ	ivalent D	Distanc	e (in	feet)		
F	Road Grade:	0.0 1661				Autos:	40.4	160	,		
	Left View:	-90 0 dear	200		Mediur	n Trucks:	40 2	241			
	Right View:	90.0 degre	ees		Heav	y Trucks:	40.2	262			
FHWA Noise Mode	l Calculation	s									-
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresn	el	Barrier Atte	en Bei	m Atten
Autos:	71.78	-0.3	3	1.2	28	-1.20		-4.61	0.0	00	0.000
Medium Trucks:	82.40	-9.4	7	1.3	31	-1.20		-4.87	0.0	00	0.000
Heavy Trucks:	86.40	-24.2	5	1.3	81	-1.20		-5.50	0.0	00	0.000
Unmitigated Noise	Levels (with	out Topo and	d barri	er atter	nuation)						
VehicleType	Leq Peak Hou	ur Leq Da	ay 🛛	Leq E	vening	Leq N	ight		Ldn	C	NEL
Autos:	71	1.5	70.6		68.5		66.5		73.7		74.0
Medium Trucks:	73	3.0	72.4		65.9		68.4		75.4		75.6
Heavy Trucks:	62	2.3	61.9		55.6		56.3		63.8		64.0
Vehicle Noise:	75	5.6	74.8		70.5		70.7		77.8		78.0
Centerline Distanc	e to Noise Co	ontour (in fee	et)								
				70	dBA	65 dE	ЗA	6	60 dBA	55	dBA
			Ldn:		146		315		679		1,463
		0	CNEL:		151		326		702		1,512

	FHWA-RI	0-77-108 HIGHV	VAY NC	DISE F	PREDIC	TION MC	DEL (9/12/2	021)			
Scenar Road Narr Road Segme	io: HY+P ne: Casmalia A nt: e/o Alder A	.v. v.				Project N Job Nu	lame: mber:	Vineya 15533	ard Av. Wa	areho	use	
SITE	SPECIFIC IN	IPUT DATA				NC	DISE	NODE	L INPUT	rs		-
Highway Data				S	ite Con	ditions (H	lard =	10, Se	oft = 15)			-
Average Daily Peak Hour Peak F Ve	Traffic (Adt): Percentage: lour Volume: chicle Speed:	27,583 vehicles 7.17% 1,978 vehicles 55 mph	\$		Mei Hei	dium Truc avy Truck	cks (2) s (3+)	Autos: Axles): Axles):	15 15 15			
Near/Far La	ne Distance:	36 feet			Vehi	nix cleTupe		Dav	Evening	Nic	tht	Daily
Sito Data				_	veni	cie i ype	itor:	60.2%	10.6%	20	196	00 10%
Barrier Type (0-W	rrier Height: Vall, 1-Berm):	0.0 feet 0.0			Me F	edium Tru Ieavy Tru	cks: cks:	73.8% 79.1%	4.2%	22	.1% .3%	10.69% 1.11%
Centerline Di	st. to Barrier:	44.0 feet		N	oise So	urce Fle	vation	s (in fi	eef)			
Centerline Dist. Barrier Distance Observer Height	to Observer: to Observer: (Above Pad): ad Elevation:	44.0 feet 0.0 feet 5.0 feet			Mediur Heav	Autos: n Trucks: y Trucks:	0. 2. 8.	000 297 004	Grade A	djustn	nent:	0.0
Ro	ad Elevation:	0.0 feet		Li	ane Equ	uivalent L	Distan	ce (in	feet)		-	
	Road Grade: Left View: Right View:	0.0% -90.0 degrees 90.0 degrees	3		Mediur Heav	Autos: n Trucks: y Trucks:	40. 40. 40.	460 241 262				
FHWA Noise Mod	el Calculation	s										
VehicleType	REMEL	Traffic Flow	Distan	се	Finite	Road	Fresr	nel	Barrier A	tten	Berr	n Atten
Autos: Medium Trucks: Heavy Trucks:	71.78 82.40 86.40	-0.29 -9.46 -19.28		1.28 1.31 1.31		-1.20 -1.20 -1.20		-4.61 -4.87 -5.50	0 0 0	.000 .000 .000		0.000 0.000 0.000
Unmitigated Noise	e Levels (with	out Topo and b	arrier a	ttenu	ation)						-	
VehicleType	Leq Peak Hou	Ir Leq Day	Le	eq Eve	ening	Leq N	ight		Ldn		CN	IEL
Autos:	71	.6 7	0.6		68.5		66.	5	73	.7		74.0
Medium Trucks:	73	.1 7	2.4		65.9		68.4	1	75	.5		75.6
Heavy Trucks:	67	.2 6	6.9		60.6		61.3	2	68	.8		69.0
Vehicle Noise:	76	.0 7	5.3		70.8		71.0)	78	.2		78.4
Centerline Distant	ce to Noise Co	ontour (in feet)										
				70 dł	BA	65 dl	BA	(60 dBA		55 0	1BA
		L	dn:		155		334		71	9		1,550
		CN	EL:		160		345		74	3		1,600

Monday, October 2, 2023

	FHWA-R	D-77-108 HIGH	IWAY N	OISE F	REDIC	TION MO	ODEL (S	9/12/2	021)		
Scenar	rio: E					Project I	Vame: \	/ineya	ard Av. Wa	ehouse	
Road Nan Road Segme	ne: Casmalia A nt: w/o Laurel	Av. Av.				Job Nu	imber: 1	15533			
SITE	SPECIFIC IN	NPUT DATA				N	OISE N	IODE		S	
Highway Data				Si	ite Con	ditions (Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt):	10,369 vehicl	es				,	Autos:	15		
Peak Hour	Percentage:	7.17%			Mee	dium Tru	cks (2 A	xles).	15		
Peak H	lour Volume:	743 vehicle	s		Hea	avy Truci	ks (3+ A	xles).	15		
Ve	hicle Speed:	55 mph		V	ehicle N	<i>lix</i>					
Near/Far La	ne Distance:	36 feet			Vehi	cleType		Day	Evening	Night	Daily
Site Data						A	utos:	69.3%	6 10.6%	20.1%	88.81%
Ba	rrier Height:	0.0 feet			Me	edium Tru	ucks:	73.8%	6 4.2%	22.1%	10.83%
Barrier Type (0-V	Vall, 1-Berm):	0.0			H	leavy Tru	ucks:	79.1%	6 4.7%	16.3%	0.36%
Centerline D	ist. to Barrier:	44.0 feet		N	oise So	urce Ele	vations	s (in f	eet)		
Centerline Dist.	to Observer:	44.0 feet				Autos	: 0.0	000			
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks	: 2.2	297			
Observer Height	(Above Pad):	5.0 feet			Heav	y Trucks	: 8.0	004	Grade Ad	iustment	: 0.0
P	ad Elevation:	0.0 feet					D:		f 41		
Ro	ad Elevation:	0.0 feet		Là	ane Equ	Ivalent	Distanc	e (In	reet)		
	Road Grade:	0.0%				Autos.	: 40.4	100			
	Left View:	-90.0 degre	es		Mealur	n Trucks.	. 40.	241			
	Right view:	90.0 degre	es		neav	y TTUCKS.	. 40.4	202			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresn	el	Barrier Att	en Ber	m Atten
Autos:	71.78	-4.51		1.28		-1.20		-4.61	0.0	000	0.000
Medium Trucks:	82.40	-13.65		1.31		-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	86.40	-28.43		1.31		-1.20		-5.50	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier	attenu	ation)						
VehicleType	Leq Peak Ho	ur Leq Daj	/ [Leq Eve	ening	Leq N	light		Ldn	CI	NEL
Autos:	67	7.3	66.4		64.3		62.3		69.5	5	69.8
Medium Trucks:	68	3.9	68.2		61.7		64.2		71.3	3	71.4
Heavy Trucks:	58	3.1	57.7		51.4		52.1		59.6	i -	59.8
venicle Noise:	71	1.4	70.6		66.3		66.5	•	73.6	5	73.9
Centerline Distan	ce to Noise C	ontour (in feet)								
				70 dE	BA	65 d	BA		60 dBA	55	dBA
		-	Ldn:		77		166		357		770
		С	NEL:		80		171		369		796

	FHWA-RD		IVVAT	NUISE	REDIC			12/2	021)		
Scenario Road Name Road Segmen	o: E+P e: Casmalia A t: w/o Laurel A	v. Av.				Project I Job Ni	Name: V Imber: 1	'ineya 5533	rd Av. War	ehouse	
SITE S	SPECIFIC IN	PUT DATA				N	OISE M	ODE	L INPUT	5	
Highway Data				Si	ite Con	ditions (Hard = 1	10, Sc	oft = 15)		
Average Daily 1 Peak Hour I Peak Ho	Traffic (Adt): Percentage: pur Volume:	10,793 vehicle 7.17% 774 vehicle	es s		Mei Hei	dium Tru avy Truc	A cks (2 A ks (3+ A	utos: xles): xles):	15 15 15		
Near/Far I an	nele opeca. ne Distance:	36 feet		V	ehicle N	lix			<u>г г</u>		
	Diotanoo.	00 1001			Vehi	cleType		Day	Evening	Night	Daily
Site Data						A	utos: 6	59.3%	10.6%	20.1%	87.24
Bar Barrier Type (0-Wa	rier Height: all, 1-Berm):	0.0 feet 0.0			Ме	eaium Tri leavy Tri	ucks: T ucks: T	/3.8% /9.1%	6 4.2% 6 4.7%	22.1% 16.3%	2.29
Centerline Dis	t. to Barrier:	44.0 feet		N	oise So	urce Ele	vations	(in fe	eet)		
Centerline Dist. t Barrier Distance t Observer Height (/ Pa	o Observer: o Observer: Above Pad): d Elevation:	44.0 teet 0.0 feet 5.0 feet 0.0 feet			Mediur Heav	Autos n Trucks y Trucks	: 0.0 : 2.2 : 8.0	00 97 04	Grade Adj	ustment	: 0.0
Roa	d Elevation:	0.0 feet		La	ane Equ	ivalent	Distanc	e (in :	feet)		
F	Road Grade: Left View: Right View:	0.0% -90.0 degree 90.0 degree	es es		Mediur Heav	Autos n Trucks y Trucks	: 40.4 : 40.2 : 40.2	60 41 62			
FHWA Noise Mode	I Calculations	;									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresne	e/	Barrier Atte	en Bei	rm Atter
Autos:	71.78	-4.42		1.28		-1.20	-	4.61	0.0	00	0.00
Medium Trucks:	82.40	-13.62		1.31		-1.20	-	4.87	0.0	00	0.00
Heavy Trucks:	86.40	-20.23		1.31		-1.20	-	5.50	0.0	00	0.00
Unmitigated Noise	Levels (with	out Topo and	barri	er attenu	ation)						
VehicleType	Leq Peak Hou	r Leq Day	/	Leg Eve	ening	Leq N	light		Ldn	С	NEL
Autos:	67.	4	66.5		64.4		62.4		69.6	6	69
Medium Trucks:	68.	9	68.2		61.7		64.2		71.3	5	71
Heavy Trucks:	66.	3	65.9		59.6		60.3		67.8	3	68
Vehicle Noise:	72.	4	71.8		67.1		67.4		74.6	5	74
Centerline Distance	e to Noise Co	ntour (in feet)								
			L	70 dE	BA	65 a	IBA	6	60 dBA	55	dBA
			I dn		00		101		411		88
			Lun.		69		101				

FHWA-RD	0-77-108 HIGHW	AY NOIS	E PREDIC	TION MOD	EL (9/12/2	2021)	
OYC				Project Na	ne: Viney	ard Av. Warel	nouse
Casmalia A	V.			Job Numl	ber: 15533	5	
w/o Laurel /	Av.						
ECIFIC IN	PUT DATA		011 0	NOI	SE MODI	EL INPUTS	
			Site Con	ditions (Ha	ra = 10, S	oft = 15)	
affic (Adt):	13,883 vehicles				Autos	: 15	
rcentage:	7.17%		Me	dium Trucks	(2 Axles)	: 15	
r Volume:	995 vehicles		He	avy Trucks	(3+ Axles)	: 15	
le Speed:	55 mph		Vehicle I	Nix			
Distance:	36 feet		Veh	icleType	Day	Evening 1	Vight Daily
				Auto	s: 69.3%	6 10.6%	20.1% 88.81
r Hoiaht	0.0 feet		Me	edium Truck	s: 73.89	6 4.2%	22.1% 10.83
1-Berm):	0.0		ŀ	leavy Truck	s: 79.19	6 4.7%	16.3% 0.36
to Barrier:	44.0 feet		Noise Or		41 (1 A	41	
Observer:	44.0 feet		Noise Sc	ource Eleva	tions (in 1	eet)	
Observer:	0.0 feet			Autos:	0.000		
ove Pad):	5.0 feet		Meaiui	m Trucks:	2.297	Crada Adiu	atmont: 0.0
Elevation:	0.0 feet		Heav	y Trucks:	8.004	Grade Aujus	sument. 0.0
Elevation:	0.0 feet		Lane Equ	uivalent Dis	stance (in	feet)	
ad Grade:	0.0%			Autos:	40.460		
Left View:	-90.0 degrees		Mediur	m Trucks:	40.241		
ight View:	90.0 degrees		Heav	y Trucks:	40.262		
Calculation	5		1				
REMEL	Traffic Flow	Distance	Finite	Road F	resnel	Barrier Atter	Berm Atter
71.78	-3.24	1	.28	-1.20	-4.61	0.00	0 0.00
82.40	-12.38	1	.31	-1.20	-4.87	0.00	0 0.00
86.40	-27.17	1	.31	-1.20	-5.50	0.00	0 0.00
evels (with	out Topo and ba	arrier atte	enuation)				
q Peak Hou	r Leq Day	Leq	Evening	Leq Nigi	nt	Ldn	CNEL
68	.6 67	7.7	65.5		63.6	70.7	71
70	.1 69	9.5	63.0		65.5	72.5	72
	.3 59	9.0	52.7		53.4	60.9	61
59					670	740	75
59 72	.7 7	1.9	67.6		07.0	74.9	75
59 72 to Noise Co	.7 7 ontour (in feet)	1.9	67.6		07.0	74.9	75
59 72 to Noise Co	.7 7 [.] ontour (in feet)	1.9	67.6 0 dBA	65 dBA	07.0	60 dBA	55 dBA
59 72 to Noise Co	.7 7 [.] ontour (in feet)	1.9 70 dn:	67.6 0 dBA 94	65 dBA	202	60 dBA 434	55 dBA 93
	FHWARC OYC Casmalia A W/o Laurel / ECIFIC IN ffic (Ad1): reentage: r Volume: le Speed: Distance: r Volume: le Speed: Distance: r Height: 1-Berm): to Barrier: Dbserver: ove Pad): Elevation: ad Grade: Left View: Calculation: REMEL 21,178,82,40 86,40 evels (with q Peak House) 68	FHWA-RD-77-108 HIGHW OYC Casmalia AV. wio Laurel AV. ECIFIC INPUT DATA ECIFIC INPUT DATA Iffic (Adl): ffic (Adl): 13,883 vehicles roentage: r Volume: 995 vehicles le Speed: post 55 mph Distance: 36 feet r Height: 0.0 feet 1-Berm): 0.0 to Barrier: 44.0 feet Dosterver: 0.0 feet Dosterver: 0.0 feet Bevalum: 0.0 feet ad Grade: 0.00 vegrees calculations REMEL Traffic Flow 71.78 -3.24 -2.38 86.40 -27.17 sevels vests withtout Topo and bi q Peak Hour Leq Day 68.6 65	FHWA-RD-77-108 HIGHWAY NOIS OYC Casmalia Av. wio Laurel Av. ECIFIC INPUT DATA ECIFIC INPUT DATA Iffic (Adl): ffic (Adl): 13,883 vehicles crentage: 7.17% r Volume: 995 vehicles le Speed: 55 mph Distance: 36 feet THeight: 0.0 feet 1-Berm): 0.0 to Barrier: 44.0 feet Dbserver: 0.0 feet Elevation: 0.0 feet Elevation: 0.0 feet Elevation: 0.0 feet Elevation: 0.0 degrees ight View: 90.0 degrees calculations REMEL Traffic Flow Distance 71.78 -3.24 1 86.40 -27.17 86.40 -27.17 1 sevels (without Topo and barrier attk greak Hour Leq Day Leq Geage 68.6 67.7	FHWA-RD-77-108 HIGHWAY NOISE PREDIC OYC Casmalia Av. wio Laurel Av. ECIFIC INPUT DATA Site Con ffic (Adt): 13,883 vehicles rocentage: 7.17% Me He vOlume: 995 vehicles He Distance: 36 feet Vehicle I T-Bern): 0.0 Me t-Barrin: 44.0 feet Mediu Doserver: 44.0 feet Mediu Doserver: 0.0 feet Mediu Elevation: 0.0 feet Lane Equ ad Grade: 0.0% Celf View: 90.0 degrees Mediu T1.78 -3.24 1.28 REMEL Traffic Flow Distance Finite 71.78 -3.24 1.28 1.31 86.40 -27.17 1.31 sevels (without Topo and barrier attenuation) q Peak Hour Leq Day Leq Qay Leq Qay	FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MOD OYC Project Nai Casmalia Av. Casmalia Av. Job Numi Wo Laurel Av. Site Conditions (Ha Site Conditions (Ha Fife (Adl): Noise ECIFIC INPUT DATA Noise Gradiest and the second s	FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2 OYC Project Name: Viney Casmalia Av. Job Number: 15533 Wo Laurel Av. Job Number: 15533 ECIFIC INPUT DATA NOISE MODI Site Conditions (Hard = 10, S) Autos ffic (Adt): 13,883 vehicles Autos rocentage: 7.17% Medium Trucks (2 Axles) Poblestnee: 36 feet Vehicle Mix Distance: 36 feet Vehicle Mix Distance: 36 feet Noise Source Elevations (in 1 Observer: 44.0 feet Medium Trucks: 2.297 Doserver: 44.0 feet Moise Source Elevations (in 1 Autos: 9.000 Doserver: 0.0 feet Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 0.0 feet Autos: 0.0241 Heavy Trucks: 0.0241 Elevation: 0.0 feet Autos: 40.241 Heavy Trucks: 40.242 Cell View: 90.0 degrees Medium Trucks: 40.262 Calculation	FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021) OYC Project Name: Vineyard Av. Warel Casmalia Av. Job Number: 15533 Wo Laurel Av. Site Conditions (Hard = 10, Soft = 15) ECIFIC INPUT DATA NOISE MODEL INPUTS Site Conditions (Hard = 10, Soft = 15) Autos: Iffic (Adl): 13.883 vehicles Autos: row Site Conditions (Hard = 10, Soft = 15) Autos: Iffic (Adl): 13.883 vehicles Autos: 15 Volume: 995 vehicles Heavy Trucks (2 Avles): 15 Vehicle Mix Vehicle Mix Noise Source: 10.6% Medium Trucks: 73.8% 10.6% Medium Trucks: 73.8% 4.2% Distance 0.0 feet Moise Source Elevation: 0.0 feet Autos: 0.000 Observer: 4.0 feet Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adju: Elevation: 0.0 feet Medium Trucks: 4.0460 Autos: 40.262 Elevation: 0.0 degrees Medium Trucks:

Monday, October 2, 2023

	THWARD	n - 100 mom	MAI	NOISE	FREDIC		ODEL	(9/12/2)	JZ I)		
Scenar	io: OYC+P					Project	Name:	Vineya	rd Av. Wa	rehouse	
Road Nan	ne: Casmalia Av	1				Job N	umber:	15533			
Road Segme	nt: w/o Laurel A	v.									
SITE	SPECIFIC IN	PUT DATA				N	OISE	MODE		s	
Highway Data					Site Con	ditions	(Hard =	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	4,307 vehicle	s					Autos:	15		
Peak Hour	Percentage:	7.17%			Mee	dium Tru	ıcks (2	Axles):	15		
Peak H	lour Volume:	1,026 vehicles			Hea	avy Truc	:ks (3+	Axles):	15		
Ve	hicle Speed:	55 mph		-	Vehicle N	<i>lix</i>					
Near/Far La	ne Distance:	36 feet		F	Vehi	cleType		Day	Evening	Night	Daily
Site Data						A	utos:	69.3%	10.6%	20.1%	87.63%
Ba	rrier Height	0.0 feet			Me	edium Tr	ucks:	73.8%	4.2%	22.1%	10.56%
Barrier Type (0-V	/all. 1-Berm):	0.0			F	leavy Tr	ucks:	79.1%	4.7%	16.3%	1.81%
Centerline Di	st. to Barrier:	44.0 feet		-	Noiso So	urco El	ovatio	e (in fr	ootl		
Centerline Dist.	to Observer:	44.0 feet		-	140/36 30	Autor	evalion	000	eel)		
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucki	s. ∪ ⊷ 2	207			
Observer Height	(Above Pad):	5.0 feet			Heav	v Trucks	р. <u>–</u> . Я	004	Grade Ad	iustmen	t: 0.0
P	ad Elevation:	0.0 feet			neav	y mache	, U	.004		,	
Ro	ad Elevation:	0.0 feet			Lane Equ	iivalent	Distar	ce (in i	feet)		
	Road Grade:	0.0%				Autos	s: 40	.460			
	Left View:	-90.0 degree	s		Mediur	n Trucks	s: 40	.241			
	Right View:	90.0 degree	s		Heav	y Trucks	s: 40	.262			
FHWA Noise Mod	el Calculations										
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fres	nel	Barrier Att	en Be	rm Atten
Autos:	71.78	-3.17		1.2	8	-1.20		-4.61	0.0	000	0.000
Medium Trucks:	82.40	-12.36		1.3	1	-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	86.40	-20.01		1.3	1	-1.20		-5.50	0.0	000	0.000
Unmitigated Nois	e Levels (witho	ut Topo and I	barrie	er atter	uation)						
VehicleType	Leq Peak Hour	Leq Day		Leq E	vening	Leq	Night		Ldn	С	NEL
Autos:	68.	76	67.7		65.6		63	6	70.8	В	71.3
Medium Trucks:	70.2	2 6	69.5		63.0		65	5	72.5	5	72.
Heavy Trucks:	66.	5 6	56.1		59.8		60.	5	68.1	1	68.2
Vehicle Noise:	73.5	5 7	72.8		68.2		68	4	75.6	6	75.8
Centerline Distan	ce to Noise Cor	ntour (in feet)									
				70	dBA	65 (dBA	6	60 dBA	55	i dBA
		I	Ldn:		104		224	4	484		1,042
		CN	IEL:		108		23	2	499)	1,076

	FHWA-RI	D-77-108 HIGH	IWAY N	NOISE F	PREDIC		IODEL (9/12/2	2021)		
Scena	rio: HY					Project	Name: \	/iney	ard Av. War	ehouse	
Road Nar Road Segme	ne: Casmalia A ent: w/o Laurel	Av.				Job N	lumber:	15533	5		
SITE	SPECIFIC IN	IPUT DATA				N	IOISE N	IODI	EL INPUTS	5	
Highway Data				Si	ite Con	ditions	(Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt):	20,570 vehicl	es				,	Autos	: 15		
Peak Hour	r Percentage:	7.17%			Me	dium Tr	ucks (2 A	(xles	: 15		
Peak I	Hour Volume:	1,475 vehicle	s		He	avy Tru	cks (3+ A	(xles	: 15		
Ve	ehicle Speed:	55 mph		Ve	ehicle l	Mix					
Near/Far La	ane Distance:	36 feet			Veh	icleType	•	Day	Evening	Night	Daily
Site Data						,	Autos:	69.3%	6 10.6%	20.1%	88.81%
Ba	rrier Height:	0.0 feet			M	edium T	rucks:	73.8%	6 4.2%	22.1%	10.83%
Barrier Type (0-V	Vall, 1-Berm):	0.0			1	Heavy T	rucks:	79.19	6 4.7%	16.3%	0.36%
Centerline D	ist. to Barrier:	44.0 feet		N	oise So	ource El	evation	s (in f	eet)	-	
Centerline Dist.	to Observer:	44.0 feet				Auto	s: 0.0	000			
Barrier Distance	to Observer:	0.0 feet			Mediu	m Truck	s: 2.1	297			
Observer Height	(Above Pad):	5.0 feet			Heav	/y Truck	s: 8.0	004	Grade Adj	ustment	t: 0.0
F	ad Elevation:	0.0 feet		_							
Ro	ad Elevation:	0.0 feet		Lä	ane Eq	uivalen	Distanc	e (In	teet)		
	Road Grade:	0.0%				Auto	s: 40.4	460			
	Left View:	-90.0 degre	es		Mediu	m Truck	s: 40.:	241			
	Right View:	90.0 degre	es		Heav	/y Truck	s: 40.	262			
FHWA Noise Mod	lel Calculation	s									
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresn	el	Barrier Atte	en Ber	rm Atten
Autos:	71.78	-1.54		1.28		-1.20		-4.61	0.0	00	0.000
Medium Trucks:	82.40	-10.67		1.31		-1.20		-4.87	0.0	00	0.000
Heavy Trucks:	86.40	-25.46		1.31		-1.20		-5.50	0.0	00	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier	r attenu	ation)						
VehicleType	Leq Peak Hou	ur Leq Daj	/	Leq Eve	ening	Leq	Night		Ldn	C	NEL
Autos:	70).3	69.4		67.3		65.3	3	72.5	j.	72.8
Medium Trucks:	71	.8	71.2		64.7		67.2	2	74.2		74.4
Heavy Trucks:	61	.0	60.7		54.4		55.1		62.6	i	62.8
Vehicle Noise:	74	.4	73.6		69.3		69.5	5	76.6	i	76.8
Centerline Distan	ce to Noise Co	ontour (in feet)		_						-
				70 dE	BA	65	dBA		60 dBA	55	dBA
			Ldn:		122		262		564		1,216
		С	NEL:		126		271		583		1,256

	FHWA-RD	-77-108 HIGH	WAY	NOISE	PREDICT		ODEL (9	/12/2	021)		
Scenario Road Name Road Segment	: HY+P : Casmalia A : w/o Laurel A	v. Av.				Project Job N	Name: V umber: 1	ineya 5533	rd Av. War	ehouse	
SITE S	PECIFIC IN	PUT DATA				N	IOISE M	ODE	L INPUT	5	
Highway Data				S	ite Cond	litions	(Hard = 1	0, So	oft = 15)		
Average Daily T Peak Hour F Peak Ho	raffic (Adt): Percentage: ur Volume:	20,994 vehicle 7.17% 1,505 vehicle	es s		Med Hea	lium Tr wy Tru	A ucks (2 A cks (3+ A	utos: xles): xles):	15 15 15		
Veh	icle Speed:	55 mph		V	ehicle M	lix					
Near/Far Lan	e Distance:	36 feet			Vehic	leType	L	Day	Evening	Night	Daily
Site Data							Autos: 6	9.3%	10.6%	20.1%	88.00%
Barr	ier Heiaht:	0.0 feet			Me	dium T	rucks: 7	3.8%	4.2%	22.1%	10.65%
Barrier Type (0-Wa	II, 1-Berm):	0.0			Н	eavy T	rucks: 7	9.1%	4.7%	16.3%	1.35%
Centerline Dist	to Barrier:	44.0 feet		^	loise So	urce El	evations	(in fe	eet)		
Centerline Dist. to	Observer:	44.0 feet				Auto	s: 0.0	00			
Barrier Distance to	Observer:	0.0 feet			Medium	n Truck	s: 2.2	97			
Observer Height (A	bove Pad):	5.0 feet			Heavy	/ Truck	s: 8.0	04	Grade Adj	ustment	: 0.0
Pa	d Elevation:	0.0 feet		-							
Road	d Elevation:	0.0 feet		L	ane Equ	ivalen	Distance	e (in :	leet)		
R	oad Grade:	0.0%				Auto	s: 40.4	60			
	Left View:	-90.0 degre	es		Medium	1 Truck	s: 40.2	41			
	Right View:	90.0 degre	es		Heavy	/ Truck	s: 40.2	62			
FHWA Noise Model	Calculations	;									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite F	Road	Fresne	e/	Barrier Atte	en Ber	m Atten
Autos:	71.78	-1.49		1.28	;	-1.20	-	4.61	0.0	00	0.00
Medium Trucks:	82.40	-10.66		1.31		-1.20	-	4.87	0.0	00	0.00
Heavy Trucks:	86.40	-19.63		1.31		-1.20	-	5.50	0.0	00	0.00
Unmitigated Noise	Levels (witho	out Topo and	barrie	er atteni	uation)						
VehicleType I	.eq Peak Hou	r Leq Day	1	Leq Ev	ening	Leq	Night		Ldn	CI	NEL
Autos:	70.	4	69.4		67.3		65.3		72.5	5	72
Medium Trucks:	71.	.9	71.2		64.7		67.2		74.3	5	74.
Heavy Trucks:	66.	9	66.5		60.2		60.9		68.4	1	68.
Vehicle Noise:	74.	.9	74.2		69.7		69.9		77.1		77.
Centerline Distance	e to Noise Co	ntour (in feet)	70 -	D 4	67			0 48 4	57	dB A
			1 day	70 a	404	60	UDA 000		O UDA	55	UDA 4 04/
		0	LUN:		131		282		608		1,310
		6	VEL:		135		291		628		1,353

	FHWA-RD-	77-108 HIGHW	AY NOIS			DEL (9	/12/20	021)		_
Scenar Road Nan Road Segme	io: E ne: Casmalia Av. nt: w/o Locust Av	v.			Project N Job Nu	<i>lame:</i> V mber: 1	ineya 5533	rd Av. Wa	rehouse	
SITE	SPECIFIC INP	UT DATA			N	DISE M	ODE	L INPUT	S	
Highway Data				Site Con	ditions (I	Hard = 1	10, Sc	oft = 15)		
Average Daily	Traffic (Adt): 1	1,402 vehicles				A	utos:	15		
Peak Hour	Percentage:	7.17%		Me	dium Truc	cks (2 A.	xles):	15		
Peak F	lour Volume:	818 vehicles		He	avy Truck	(3+ A.	xles):	15		
Ve	hicle Speed:	55 mph		Vehicle I	Mix					
Near/Far La	ne Distance:	36 feet		Veh	icleType	Ĺ	Day	Evening	Night	Daily
Site Data					AL	itos: 6	, 9.3%	10.6%	20.1%	88.81%
Pa	rrior Hoight:	0.0 foot		M	edium Tru	cks: 7	3.8%	4.2%	22.1%	10.83%
Barrier Type (0-V	/all, 1-Berm):	0.0		1	Heavy Tru	icks: 7	79.1%	4.7%	16.3%	0.36%
Centerline Di	st. to Barrier:	44.0 feet		Noise So	ource Ele	vations	(in fe	eet)		
Centerline Dist.	to Observer:	44.0 feet			Autos:	0.0	00	.,		
Barrier Distance	to Observer:	0.0 feet		Mediu	m Trucks	2.2	97			
Observer Height	(Above Pad):	5.0 feet		Heav	v Trucks	8.0	04	Grade Ad	justment	0.0
P	ad Elevation:	0.0 feet								
Ro	ad Elevation:	0.0 feet		Lane Eq	uivalent l	Distance	e (in i	'eet)		
	Road Grade:	0.0%			Autos:	40.4	60			
	Left View:	-90.0 degrees		Mediu	m Trucks:	40.2	41			
	Right View:	90.0 degrees		Heav	y Trucks:	40.2	62			
FHWA Noise Mod	el Calculations									
VehicleType	REMEL 1	Traffic Flow	Distance	e Finite	Road	Fresne	2	Barrier Att	en Ber	m Atten
Autos:	71.78	-4.10	1	.28	-1.20	-	4.61	0.0	000	0.000
Medium Trucks:	82.40	-13.24	1	.31	-1.20	-	4.87	0.0	000	0.000
Heavy Trucks:	86.40	-28.02	1	.31	-1.20	-	5.50	0.0	000	0.000
Unmitigated Nois	e Levels (withou	it Topo and ba	rrier att	enuation)					1	
VehicleType	Leq Peak Hour	Leq Day	Leq	Evening	Leq N	ight		Ldn	CI	VEL
Autos:	67.8	66	.8	64.7		62.7		69.9	9	70.2
Medium Trucks:	69.3	68	.6	62.1		64.6		71.	/	71.8
Heavy Trucks:	58.5	58	.1	51.8		52.5		60.0)	60.2
venicle Noise:	/1.8	/1	.0	66.7		66.9		74.	1	74.3
Centerline Distan	ce to Noise Con	tour (in feet)							1	
			1 7	0 dBA	65 di	BA	6	i0 dBA	55	dBA
		Ld	n:	82		177		381		821

	FHWA-RL	0-77-108 HIGH	IVVAT	NUISE	PREDIC		ODEL	9/12/20	J21)		
Scenar	io: E+P					Project	Name:	Vineya	rd Av. Wa	rehouse	e
Road Nam	e: Casmalia A	v.				Job Nu	umber:	15533			
Road Segmer	nt: w/o Locust	Av.									
SITE	SPECIFIC IN	PUT DATA				N	OISE	MODE	L INPUT	S	
Highway Data				S	Site Con	ditions (Hard =	: 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	11,826 vehicle	es					Autos:	15		
Peak Hour	Percentage:	7.17%			Me	dium Tru	icks (2	Axles):	15		
Peak H	our Volume:	848 vehicle	s		Hei	avy Truc	ks (3+	Axles):	15		
Ve	hicle Speed:	55 mph		v	/ehicle M	lix					
Near/Far La	ne Distance:	36 feet		F	Vehi	cleType		Day	Evening	Night	Daily
Site Data					-	A	utos:	69.3%	10.6%	20.19	% 87.38%
Bai	rier Height:	0.0 feet			Me	dium Tr	ucks:	73.8%	4.2%	22.19	% 10.50%
Barrier Type (0-W	all. 1-Berm):	0.0			F	leavy Tr	ucks:	79.1%	4.7%	16.3%	% 2.12%
Centerline Dis	st. to Barrier:	44.0 feet			laiaa Ca	uree El	wation	o (in fe	ant)		
Centerline Dist.	to Observer:	44.0 feet		~	ioise so	Autor	evalion		el)		
Barrier Distance	to Observer:	0.0 feet			Madium	Autos	. U	207			
Observer Height (Above Pad):	5.0 feet			Hear	Trucks	i. 2	004	Grade An	liustmai	nt: 0.0
Pa	ad Elevation:	0.0 feet			neav	y mucks	i. 0	.004	Orade Au	yusunci	1. 0.0
Roa	ad Elevation:	0.0 feet		L	ane Equ	iivalent	Distan	ce (in i	feet)		
1	Road Grade:	0.0%				Autos	: 40	.460			
	Left View:	-90.0 degree	es		Mediur	n Trucks	: 40	.241			
	Right View:	90.0 degree	es		Heav	y Trucks	: 40	.262			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fres	nel	Barrier Att	ten Be	erm Atten
Autos:	71.78	-4.01		1.28	3	-1.20		-4.61	0.	000	0.000
Medium Trucks:	82.40	-13.21		1.31		-1.20		-4.87	0.	000	0.000
Heavy Trucks:	86.40	-20.16		1.31		-1.20		-5.50	0.	000	0.000
Unmitigated Noise	Levels (with	out Topo and	barrie	er attenu	uation)						
VehicleType	Leq Peak Hou	r Leq Day	1	Leq Ev	ening	Leq I	Vight		Ldn	(CNEL
Autos:	67	.8	66.9		64.8		62.	8	70.	0	70.3
Medium Trucks:	69	.3	68.6		62.2		64.	6	71.	7	71.8
Heavy Trucks:	66	.3	66.0		59.7		60.	4	67.	9	68.1
Vehicle Noise:	72	.8	72.1		67.5		67.	7	74.	9	75.1
Centerline Distand	e to Noise Co	ontour (in feet)								
			L	70 d	BA	65 c	IBA -	6	60 dBA	5	5 dBA
		-	Ldn:		93		201		433	3	933
		C	NEL:		96		208	3	447	r	964

Monday, October 2, 2023

	FHWA-R	D-77-108 HIGH	WAY NO	DISE F	PREDIC	TION MO	ODEL (S	9/12/2	021)		
Scenar Road Nan	rio: OYC ne: Casmalia A	Av.				Project I Job Nu	Name: \ Imber: 1	/ineya 15533	ard Av. War	ehouse	
Road Segme	nt: w/o Locust	Av.									
SITE	SPECIFIC I	NPUT DATA				N	OISE N	IODE		s	
Highway Data				S	ite Con	ditions (Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt):	14,958 vehicle	es					Autos:	15		
Peak Hour	Percentage:	7.17%			Me	dium Tru	cks (2 A	(xles)	15		
Peak H	lour Volume:	1,072 vehicle	s		He	avy Truc	ks (3+ A	xles).	15		
Ve	hicle Speed:	55 mph		V	ehicle I	Nix					
Near/Far La	ne Distance:	36 feet			Vehi	icleType		Day	Evening	Night	Daily
Site Data						A	utos:	69.3%	6 10.6%	20.1%	88.81%
Ba	rrier Height:	0.0 feet			Me	edium Tru	ucks:	73.8%	6 4.2%	22.1%	10.83%
Barrier Type (0-V	Vall, 1-Berm):	0.0			ŀ	leavy Tru	ucks:	79.1%	6 4.7%	16.3%	0.36%
Centerline D	ist. to Barrier:	44.0 feet		N	oise So	urce Ele	evations	s (in f	eet)		
Centerline Dist.	to Observer:	44.0 feet				Autos	: 0.0	000			
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks	: 2.2	297			
Observer Height	(Above Pad):	5.0 feet			Heav	y Trucks	: 8.0	004	Grade Adj	iustment	: 0.0
P	ad Elevation:	0.0 feet			ane Fai	uivalent	Distanc	e (in	feet)		
10	Road Grade	0.0%		_		Autos	: 40.4	460			
	Left View:	-90.0 degre	25		Mediur	n Trucks	: 40.1	241			
	Right View:	90.0 degre	es		Heav	y Trucks	: 40.3	262			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distar	nce	Finite	Road	Fresn	el	Barrier Atte	en Ber	m Atten
Autos:	71.78	-2.92		1.28		-1.20		-4.61	0.0	000	0.000
Medium Trucks:	82.40	-12.06		1.31		-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	86.40	-26.84		1.31		-1.20		-5.50	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier a	attenu	ation)						
VehicleType	Leq Peak Ho	ur Leq Day	/ L	eq Eve	ening	Leq N	Vight		Ldn	CI	NEL
Autos:	68	3.9	68.0		65.9		63.9		71.1	1	71.4
Medium Trucks:	70).5	69.8		63.3		65.8		72.9	9	73.0
Heavy Trucks:	55	9.7	59.3 72.2		53.0		53.7		61.2	2	61.4 75.5
venicie noise.	15	5.0	12.2		07.9		00.1		15.2	2	75.5
Centerline Distan	ce to Noise C	ontour (in feet)	70 di	24	65.0	ID A		60 dBA	55	dBA
			I dn:	10 00	00	05 0	212	L '	156	- 55	092
		С	NEL:		102		212		430		1.016
					.02		215		472		.,010

	FHWA-RD	0-77-108 HIGH	WAY	NOISE	PREDIC	TION M	ODEL (9	9/12/2	021)		
Scenario Road Name	: OYC+P : Casmalia A	v.				Project Job Ni	Name: \ umber: `	/ineya 5533	rd Av. Wa	rehouse	
Road Segment	w/o Locust	Av.									
SITE S	PECIFIC IN	PUT DATA				N	OISE N	IODE	L INPUT	s	
Highway Data				s	ite Con	ditions ('Hard =	10, So	oft = 15)		
Average Daily T	raffic (Adt):	15,382 vehicle	es				,	Autos:	15		
Peak Hour P	Percentage:	7.17%			Me	dium Tru	cks (2 A	xles):	15		
Peak Ho	ur Volume:	1,103 vehicle	s		He	avy Truc	ks (3+ A	xles):	15		
Veh	icle Speed:	55 mph		v	ehicle l	Nix					
Near/Far Lane	e Distance:	36 feet		F	Veh	cleType		Day	Evening	Night	Daily
Site Data						A	utos:	69.3%	10.6%	20.1%	87.719
Barr	ier Heiaht:	0.0 feet			M	edium Tr	ucks:	73.8%	4.2%	22.1%	10.58%
Barrier Type (0-Wa	II, 1-Berm):	0.0			ŀ	leavy Tr	ucks:	79.1%	4.7%	16.3%	1.719
Centerline Dist	to Barrier:	44.0 feet			loiso Se	urco Ek	wation	(in f	nof)		
Centerline Dist. to	Observer:	44.0 feet		-	0136 00	Autos	. 0.0	000			
Barrier Distance to	Observer:	0.0 feet			Mediu	n Trucks	. 0.0	997			
Observer Height (A	bove Pad):	5.0 feet			Heav	v Trucks	: 8.0	004	Grade Ad	justment	: 0.0
Pad	d Elevation:	0.0 feet		-							
Road	d Elevation:	0.0 feet		1	ane Eq	livalent	Distanc	e (in	feet)		
R	oad Grade:	0.0%			Madia	Autos	40.4	160			
	Left View:	-90.0 degree	es		Mediui	TI Trucks	40.	241			
	Right view.	90.0 degre	25		Ticav	y mucha	. 40.	202			
FHWA Noise Model	Calculations	5									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresn	el	Barrier Att	en Bei	m Atten
Autos:	71.78	-2.85		1.28		-1.20		-4.61	0.0	000	0.00
Medium Trucks:	82.40	-12.04		1.31		-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	86.40	-19.95		1.31		-1.20		-5.50	0.0	000	0.00
Unmitigated Noise	Levels (witho	out Topo and	barri	er attenu	uation)						
VehicleType L	eq Peak Hou	r Leq Day	<i>,</i>	Leq Ev	ening	Leq I	Vight		Ldn	С	NEL
Autos:	69.	.0	68.1		65.9		63.9		71.	1	71.
Medium Trucks:	70.	.5	69.8		63.3		65.8		72.9	9	73.
Heavy Trucks:	66.	.6	66.2		59.9		60.6		68.	1	68.
Vehicle Noise:	73.	.7	73.0		68.5		68.7		75.	9	76.
Centerline Distance	e to Noise Co	ntour (in feet)								
				70 d	BA	65 0	<i>IBA</i>	6	60 dBA	55	dBA
			Ldn:		109		234		505		1,087
		<u> </u>					242		E01		4 4 9 9

	FHWA-RD-	77-108 HIGHW	AY NOISE	PREDIC	TION MO	DDEL (9	/12/20	021)		
Scenar Road Nan Road Segme	rio: HY ne: Casmalia Av nt: w/o Locust A	v.			Project I Job Nu	Vame: \ mber: 1	'ineya 5533	rd Av. War	ehouse	
SITE	SPECIFIC IN	PUT DATA			N	DISE N	ODE		5	
Highway Data				Site Con	ditions (Hard =	10, So	oft = 15)		
Average Daily	Traffic (Adt):	19,797 vehicles				A	utos:	15		
Peak Hour	Percentage:	7.17%		Me	dium Tru	cks (2 A	xles):	15		
Peak F	lour Volume:	1,419 vehicles		He	avy Truci	ks (3+ A	xles):	15		
Ve	ehicle Speed:	55 mph	ŀ	Vehicle I	Mix					
Near/Far La	ne Distance:	36 feet		Veh	icleType	1	Day	Evening	Night	Daily
Site Data					A	utos:	59.3%	10.6%	20.1%	88.819
Ba	rrier Height	0.0 feet		M	edium Tru	icks:	73.8%	4.2%	22.1%	10.83%
Barrier Type (0-V	Vall, 1-Berm):	0.0		I	Heavy Tru	icks:	79.1%	4.7%	16.3%	0.36%
Centerline D	ist. to Barrier:	44.0 feet		Noise So	ource Ele	vations	(in fe	et)		
Centerline Dist.	to Observer:	44.0 feet			Autos	: 0.0	00	,		
Barrier Distance	to Observer:	0.0 feet		Mediu	m Trucks	2.2	97			
Observer Height	(Above Pad):	5.0 feet		Heav	v Trucks	8.0	04	Grade Adj	ustment	0.0
P	ad Elevation:	0.0 feet	-							
Ro	ad Elevation:	0.0 feet	-	Lane Eq	uivaient	Distanc	e (IN 1	eet)		
	Road Grade:	0.0%		Martin	Autos.	40.4	00			
	Left View: Right View:	-90.0 degrees 90.0 degrees		Heav	т Trucks. vy Trucks.	: 40.2 : 40.2	41 62			
FHWA Noise Mod	el Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite	Road	Fresn	e/	Barrier Atte	en Ber	m Atten
Autos:	71.78	-1.70	1.2	28	-1.20		4.61	0.0	000	0.00
Medium Trucks:	82.40	-10.84	1.3	31	-1.20		4.87	0.0	000	0.00
Heavy Trucks:	86.40	-25.62	1.3	81	-1.20		5.50	0.0	000	0.00
Unmitigated Nois	e Levels (witho	ut Topo and ba	rrier atter	nuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq E	vening	Leq N	light		Ldn	CI	VEL
Autos:	70.	2 69	.2	67.1		65.1		72.3	3	72.
Medium Trucks:	71.	7 71.	.0	64.5		67.0		74.1		74.
Heavy Trucks:	60.	9 60.	.5	54.2		54.9		62.4	•	62.
Vehicle Noise:	74.:	2 73.	.4	69.1		69.3		76.5)	76.
Centerline Distan	ce to Noise Col	ntour (in feet)	70	dBA	65 d	DA.	6	OdRA	55	dBA
		ام ا		110	000	255	0	IU UDA	35	1 100
		La	<i>u</i> .	119		255		550		1,185
		CNE		100		264		660		1 0 0 6

	FHWA-RD	-//-108 HIGHV	VAYN	DISE	PREDIC	TION MC	DDEL (9/12/2	J21)		
Scenar	io: HY+P					Project I	Vame: \	Vineya	rd Av. Wa	rehouse	
Road Nam	ne: Casmalia Av	r.				Job Nu	mber:	15533			
Road Segme	nt: w/o Locust A	w.									
SITE	SPECIFIC INI	PUT DATA				N	DISE	IODE		s	
Highway Data				5	Site Cond	ditions (l	Hard =	10, So	oft = 15)		
Average Daily	Traffic (Adt):	20,221 vehicles	6					Autos:	15		
Peak Hour	Percentage:	7.17%			Med	dium Tru	cks (2 A	Axles):	15		
Peak H	lour Volume:	1,450 vehicles			Hea	avy Truck	ks (3+ A	Axles):	15		
Ve	hicle Speed:	55 mph		V	/ehicle N	lix					
Near/Far La	ne Distance:	36 feet			Vehi	cleType		Day	Evening	Night	Daily
Site Data						A	utos:	69.3%	10.6%	20.1%	87.97%
Ba	rrier Height	0.0 feet			Me	dium Tru	icks:	73.8%	4.2%	22.1%	10.64%
Barrier Type (0-W	/all, 1-Berm):	0.0			H	leavy Tru	icks:	79.1%	4.7%	16.3%	1.39%
Centerline Di	st. to Barrier:	44.0 feet			Voise So	urce Ele	vation	s (in fe	et)		
Centerline Dist.	to Observer:	44.0 feet		-		Autos	0	000			
Barrier Distance	to Observer:	0.0 feet			Mediun	n Trucks	2	297			
Observer Height ((Above Pad):	5.0 feet			Heav	v Trucks	8.	004	Grade Ad	iustment	: 0.0
Pa	ad Elevation:	0.0 feet			nour.	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	0.				
Roa	ad Elevation:	0.0 feet		L	ane Equ	ivalent l	Distand	ce (in i	feet)		
1	Road Grade:	0.0%				Autos.	40.	460			
	Left View:	-90.0 degrees	5		Mediun	n Trucks.	40.	241			
	Right View:	90.0 degrees	5		Heav	y Trucks.	40.	262			
FHWA Noise Mode	el Calculations										
VehicleType	REMEL	Traffic Flow	Distar	nce	Finite	Road	Fresn	el	Barrier Att	en Bei	rm Atten
Autos:	71.78	-1.65		1.28	3	-1.20		-4.61	0.0	000	0.000
Medium Trucks:	82.40	-10.83		1.31	1	-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	86.40	-19.67		1.31	1	-1.20		-5.50	0.0	000	0.000
Unmitigated Noise	e Levels (witho	ut Topo and b	arrier a	atteni	uation)						
VehicleType	Leq Peak Hour	· Leq Day	L	eq Ev	/ening	Leq N	light		Ldn	С	NEL
Autos:	70.:	26	9.3		67.1		65.1		72.3	3	72.7
Medium Trucks:	71.	7 7	1.0		64.5		67.0)	74.1	1	74.2
Heavy Trucks:	66.	86	i6.5		60.2		60.9)	68.4	1	68.6
Vehicle Noise:	74.	в 7	4.1		69.6		69.8	3	77.0)	77.2
Centerline Distant	ce to Noise Col	ntour (in feet)									
				70 d	iBA	65 d	BA	6	60 dBA	55	dBA
		L	.dn:		128		276		594		1,281
		CN	EL:		132		285		614		1,322

Monday, October 2, 2023

	FHWA-RI	D-77-108 HIGH	WAY NO	ISE F	REDIC		DDEL (S	9/12/2	021)		
Scenar Road Nan Road Segme	rio: E ne: Casmalia A nt: e/o Locust	Av.				Project I Job Nu	Vame: \ imber: 1	/ineya 15533	ard Av. Wa	rehouse	
SITE	SPECIFIC IN	IPUT DATA				N	OISE N	IODE	L INPUT	s	
Highway Data				Si	ite Con	ditions (Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt):	7,843 vehicle	es		Me	dium Tru) cks (2 4	Autos:	15		
Peak H	lour Volume:	562 vehicle	-		He	avy Truci	ks (3+ 4	(yles)	15		
Ve	hicle Sneed	55 mph	3				10 10 . 7		10		
Near/Far La	ne Distance:	36 feet		Ve	ehicle I	Aix			1 1		
riouirr ur Eu	nio Biotanioo.	001000			Vehi	cleType		Day	Evening	Night	Daily
Site Data				_		A	utos:	69.3%	5 10.6%	20.1%	88.81%
Ba	rrier Height:	0.0 feet			Me	aium Tru	JCKS:	73.8%	6 4.2%	22.1%	10.83%
Barrier Type (0-V	Vall, 1-Berm):	0.0			F	ieavy In	JCKS:	79.1%	6 4.7%	16.3%	0.36%
Centerline Di	ist. to Barrier:	44.0 feet		N	oise So	urce Ele	vations	s (in f	eet)		
Centerline Dist.	to Observer:	44.0 feet				Autos.	: 0.0	000	,		
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks	: 2.2	297			
Observer Height	(Above Pad):	5.0 feet			Heav	y Trucks	: 8.0	004	Grade Ad	justmen	t: 0.0
P	ad Elevation:	0.0 feet					D:		£ 43		
Ro	ad Elevation:	0.0 feet		La	ane Equ	livalent	Distanc	e (In	reet)		
	Road Grade:	0.0%			Madin	Autos.	: 40.4	160			
	Left View:	-90.0 degree	es		Mediur	n Trucks.	: 40.4	241			
	Right View:	90.0 degree	es		Heav	y Trucks.	: 40.4	202			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distan	ce	Finite	Road	Fresn	el	Barrier Att	en Be	rm Atten
Autos:	71.78	-5.72		1.28		-1.20		-4.61	0.0	000	0.000
Medium Trucks:	82.40	-14.86		1.31		-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	86.40	-29.65		1.31		-1.20		-5.50	0.0	000	0.000
Unmitigated Noise	e Levels (with	out Topo and	barrier a	ttenu	ation)						
VehicleType	Leq Peak Hou	ur Leq Day	Le	q Eve	ening	Leq N	light		Ldn	С	NEL
Autos:	66	5.1	65.2		63.1		61.1		68.3	3	68.6
Medium Trucks:	67	.7	67.0		60.5		63.0		70.	1	70.2
Heavy Trucks:	56	6.9	56.5		50.2		50.9		58.4	4	58.6
Vehicle Noise:	70	0.2	69.4		65.1		65.3		72.4	4	72.6
Centerline Distan	ce to Noise Co	ontour (in feet)					r		T	
				70 dE	ЗA	65 d	BA		60 dBA	55	dBA
		-	Ldn:		64		138		297		639
		C	VEL:		66		142		307		661

Scenario: E+ Road Name: Ca Road Segment: elo SITE SPEC Highway Data Average Daily Traffic Peak Hour Verice Peak Hour Vehicle S Near/Far Lane Dis Site Data Barrier H	P smalia A Locust A SIFIC IN (Adt): (Adt): (Adt): (antage: olume: Speed: stance:	v. Av. PUT DATA 7,939 vehicle 7.17% 569 vehicle: 55 mph	es		Site Con	Project Job No N	Name: umber: OISE I	Vineya 15533 MODE	Ind Av. War	rehouse S	
SITE SPEC Highway Data Average Daily Traffic Peak Hour Vic Peak Hour Vic Vehicle t Near/Far Lane Dis Site Data Barrier H	c (Adt): (Adt): entage: olume: Speed: stance:	PUT DATA 7,939 vehicle 7.17% 569 vehicles 55 mph	es		Site Con	N	OISE	NODE		S	
Highway Data Average Daily Traffic Peak Hour Verece Peak Hour V Vehicle & Near/Far Lane Dis Site Data Barrier H	: (Adt): intage: olume: Speed: stance:	7,939 vehicle 7.17% 569 vehicle 55 mph	es		Site Con	ditions	Hard -			•	
Average Daily Traffic Peak Hour Perce Peak Hour V Vehicle S Near/Far Lane Dis Site Data Barrier H	: (Adt): ntage: olume: Speed: stance:	7,939 vehicle 7.17% 569 vehicle 55 mph	es			unuons (nara =	10, Sc	oft = 15)		
Near/Far Lane Dis Site Data Barrier H	tance:		s		Me He	dium Tru avy Truc Mix	cks (2 . ks (3+ .	Autos: Axles): Axles):	15 15 15		
Site Data Barrier H		36 feet		ŀ	Veh	icleTvne		Dav	Evenina	Niaht	Daily
Barrier H					1011	A	utos:	69.3%	10.6%	20.1%	88.94%
Durrier	loiaht.	0.0 feet			M	edium Tr	ucks:	73.8%	4.2%	22.1%	10.70%
Barrier Type (0-Wall, 1-	Berm):	0.0			F	leavy Tr	ucks:	79.1%	4.7%	16.3%	0.36%
Centerline Dist. to E	Barrier:	44.0 feet		-	Noise Sr	urce El	vation	e (in fi	aat)		
Centerline Dist. to Ob Barrier Distance to Ob Observer Height (Above	server: server: e Pad):	44.0 feet 0.0 feet 5.0 feet		-	Mediui Heav	Autos m Trucks v Trucks	: 0. : 2.	000 297 004	Grade Ad	iustment	: 0.0
Pad Ele	vation:	0.0 feet		-							
Road Ele	vation:	0.0 feet		-	Lane Eq	uivalent	Distan	ce (in i	feet)		
Road Lef Righ	Grade: t View: t View:	0.0% -90.0 degree 90.0 degree	es es		Mediui Heav	m Trucks y Trucks	: 40 : 40 : 40	460 241 262			
FHWA Noise Model Cal	culations	;									
VehicleType RE	MEL	Traffic Flow	Di	stance	Finite	Road	Fresi	nel	Barrier Att	en Ber	m Atten
Autos:	71.78	-5.66		1.2	28	-1.20		-4.61	0.0	000	0.00
Medium Trucks:	82.40	-14.86		1.3	31	-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	86.40	-29.65		1.3	31	-1.20		-5.50	0.0	000	0.00
Unmitigated Noise Leve	els (witho	out Topo and	barri	er atter	nuation)						
VehicleType Leq F	Peak Hou	r Leq Day	/	Leq E	vening	Leq I	Vight		Ldn	CI	VEL
Autos:	66.	2	65.3		63.1		61.	1	68.3	3	68.
Medium Trucks:	67.	.7	67.0		60.5		63.	D	70.1	1	70.
Heavy Trucks:	56.	9	56.5		50.2		50.	9	58.4	1	58.0
Vehicle Noise:	70.	2	69.4		65.2		65.	3	72.	ō	72.
Centerline Distance to I	Voise Co	ntour (in feet,)								
			1.1.1	70	ara o :	65 0	IBA	1 6	о ава	55	ава
		CI	Lan: NEL:		64 66		138 143		298 308		642 663

	FHWA-RI	0-77-108 HIGH	WAY	NOISE	PREDIC	TION M	ODEL	(9/12/2	021)		
Scenai Road Nan Road Segme	rio: OYC ne: Casmalia A nt: e/o Locust	.v. Av.				Project Job N	Name: umber:	Vineya 15533	ard Av. War	rehouse	
SITE	SPECIFIC IN	IPUT DATA				N	IOISE	MODE		s	
Highway Data					Site Con	ditions	(Hard :	= 10, S	oft = 15)		
Average Daily	Traffic (Adt):	10,722 vehicle	es					Autos	15		
Peak Hour	Percentage:	7.17%			Med	dium Tru	ucks (2	Axles)	15		
Peak H	lour Volume:	769 vehicles	s		Hea	avy Truc	cks (3+	Axles)	15		
Ve	ehicle Speed:	55 mph		ŀ	Vehicle N	lix					
Near/Far La	ne Distance:	36 feet		ŀ	Vehi	cleType		Day	Evening	Night	Daily
Site Data						A	Autos:	69.3%	6 10.6%	20.1%	88.81%
Ba	rrier Height	0.0 feet			Me	dium Ti	rucks:	73.8%	6 4.2%	22.1%	10.83%
Barrier Type (0-V	Vall, 1-Berm):	0.0			H	leavy Tr	rucks:	79.1%	6 4.7%	16.3%	0.36%
Centerline D	ist. to Barrier:	44.0 feet		-	Noise So	urco El	ovatio	ne (in f	oof)		
Centerline Dist.	to Observer:	44.0 feet		ŀ	10/30 00	Auto	e • u i oi	000			
Barrier Distance	to Observer:	0.0 feet			Modiur	n Trucki	s. u	207			
Observer Height	(Above Pad):	5.0 feet			Heav	v Truck	з. 2 с Я	004	Grade Ad	iustment	0.0
P	ad Elevation:	0.0 feet				, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	J. C				
Ro	ad Elevation:	0.0 feet		-	Lane Equ	iivalent	Distar	ice (in	feet)		
	Road Grade:	0.0%				Autos	s: 40	.460			
	Left View:	-90.0 degree	es		Mediur	n Trucks	s: 40	.241			
	Right View:	90.0 degree	es		Heav	y Trucks	s: 40	.262			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fres	nel	Barrier Att	en Ber	rm Atten
Autos:	71.78	-4.37		1.2	28	-1.20		-4.61	0.0	000	0.000
Medium Trucks:	82.40	-13.50		1.3	31	-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	86.40	-28.29		1.3	81	-1.20		-5.50	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barri	er atter	nuation)						
VehicleType	Leq Peak Hou	ir Leq Day	1	Leq E	vening	Leq	Night		Ldn	C	NEL
Autos:	67	.5	66.5		64.4		62	.4	69.6	3	70.0
Medium Trucks:	69	.0	68.3		61.9		64	.4	71.4	1	71.5
Heavy Trucks:	58	.2	57.8		51.6		52	2	59.8	3	60.0
Vehicle Noise:	71	.5	70.8		66.5		66	7	73.8	3	74.0
Centerline Distan	ce to Noise Co	ontour (in feet))								
				70	dBA	65 (dBA		60 dBA	55	dBA
			Ldn:		79		17	D	366		788
								-	070		014

	FHWA-RD	-77-108 HIGHW	AY NOISE	E PREDIC	TION M	ODEL (S	9/12/2	021)			
Scenan Road Nam Road Segmei	io: OYC+P e: Casmalia A nt: e/o Locust A	v. Av.			Project Job Ni	Name: \ umber: 1	/ineya I5533	ard Av. Wa	ireho	use	
SITE	SPECIFIC IN	PUT DATA			N	OISE N	IODE	L INPUT	s		
Highway Data				Site Con	ditions ('Hard =	10, So	oft = 15)			
Average Daily	Traffic (Adt):	10,818 vehicles					Autos:	15			
Peak Hour	Percentage:	7.17%		Me	dium Tru	cks (2 A	xles):	15			
Peak H	our Volume:	776 vehicles		He	avy Truc	ks (3+ A	xles):	15			
Ve	hicle Speed:	55 mph		Vohiclo	<i>liv</i>						
Near/Far La	ne Distance:	36 feet		Venicie i			Dav	Evening	Nie	aht	Daily
Sito Data				veni	cie i ype	utor	60.2%	10.6%	20	196	00 01%
Sile Dala				M	n dium Tr	ucks:	73.8%	5 10.0%	20	2 1%	10 74%
Bai	rier Height:	0.0 feet		, vic	leavy Tr	ucks:	70.1%	5 4.2%	16	33%	0.36%
Barrier Type (0-W	all, 1-Berm):	0.0		'	icavy in	ucho.	15.17	4.170		1.070	0.0070
Centenine Dis	st. to Barrier:	44.0 feet		Noise So	urce Ele	evations	s (in fe	eet)			
Centerline Dist.	to Observer:	44.0 feet			Autos	: 0.0	000				
Observer Height	Above Bedly	0.0 feet		Mediur	n Trucks	: 2.2	297				
	ADOVE Fau).	5.0 feet		Heav	y Trucks	: 8.0	004	Grade Ad	djustr	nent:	0.0
Por	d Elevation:	0.0 feet		Lane Fo	ivalent	Distanc	e (in	feet)			
1.00	Road Grade:	0.0 1001		Lano Lqu	Autos	. 404	160				-
,	Left View:	0.0 /0 dogroop		Mediu	n Trucks	. 40 1	241				
	Right View:	=30.0 degrees		Heav	v Trucks	. 40.2	262				
	rught thom.	50.0 degrees			,		-02				
FHWA Noise Mode	el Calculations	1									
VehicleType	REMEL	Traffic Flow	Distance	Finite	Road	Fresn	el	Barrier At	ten	Bern	n Atten
Autos:	71.78	-4.32	1.2	28	-1.20		-4.61	0.	.000		0.000
Medium Trucks:	82.40	-13.50	1.3	31	-1.20		-4.87	0.	.000		0.000
Heavy Trucks:	86.40	-28.29	1.3	31	-1.20		-5.50	0.	000		0.000
Unmitigated Noise	e Levels (witho	out Topo and ba	rrier attei	nuation)							
VehicleType	Leq Peak Hou	r Leq Day	Leg E	vening	Leq I	Vight		Ldn		CN	IEL
Autos:	67.	5 66.	.6	64.5		62.5	i	69.	.7		70.0
Medium Trucks:	69.	.0 68.	.3	61.9		64.4		71.	.4		71.5
Heavy Trucks:	58.	2 57.	.8	51.6		52.2		59.	.8		60.0
Vehicle Noise:	71.	.6 70.	.8	66.5		66.7		73.	.8		74.0
Centerline Distance	e to Noise Co	ntour (in feet)									
			70	dBA	65 c	<i>IBA</i>	6	50 dBA	Т	55 c	dBA
		Ldi	n:	79		170		36	6		790
		CNE	L:	82		176		379	Э		816

Monday, October 2, 2023

FHWA-R	D-77-108 HIGH	WAY	NOISE	PREDIC	TION M	ODEL (S)/12/2	021)		
Scenario: HY Road Name: Casmalia Road Segment: e/o Locusi	Av. t Av.				Project Job N	Name: \ umber: 1	/ineya 5533	ard Av. War	ehouse	1
SITE SPECIFIC I	NPUT DATA				N	OISE N	IODE	L INPUTS	5	
Highway Data				Site Con	ditions	(Hard =	10, So	oft = 15)		
Average Daily Traffic (Adt): Peak Hour Percentage: Peak Hour Volume:	12,106 vehicle 7.17% 868 vehicles	es S		Med Hea	dium Tri avy Truc	/ ucks (2 A cks (3+ A	Autos: xles): xles):	15 15 15		
Vehicle Speed:	55 mph		1	Vehicle N	lix					
Near/Far Lane Distance:	36 feet		F	Vehi	cleTvpe		Dav	Evenina	Niaht	Dailv
Site Data					1	Autos:	69.3%	10.6%	20.19	6 88.81%
Barrier Height:	0.0 feet			Me	dium Ti	ucks:	73.8%	4.2%	22.19	6 10.83%
Barrier Type (0-Wall, 1-Berm);	0.0			H	leavy Ti	ucks:	79.1%	4.7%	16.3%	6 0.36%
Centerline Dist. to Barrier:	44.0 feet		-	Naisa Sa	urco El	ovations	(in f	nof)		
Centerline Dist. to Observer:	44.0 feet		-	10136 30	Auto		000	eeij		
Barrier Distance to Observer:	0.0 feet			Modiur	n Truck	s. 0.0	00			
Observer Height (Above Pad):	5.0 feet			Heav	v Truck	5. 2.2 N Q (04	Grade Adi	ustman	t. 0.0
Pad Elevation:	0.0 feet			neav	y mack.	J. 0.0		0/000/10/	aounon	. 0.0
Road Elevation:	0.0 feet		1	Lane Equ	iivalent	Distanc	e (in	feet)		
Road Grade:	0.0%				Auto	s: 40.4	460			
Left View:	-90.0 degree	s		Mediur	n Truck	s: 40.2	241			
Right View:	90.0 degree	es		Heav	y Truck	s: 40.2	262			
FHWA Noise Model Calculation	ns									
VehicleType REMEL	Traffic Flow	Dis	tance	Finite	Road	Fresn	e/	Barrier Atte	en Be	rm Atten
Autos: 71.78	3 -3.84		1.2	8	-1.20		4.61	0.0	00	0.000
Medium Trucks: 82.40	-12.98		1.3	1	-1.20		-4.87	0.0	00	0.000
Heavy Trucks: 86.40	-27.76		1.3	1	-1.20		-5.50	0.0	00	0.000
Unmitigated Noise Levels (with	hout Topo and	barrie	r atten	uation)						
VehicleType Leq Peak Ho	our Leq Day		Leg E	vening	Leq	Night		Ldn	C	NEL
Autos: 6	8.0	67.1		64.9		63.0		70.1		70.5
Medium Trucks: 6	9.5	68.9		62.4		64.9		71.9)	72.1
Heavy Trucks: 5	8.7	58.4		52.1		52.8		60.3	;	60.5
Vehicle Noise: 7	2.1	71.3		67.0		67.2		74.3		74.
Centerline Distance to Noise C	Contour (in feet)									
			70 0	dBA	65	dBA	(60 dBA	5	5 dBA
		Ldn:		85		184		396		854
	CI	VEL:		88		190		410		882

Scenario Bood Norm	o: HY+P					Project	Name: \	/ineya	ird Av. Wai	ehouse	
Road Name	e: Casmalia Av	/. 				JOD IN	umber:	10033			
Road Segmen	L. e/o Locust A	w.									
SITE S	SPECIFIC IN	PUT DATA				N	OISE	IODE	L INPUT	5	
Highway Data					Site Con	ditions (Hard =	10, So	oft = 15)		
Average Daily	Traffic (Adt):	12,202 vehicle	s					Autos:	15		
Peak Hour I	Percentage:	7.17%			Mee	dium Tru	icks (2 A	(xles)	15		
Peak He	our Volume:	875 vehicles	6		Hei	avy Truc	:ks (3+ A	(xles)	15		
Vel	nicle Speed:	55 mph			Vehicle N	lix					
Near/Far Lar	ne Distance:	36 feet			Vehi	cleTvpe		Dav	Evenina	Niaht	Dailv
Site Data						A	utos:	69.3%	10.6%	20.1%	88.89
Bar	rier Height:	0.0 feet			Me	dium Tr	ucks:	73.8%	4.2%	22.1%	10.75
Barrier Type (0-W	all_1-Berm):	0.0			F	leavy Tr	ucks:	79.1%	4.7%	16.3%	0.36
Centerline Dis	t. to Barrier:	44.0 feet		-	Naiaa C-			. (in f	n (1		
Centerline Dist. t	o Observer:	44.0 feet		-	NOISE SO	urce Ele	evations	s (in te	eet)		
Barrier Distance t	o Observer:	0.0 feet			Marthur	Autos	. 0.0	000			
Observer Height ()	Above Pad):	5.0 feet			Heave	Trucks	. 2.4	297	Grade Ad	iustmont	
Pa	d Elevation:	0.0 feet			Ticav	y mucka	. 0.0	504	Orade Auj	usunem	0.0
Roa	d Elevation:	0.0 feet			Lane Equ	iivalent	Distanc	e (in :	feet)		
F	Road Grade:	0.0%				Autos	: 40.4	460			
	Left View:	-90.0 degree	es		Mediur	n Trucks	: 40.1	241			
	Right View:	90.0 degree	es		Heav	y Trucks	: 40.1	262			
FHWA Noise Mode	I Calculations										
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresn	el	Barrier Att	en Ber	m Atten
Autos:	71.78	-3.80		1.2	28	-1.20		-4.61	0.0	000	0.00
Medium Trucks:	82.40	-12.98		1.3	1	-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	86.40	-27.76		1.3	11	-1.20		-5.50	0.0	000	0.00
Unmitigated Noise	Levels (witho	ut Topo and	barri	er atter	nuation)						
VehicleType	Leq Peak Hou	 Leq Day 	r	Leq E	vening	Leq I	Vight		Ldn	C	NEL
Autos:	68.	1	67.1		65.0		63.0)	70.2	2	70
Medium Trucks:	69.	5	68.9		62.4		64.9		71.9)	72
Heavy Trucks:	58.	1	58.4		52.1		52.8	1	60.3	5	60.
venicle Noise:	72.	1	/1.3		67.0		67.2		74.3	5	74
Centerline Distanc	e to Noise Co	ntour (in feet))	70	dBA	65 (HRΔ		SO dBA	55	dBA
			I dn'	70	86	001	19/		207	55	00A 95
			_un.		00		104		397		00

APPENDIX 9.1:

REFERENCE NOISE MEASUREMENT WORKSHEETS



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Short-Term Noise Level Measurement Summary							
Reference Source:	Loading Dock Activity (Dry Goods)	JN: 15533	Measurement Time (hh:mm:ss)				
Measurement Location:	Motivational Fullfillment and Logistics Services,	Analyst: B. Lawson	Start	Stop	Duration		
	6810 Bickmore Avenue, Chino	Date: 1/7/2015	10:45:46 AM	11:00:46 AM	0:15:00		

Sound Level Meter: Larson Davis LxT

Noise Source: The noise level measurements represent the typical weekday dry goods logistics warehouse operation in a single building with a loading dock area along the western side of the building façade. Up to ten active trucks were observed in the loading dock area including a combination of track trailer semi-trucks, two-axle delivery trucks, and background forklift operations.













Short-Term Noise Level Measurement Summary							
Reference Source:	Loading Dock Activity (Dry Goods)	JN:	15533	Measurement Time (hh:mm:ss)			
Measurement Location:	Walmart at 170 Town Center Parkway in the	Analyst:	B. Lawson	Start	Stop	Duration	
	City of Santee	Date:	7/27/2015			96 Hours	
Sound Level Meter:	Piccolo 1 SLM						

Noise Source: the noise level measurements describe a single mechanical roof-top air conditioning unit on the roof of the existing Walmart store. The reference noise level represents a Lennox SCA120 series 10-ton model packaged air conditioning unit. At a distance of 5 feet from the roof-top air conditioning unit, the exterior noise levels were measured at 77.2 dBA Leq with a peak maximum noise level of 78.2 dBA Lmax. Based on the typical operating conditions observed over a four-day measurement period, the roof-top air conditioning units are estimated to operate for 39 minutes during the daytime, 35 minutes during the evening, and 28 minutes during the nighttime hours.



57.7

56.1





54.4

31.8

29.7







Short-Term Noise Level Measurement Summary							
Reference Source:	Parking Lot Vehicle Movement	JN:	15533	Measurement Time (hh:mm:ss)			
Measurement Location:	Amazon Employee Parking Lot at 3611 S	Analyst:	B. Lawson	Start	Stop	Duration	
	Northpointe Drive, Fresno	Date:	1/6/2021			29 Hours	
Sound Level Meter:	Piccolo 2 SLM						

Noise Source: To describe the on-site parking lot activity, a long-term 29-hour reference noise level measurement was collected in the center of activity within the staff parking lot of a warehouse distribution center. At 50 feet from the center of activity, the parking lot produced a reference noise level of 52.6 dBA Leq. The parking lot noise levels are mainly due to cars pulling in and out of parking spaces in combination with car doors opening and closing













Short-Term Noise Level Measurement Summary								
Reference Source:	Trash Enclosure Activity	JN: 15533	Measurement Time (hh:mm:ss)					
Measurement Location:	250 Baker Street Business Park, Costa Mesa	Analyst: B. Lawson	Start	Stop	Duration			
		Date: 5/3/2018	5:26:00 PM		32 Seconds			

Sound Level Meter: Larson Davis LxT

Noise Source: The trash enclosure noise levels describe metal gates opening and closing, metal scraping against concrete floor sounds, dumpster movement on metal wheels, and trash dropping into the metal dumpster. The reference noise levels describe trash enclosure noise activities when trash is dropped into an empty metal dumpster. The measured reference noise level at the uniform 50-foot reference distance is 57.3 dBA Leq for the trash enclosure activity.








	Short-Term Noise Le	vel Measuremen	t Summary			
Reference Source:	Truck Movements	JN:	15533	Measur	ement Time (hh:	mm:ss)
Measurement Location:	Tejon Industrial Drive at Industrial Parkway	Analyst:	B. Lawson	Start	Stop	Duration
	Drive, Arvin.	Date:	7/28/2021	11:45:00 AM		24 Hours
Sound Level Meter:	Piccolo 2					

Noise Source: The truck movements reference noise level measurement was collected on Tejon Industrial Drive at the intersection of Industrial Parkway Drive. The truck movements at this location include the heavy tractor trailers truck movements associated with the Dollar General, Vision Media, and the IKEA distribution centers. Using the sixty highest one-minute measurements collected over a 24-hour period, the heavy trucks entering and exiting the outdoor loading dock area produced a reference noise level of 59.9 dBA Leg at 50 feet











APPENDIX 9.2:

OPERATIONAL NOISE CALCULATIONS



15533 - Vineyard Avenue Warehouse

CadnaA Noise Prediction Model: 15533-03.cna Date: 26.03.25 Analyst: B. Lawson

Calculation Configuration

Configura	tion
Parameter	Value
General	
Max. Error (dB)	0.00
Max. Search Radius (ft)	10000.00
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (ft)	3280.80
Min. Length of Section (ft)	3.30
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	5.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	1
Search Radius Src	328.08
Search Radius Rcvr	328.08
Max. Distance Source - Rcvr	3280.84 3280.84
Min. Distance Rvcr - Reflector	3.28 3.28
Min. Distance Source - Reflector	0.33
Industrial (ISO 9613 (1996))	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Incl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (°F)	50
rel. Humidity (%)	70
Ground Absorption G	0.50
Wind Speed for Dir. (mph)	6.7
Roads (TNM)	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

Receiver Noise Levels

Name	М.	ID		Level Lr		Lir	nit. Valı	Je		Land	Use	Height		Co	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	48.9	48.8	55.4	55.0	45.0	0.0				5.00	а	6211453.30	2361394.41	5.00
R2		R2	40.6	40.3	46.9	55.0	45.0	0.0				5.00	а	6211902.00	2361403.64	5.00
R3		R3	32.6	31.7	38.4	55.0	45.0	0.0				5.00	а	6212100.07	2360958.92	5.00
R4		R4	37.8	36.3	43.0	55.0	45.0	0.0				5.00	а	6212095.10	2360438.94	5.00

Partial Noise Levels

Name	Expression					P	artial Su	um Leve	el				
			R1			R2			R3			R4	
		Day	Night	CNEL	Day	Night	CNEL	Day	Night	CNEL	Day	Night	CNEL
DOCK	DOCK*	47.1	47.1	53.8	25.5	25.5	32.2	25.6	25.6	32.3	25.7	25.7	32.3
AC	AC*	35.8	33.4	40.0	32.7	30.3	37.0	29.2	26.8	33.4	36.1	33.7	40.3
CAR	CAR*	41.0	41.0	47.7	39.6	39.6	46.3	27.8	27.8	34.5	31.8	31.8	38.5
TRASH	TRASH*	31.8	27.8	34.8	10.8	6.9	13.8	9.6	5.6	12.6	12.3	8.3	15.3
TRUCK	TRUCK*	39.4	39.4	46.1	17.3	17.3	24.0	15.5	15.5	22.1	15.5	15.5	22.2

Point Source(s)

Name	М.	ID	R	esult. PW	'L		Lw/L	i	Op	erating Ti	ime	Height	t	Co	oordinates	
			Day	Evening	Night	Туре	Value	norm.	Day	Special	Night			Х	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE		AC01	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6211861.63	2360392.00	50.00
POINTSOURCE		AC02	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6211859.37	2360322.58	50.00
POINTSOURCE		AC03	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6211576.71	2361188.03	50.00
POINTSOURCE		AC04	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6211576.67	2361121.83	50.00
POINTSOURCE		CAR01	81.1	81.1	81.1	Lw	81.1					5.00	а	6211561.86	2360250.58	5.00

Name	М.	ID	R	esult. PW	'L		Lw/L	i	Ope	erating Ti	ime	Height	t	C	oordinates	
			Day	Evening	Night	Туре	Value	norm.	Day	Special	Night			Х	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE		CAR02	81.1	81.1	81.1	Lw	81.1					5.00	а	6211657.37	2360251.13	5.00
POINTSOURCE		CAR03	81.1	81.1	81.1	Lw	81.1					5.00	а	6211743.12	2360251.84	5.00
POINTSOURCE		CAR04	81.1	81.1	81.1	Lw	81.1					5.00	а	6211835.35	2360250.27	5.00
POINTSOURCE		CAR05	81.1	81.1	81.1	Lw	81.1					5.00	а	6211914.61	2360252.18	5.00
POINTSOURCE		CAR06	81.1	81.1	81.1	Lw	81.1					5.00	а	6211908.85	2361254.02	5.00
POINTSOURCE		CAR07	81.1	81.1	81.1	Lw	81.1					5.00	а	6211824.22	2361255.46	5.00
POINTSOURCE		CAR08	81.1	81.1	81.1	Lw	81.1					5.00	а	6211736.35	2361258.03	5.00
POINTSOURCE		CAR09	81.1	81.1	81.1	Lw	81.1					5.00	а	6211641.97	2361260.72	5.00
POINTSOURCE		CAR10	81.1	81.1	81.1	Lw	81.1					5.00	а	6211550.83	2361262.27	5.00
POINTSOURCE		CAR11	81.1	81.1	81.1	Lw	81.1					5.00	а	6211481.28	2361128.88	5.00
POINTSOURCE		CAR12	81.1	81.1	81.1	Lw	81.1					5.00	а	6211481.15	2361185.32	5.00
POINTSOURCE		CAR13	81.1	81.1	81.1	Lw	81.1					5.00	а	6211455.37	2361264.98	5.00
POINTSOURCE		TRASH01	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	а	6211405.92	2360781.77	5.00
POINTSOURCE		TRASH02	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	а	6211401.00	2360237.03	5.00

Line Source(s)

Name	М.	ID	R	esult. PW	'L	R	esult. PW	Ľ		Lw/L	i	Op	erating Ti	me		Moving	Pt. Src		Heig	۱t
			Day	Evening	Night	Day	Evening	Night	Туре	Value	norm.	Day	Special	Night		Number		Speed		
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	Day	Evening	Night	(mph)	(ft)	\square
LINESOURCE		TRUCK01	93.2	93.2	93.2	68.9	68.9	68.9	Lw	93.2									8	а
LINESOURCE		TRUCK02	93.2	93.2	93.2	77.7	77.7	77.7	Lw	93.2									8	а

Name	ID	ŀ	lei	ght		Coordinat	es	
		Begin		End	х	У	z	Ground
		(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
LINESOURCE	TRUCK01	8.00	а		6211501.30	2361093.81	8.00	0.00
					6211484.29	2360218.32	8.00	0.00
LINESOURCE	TRUCK02	8.00	а		6211497.00	2360872.47	8.00	0.00
					6211380.25	2360872.25	8.00	0.00

Area Source(s)

Name	М.	ID	R	esult. PW	'L	Re	esult. PW	L''		Lw / L	i	Op	erating Ti	me	Height	t
			Day	Evening	Night	Day	Evening	Night	Туре	Value	norm.	Day	Special	Night	(ft)	
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)		
AREASOURCE		DOCK01	103.4	103.4	103.4	67.6	67.6	67.6	Lw	103.4					8	a
AREASOURCE		DOCK02	103.4	103.4	103.4	68.9	68.9	68.9	Lw	103.4					8	a

Name	ID	ŀ	lei	ght			Coordinat	es	
		Begin		End		х	У	z	Ground
		(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
AREASOURCE	DOCK01	8.00	а			6211542.87	2361092.93	8.00	0.00
						6211604.37	2361094.32	8.00	0.00
						6211594.04	2360419.45	8.00	0.00
						6211533.71	2360419.53	8.00	0.00
AREASOURCE	DOCK02	8.00	а			6211390.93	2360793.97	8.00	0.00
						6211445.18	2360793.05	8.00	0.00
						6211436.48	2360223.59	8.00	0.00
						6211384.05	2360224.13	8.00	0.00

Barrier(s)

Name	Sel.	M.	ID	Abso	rption	Z-Ext.	Canti	ilever	н	lei	ght		Coordinat	es	
				left	right		horz.	vert.	Begin		End	x	У	z	Ground
						(ft)	(ft)	(ft)	(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
BARRIERPLANNED			0						0.00	а		6211385.40	2361318.90	0.00	0.00
												6211548.26	2361317.00	0.00	0.00

Building(s)

	<u> </u>			_								
Name	Sel.	М.	ID	RB	Residents	Absorption	Height			Coordinat	es	
							Begin		х	У	z	Ground
							(ft)		(ft)	(ft)	(ft)	(ft)
BUILDING			BUILDING00001	x	0		45.00	а	6211545.39	2361217.77	45.00	0.00
									6211930.85	2361212.16	45.00	0.00
									6211917.32	2360361.16	45.00	0.00
									6211881.51	2360361.77	45.00	0.00
									6211881.33	2360295.79	45.00	0.00
									6211532.58	2360297.94	45.00	0.00
									6211533.71	2360419.53	45.00	0.00
									6211594.04	2360419.45	45.00	0.00
									6211604.37	2361094.32	45.00	0.00
									6211542.87	2361092.93	45.00	0.00

APPENDIX 10.1:

PROJECT CONSTRUCTION NOISE CALCULATIONS





15533 - Vineyard Avenue Warehouse

CadnaA Noise Prediction Model: 15533-03_Construction.cna Date: 25.03.25 Analyst: B. Lawson

Calculation Configuration

Configura	tion
Parameter	Value
General	
Max. Error (dB)	0.00
Max. Search Radius (ft)	10000.00
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (ft)	3280.80
Min. Length of Section (ft)	3.30
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	5.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	1
Search Radius Src	328.08
Search Radius Rcvr	328.08
Max. Distance Source - Rcvr	3280.84 3280.84
Min. Distance Rvcr - Reflector	3.28 3.28
Min. Distance Source - Reflector	0.33
Industrial (ISO 9613 (1996))	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Incl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (°F)	50
rel. Humidity (%)	70
Ground Absorption G	0.50
Wind Speed for Dir. (mph)	6.7
Roads (TNM)	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

Receiver Noise Levels

Name	M.	ID		Level Lr		Lir	Limit. Value			Land	Use	Height		Coordinates			
			Day	Night	CNEL	Day	Night	CNEL	Туре	Auto	Noise Type			Х	Y	Z	
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)	
RECEIVERS		R1	68.9	-35.9	65.8	55.0	45.0	0.0				5.00	а	6211453.30	2361394.41	5.00	
RECEIVERS		R2	68.7	-36.1	65.7	55.0	45.0	0.0				5.00	а	6211902.00	2361403.64	5.00	
RECEIVERS		R3	69.8	-35.0	66.8	55.0	45.0	0.0				5.00	а	6212100.07	2360958.92	5.00	
RECEIVERS		R4	69.3	-35.4	66.3	55.0	45.0	0.0				5.00	а	6212095.10	2360438.94	5.00	

Area Source(s)

Name	М.	ID	R	esult. PW	/L	Result. PWL"				Lw / Li		Op	Height	:		
			Day	Evening	Night	Day	Evening	Night	Туре	Value	norm.	Day	Special	Night	(ft)	
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)		
SITEBOUNDARY		CONSTRUCTION	123.2	18.4	18.4	75.1	-29.7	-29.7	PWL-Pt	118.4					8	а

Name	ID	ŀ	lei	ght		Coordinat	es	
		Begin		End	х	У	z	Ground
		(ft)	(ft)		(ft)	(ft)	(ft)	(ft)
SITEBOUNDARY	CONSTRUCTION	8.00	а		6211385.40	2361318.90	8.00	0.00
					6212019.41	2361311.50	8.00	0.00
					6212007.47	2360542.22	8.00	0.00
					6212005.71	2360373.13	8.00	0.00
					6212004.51	2360356.52	8.00	0.00
					6212000.91	2360340.26	8.00	0.00
					6211994.99	2360324.70	8.00	0.00
					6211973.41	2360281.22	8.00	0.00
					6211970.43	2360273.20	8.00	0.00
					6211968.87	2360264.79	8.00	0.00
					6211968.77	2360256.23	8.00	0.00

Name	ID	ŀ	Heig	ght			Coordinat	es	
		Begin		Begin End		х	У	z	Ground
		(ft)	(ft) (ft)			(ft)	(ft)	(ft)	(ft)
						6211970.13	2360247.79	8.00	0.00
						6211972.92	2360239.70	8.00	0.00
						6211977.05	2360232.21	8.00	0.00
						6211982.40	2360225.53	8.00	0.00
						6211988.81	2360219.87	8.00	0.00
						6211996.10	2360215.38	8.00	0.00
						6212004.04	2360212.21	8.00	0.00
						6211372.74	2360219.63	8.00	0.00

APPENDIX 10.2:

NIGHTTIME CONCRETE POUR NOISE CALCULATIONS





15533 - Vineyard Avenue Warehouse

CadnaA Noise Prediction Model: 15533-03_Pour.cna Date: 25.03.25 Analyst: B. Lawson

Calculation Configuration

Configura	tion
Parameter	Value
General	
Max. Error (dB)	0.00
Max. Search Radius (ft)	10000.00
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (ft)	3280.80
Min. Length of Section (ft)	3.30
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	5.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	1
Search Radius Src	328.08
Search Radius Rcvr	328.08
Max. Distance Source - Rcvr	3280.84 3280.84
Min. Distance Rvcr - Reflector	3.28 3.28
Min. Distance Source - Reflector	0.33
Industrial (ISO 9613 (1996))	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Incl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (°F)	50
rel. Humidity (%)	70
Ground Absorption G	0.50
Wind Speed for Dir. (mph)	6.7
Roads (TNM)	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

Receiver Noise Levels

Name	M.	ID		Level Lr Limit. Valı			ue	e Land Use					Coordinates			
			Day	Night	CNEL	Day	Night	CNEL	Туре	Auto	Noise Type			Х	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
RECEIVERS		R1	48.0	-56.7	45.0	55.0	45.0	0.0				5.00	а	6211453.30	2361394.41	5.00
RECEIVERS		R2	49.0	-55.8	46.0	55.0	45.0	0.0				5.00	а	6211902.00	2361403.64	5.00
RECEIVERS		R3	51.1	-53.7	48.1	55.0	45.0	0.0				5.00	а	6212100.07	2360958.92	5.00
RECEIVERS		R4	50.4	-54.3	47.4	55.0	45.0	0.0				5.00	а	6212095.10	2360438.94	5.00

Area Source(s)

Name	М.	ID	R	esult. PW	'L	Re	esult. PW	L''	Lw / Li			Operating Time				t
			Day	Evening	Night	Day	Evening Night		Туре	Value	norm.	Day	Special	Night	(ft)	
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)		
BUILDING		POUR	105.1	0.3	0.3	59.9	-44.8	-44.8	PWL-Pt	100.3					8	a

Name	ID	ŀ	lei	ght			Coordinat	es	
		Begin		End		х	У	z	Ground
		(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
BUILDING	POUR	8.00	а			6211545.39	2361217.77	8.00	0.00
						6211930.85	2361212.16	8.00	0.00
						6211917.32	2360361.16	8.00	0.00
						6211881.51	2360361.77	8.00	0.00
						6211881.33	2360295.79	8.00	0.00
						6211532.58	2360297.94	8.00	0.00
						6211533.71	2360419.53	8.00	0.00
						6211542.87	2361092.93	8.00	0.00

