Appendix G

Acoustical Assessment

Acoustical Assessment
Speedway Commerce Center Project
City of Rancho Cucamonga, California

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LIST OF ABBREVIATED TERMS

APN	Assessor's Parcel Number
ADT	Average daily traffic
dBA	A-weighted sound level
CEQA	California Environmental Quality Act
CLSP	California Landings Specific Plan
CSMA	California Subdivision Map Act
CNEL	Community equivalent noise level
L_{dn}	Day-night noise level
dB	Decibel
L_{eq}	Equivalent noise level
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
HVAC	Heating ventilation and air conditioning
Hz	Hertz
HOA	Homeowner's association
in/sec	Inches per second
L_{max}	Maximum noise level
µPa	Micropascals
L_{min}	Minimum noise level
PPV	Peak particle velocity
RMS	Root mean square
VdB	Vibration velocity level

1 INTRODUCTION

This report documents the results of an Acoustical Assessment completed for the Speedway Commerce Center (Project). The purpose of this Acoustical Assessment is to evaluate the potential construction and operational noise associated with the Project and determine the level of impact the Project would have on the environment. The Project is for the development of a warehouse project. The Project applicant is pursuing the Project on a speculative basis and the future occupant(s) of the Project are unknown at this time. Therefore, an Alternate Project (an E-Commerce use) was analyzed for purposes of informed decision making.

1.1 Project Location

The Project site is located directly south of the Burlington Northern Santa Fe (BNSF) Railway, directly west of San Sevaine Channel, north of Napa Street, and east of the East Etiwanda Creek channel in the City of Rancho Cucamonga (City) and unincorporated San Bernardino County. The Project site is located on two contiguous parcels: Assessor Parcel Numbers (APN) 0229-291-54 and 0229-291-46. Parcel 0229-291-54 (approximately 32.83 acres) is largely located within the City of Rancho Cucamonga City limits with the southwestern corner of the parcel along Napa Street outside the City limits. Parcel 0229-291-46 (approximately 2.9 acres) is located outside the City of Rancho Cucamonga city limits, within the County of San Bernardino and within the City of Fontana Sphere of Influence (SOI). The Project is located approximately 1.3 miles east of Interstate 15 (I-15) and approximately 1.5 miles north of Interstate 10 (I-10); refer to Figure 1: Regional Location and Figure 2: Local Vicinity**.**

1.2 Project Description

The future occupant(s) of the project are unknown at this time. Therefore, two development options are proposed; two warehouse buildings or a single e-commerce building. The development first option (Project) includes the development of two warehouse buildings on a combined 35.38-acre (1,541,166 square feet [sf]) site along with parking, entrance, and landscaping improvements. The Project includes the two APNs 0229-291-54 and 0229-291-46. The two proposed warehouse buildings would comprise approximately 42 percent of the total proposed Project site area and include approximately 650,960 sf of building area; refer to Table 1: Building Summaries. Each of the two proposed warehouse buildings (Building A and Building B) would include 10,000 square foot office spaces. Refer to Figure 3: Site Plan – Project.

Table 1: Building Summaries

Building	Warehouse (sf)	Office	Total Building (sf)	Automobile Parking Stalls		Trailer Parking Stalls	
				Required	Provided	Required	Provided
Project							
Building A	490,694	10,000	500,694	183	283	82	87
Building B	140,266	10,000	150,266	96	98	20	20
TOTAL	**632,034**	**20,000**	**650,960**	**279**	**381**	**102**	**107**
Alternate Project							
Building A	490,743	10,000	500,743	183	1,467	49	54

The second development option (Alternate Project) proposes a 500,743 square foot light industrial building that would be occupied by either a warehouse distribution/logistics operator(s) or a fulfillment center use; refer to Table 1. In the event that the building is occupied by a fulfillment center use, the truck court/loading area on the west side of the Building A and site for Building B would be used for up to 1,249 automobile parking spaces. Refer to Figure 4: Site Plan – Alternate Project. Regardless of the occupant(s), the buildings are expected to operate 24 hours a day, seven days a week.

As noted above, the Project applicant is pursuing the proposed Project on a speculative basis and the future occupant(s) of the Project are unknown at this time. Therefore, an Alternate Project (an E-Commerce use) was also analyzed at CEQA level depth for purposes of informed decision making. The detailed analysis assumes both buildings (Buildings A and B with a total of 635,878 square feet [sf]) would be occupied by 100 percent E-Commerce use. The Traffic Impact Analysis (TIA) assumed this worst-case scenario in terms of the additional traffic volume in the trip generation analysis. Theis analysis also analyzes this worst-case scenario consistent with the TIA. Although the Project applicant is not anticipating the Project being occupied by 100 percent E-Commerce, this additional analysis has been prepared in order to evaluate this worst-case scenario.

General Plan Land Use and Zoning Designations

The General Plan designation for parcel 0229-291-54, located in the City of Rancho Cucamonga is designated as Heavy Industrial (HI) and is within the Industrial Area Specific Plan. The General Plan designation for parcel 0229-291-46, located in San Bernardino County is Regional Industrial/Speedway RDA (IR) and is designated in the City of Fontana General Plan as General Industrial (I-G).

The zoning designation for parcel 0229-291-54, located in the City of Rancho Cucamonga is designated as Heavy Industrial (HI) and is within the Industrial Area Specific Plan. The Zoning designation for parcel 0229-291-46, located in the County of San Bernardino is Regional Industrial/Speedway RDA (IR) and is designated General Industrial (M-2) in the City of Fontana.

Additionally, the Project includes a Pre-zone application and annexation proposal for the portion of the parcel (Parcel 0229-291-54) that is located outside the city of Rancho Cucamonga limits and for the parcel located within the County of San Bernardino (Parcel 0229-291-46). Consistent with Local Agency Formation Commission (LAFCO) policies, the annexation would also include the proposed pre-zone and annexation of the portion of Parcel 0229-291-22, the adjacent property to the west, that is located outside of the city limit (not a part of the development project), to create a logical boundary into the City of Rancho Cucamonga from the center line of Napa Street, east of Etiwanda Avenue and west of the San Sevaine Channel. The annexation would be subject to the review and approval by the Local Agency Formation Commission (LAFCO) for San Bernardino County.

Infrastructure and Off-site Improvements

The majority of the Project site is presently vacant and undeveloped, with the exception of asphaltic concrete driveways in the western portion of the site. The pavement on-site is in poor condition, with moderate cracking throughout.

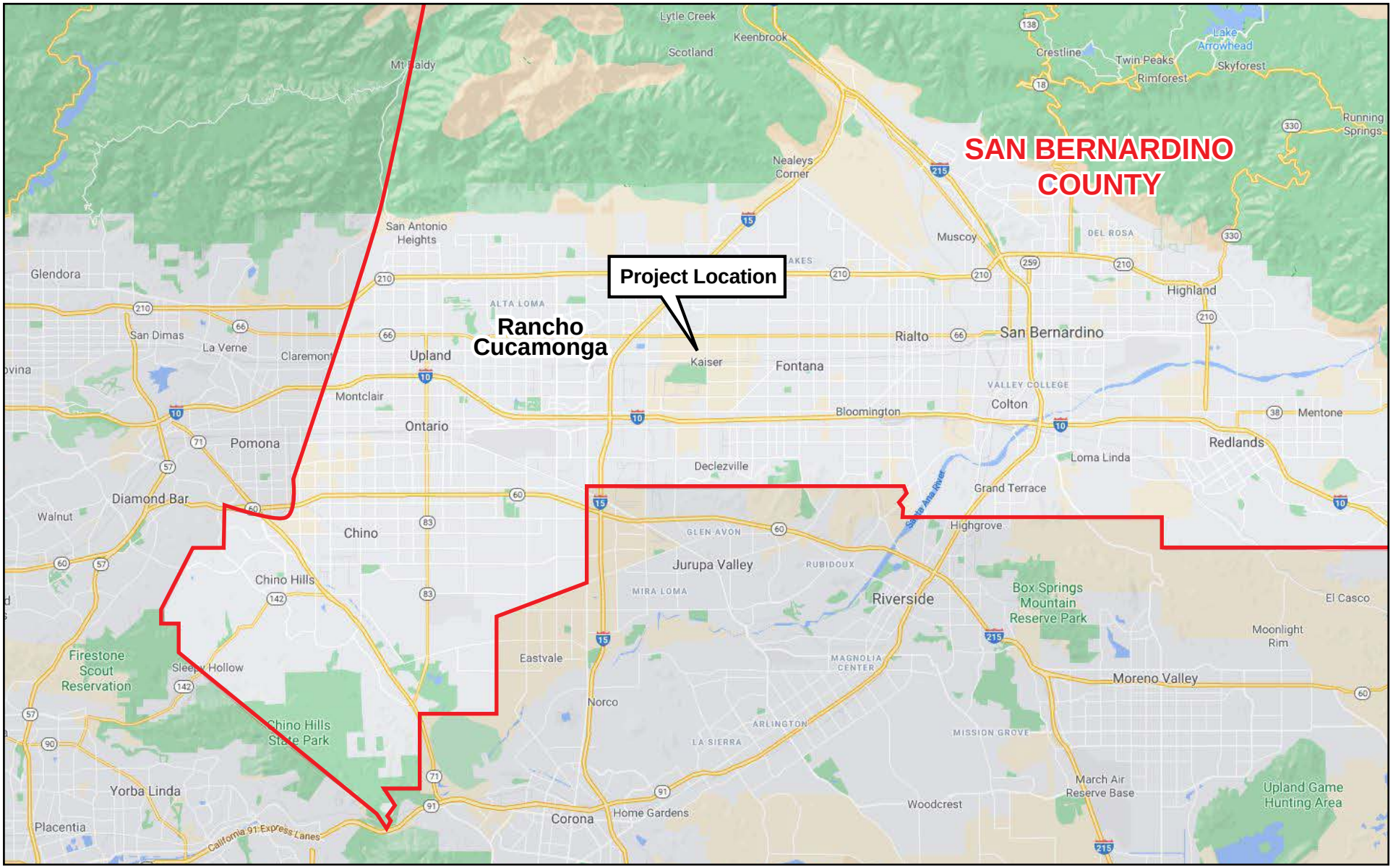
Overhead Southern California Edison powerlines are present along the northern property line of the Project site. These powerlines extend eastward through the central portion of the eastern half of the site. An existing railroad easement and spur line is present along the northern boundary of the Project site

extending from the northeast corner of the property to the center of the property and the easement extends southward crossing through the center of the site in the north-south direction. A 12-foot diameter Metropolitan Water District water supply line is located north of Napa Street, near the southern property line. The BNSF railway and Metrolink line is directly north of the Project site. The site is bordered to the west by the East Etiwanda Creek.

Furthermore, existing street improvements would be improved and/or redesigned as required to meet the City Standards along Napa Street at the Project frontage. The majority of the street improvements have been installed but to the current County of San Bernardino standards including curbs, gutters, sidewalks, streetlights, traffic signal equipment and signing and striping as required.

Construction

The site is generally vacant, with a rail spur line that traverse the site, and therefore construction would not include the demolition of any structures. Construction of the proposed Project is expected to commence in 2021 with a construction duration of approximately 10 months and would be completed in one phase with buildout in 2022.

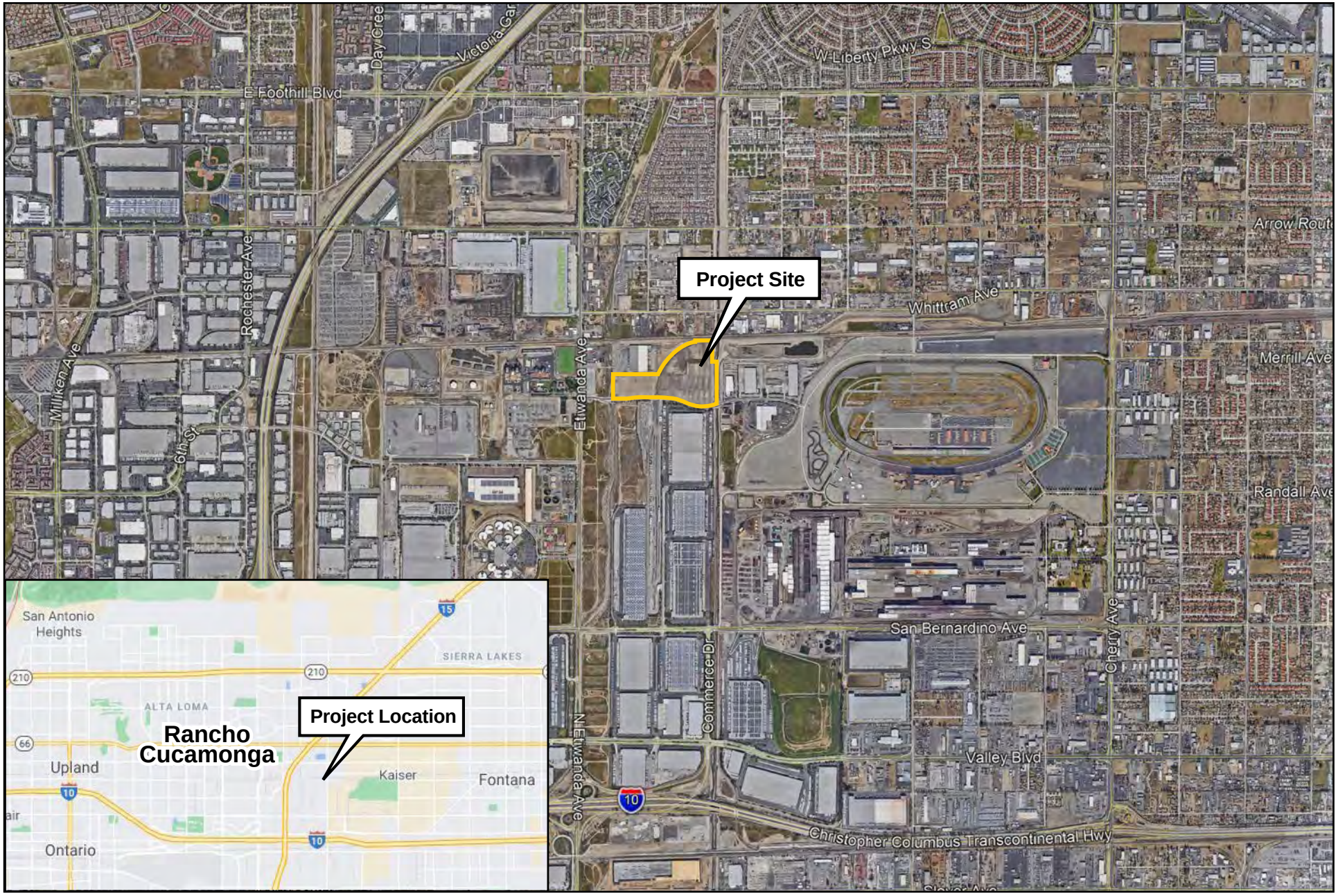


Source: Google Maps

FIGURE 1: Regional Location
Speedway Commerce Center
City of Rancho Cucamonga

Not to scale

Kimley»Horn



Source: Google Maps

FIGURE 2: Local Vicinity

Speedway Commerce Center

City of Rancho Cucamonga

Not to scale

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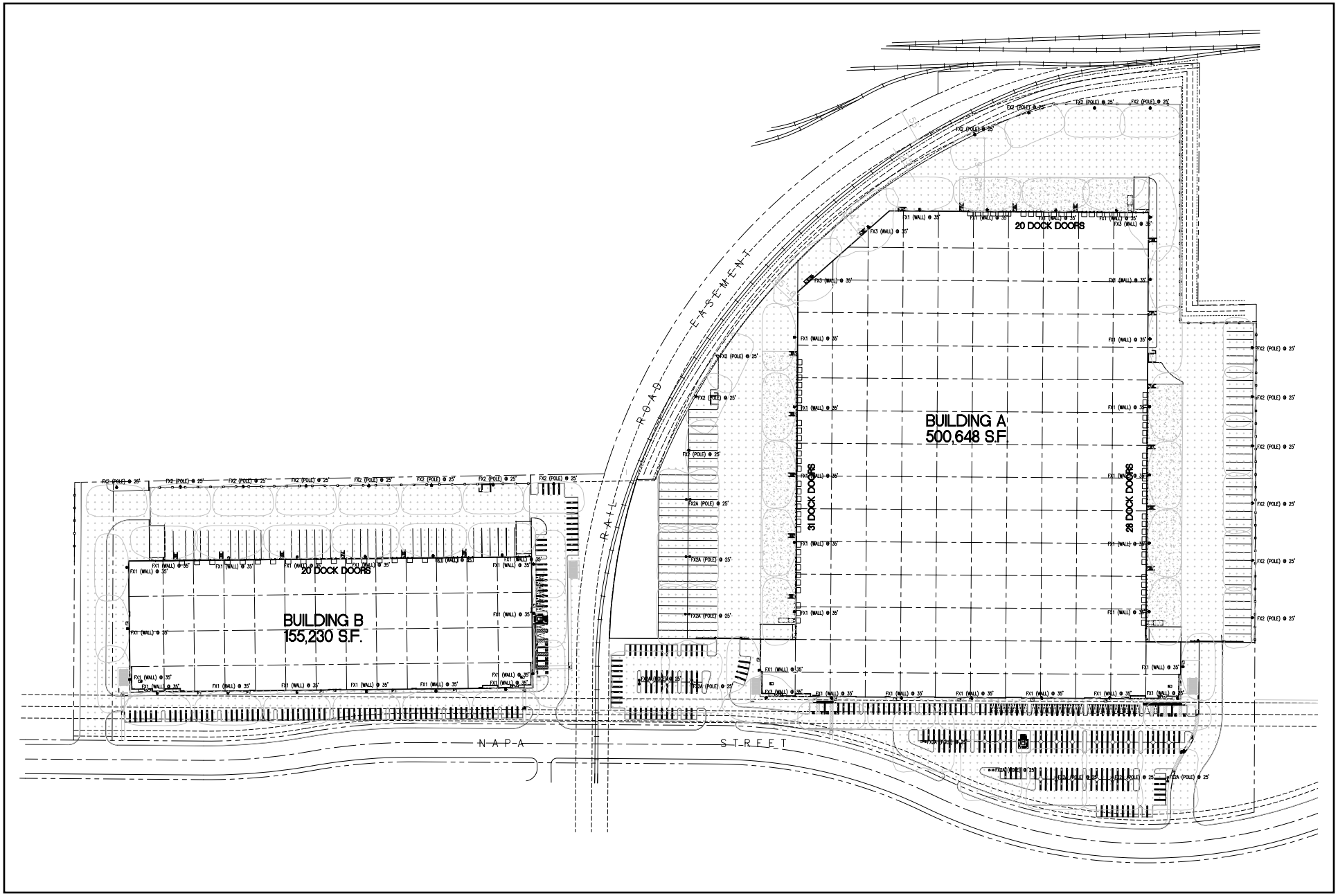

Graphic not to scale. For illustration purposes only.

FIGURE 3: Site Plan - Project

Speedway Commerce Center

City of Rancho Cucamonga

Not to scale

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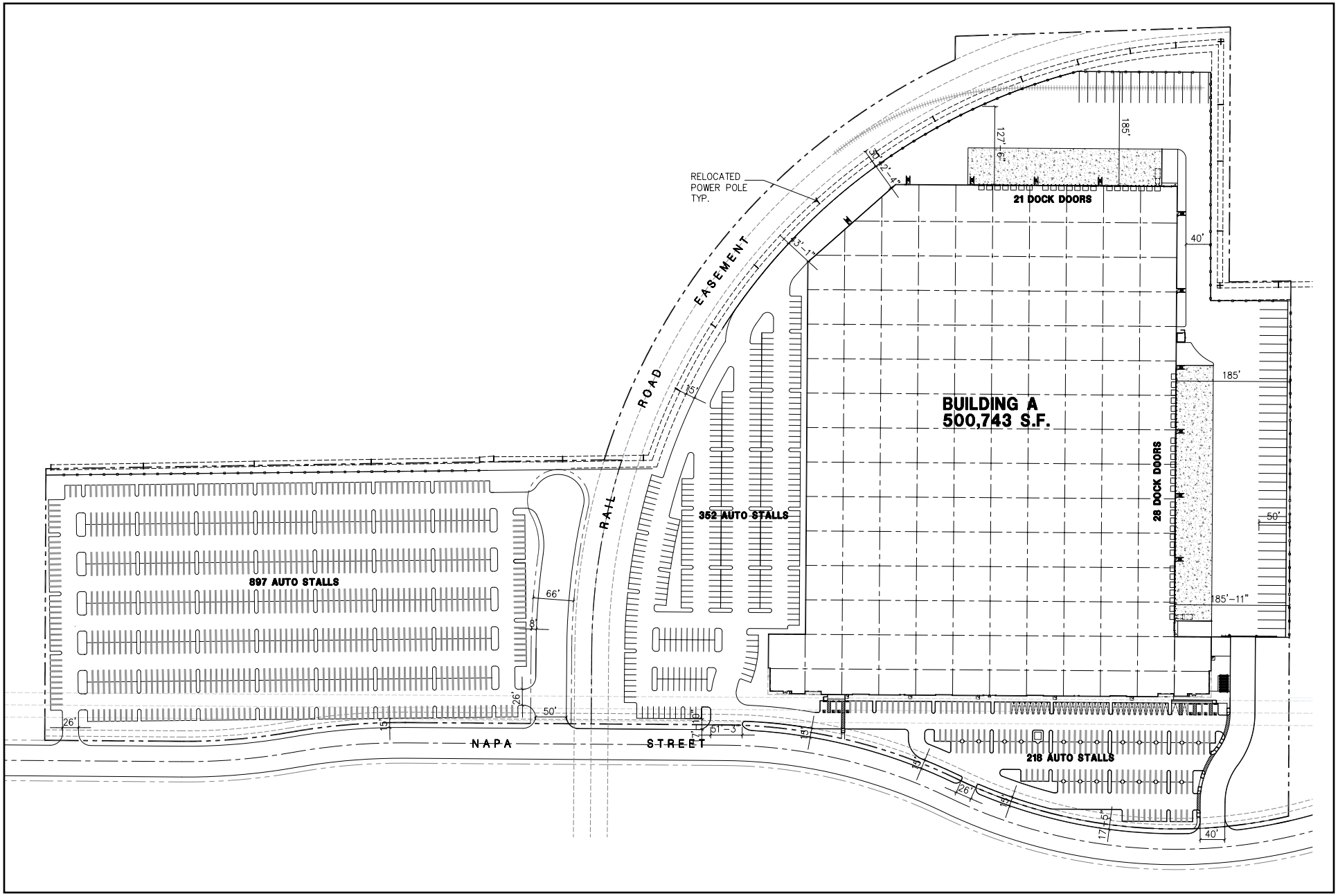

Graphic not to scale. For illustration purposes only.

FIGURE 4: Site Plan - Alternate Project

Speedway Commerce Center

City of Rancho Cucamonga

Not to scale

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2 ACOUSTIC FUNDAMENTALS

2.1 Sound and Environmental Noise

Acoustics is the science of sound. Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a medium (e.g. air) to human (or animal) ear. If the pressure variations occur frequently enough (at least 20 times per second), they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound and is expressed as cycles per second, or hertz (Hz).

Noise is defined as loud, unexpected, or annoying sound. In acoustics, the fundamental model consists of a noise source, a receptor, and the propagation path between the two. The loudness of the noise source, obstructions, or atmospheric factors affecting the propagation path, determine the perceived sound level and noise characteristics at the receptor. Acoustics deal primarily with the propagation and control of sound. A typical noise environment consists of a base of steady background noise that is the sum of many distant and indistinguishable noise sources. Superimposed on this background noise is the sound from individual local sources. These sources can vary from an occasional aircraft or train passing by to continuous noise from traffic on a major highway. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a large range of numbers. To avoid this, the decibel (dB) scale was devised. The dB scale uses the hearing threshold of 20 micro-pascals (µPa) as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The dB scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels correspond closely to human perception of relative loudness. Table 2: Typical Noise Levels provides typical noise levels.

Table 2: Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	– 110 –	Rock Band
Jet fly-over at 1,000 feet		
	– 100 –	
Gas lawnmower at 3 feet		
	– 90 –	
Diesel truck at 50 feet at 50 miles per hour		Food blender at 3 feet
	– 80 –	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawnmower, 100 feet	**– 70 –**	Vacuum cleaner at 10 feet
Commercial area		Normal Speech at 3 feet
Heavy traffic at 300 feet	**– 60 –**	
		Large business office
Quiet urban daytime	**– 50 –**	Dishwasher in next room
Quiet urban nighttime	**– 40 –**	Theater, large conference room (background)
Quiet suburban nighttime		
	– 30 –	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	– 20 –	
		Broadcast/recording studio
	– 10 –	
Lowest threshold of human hearing	**– 0 –**	Lowest threshold of human hearing

Source: California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013.

Noise Descriptors

The dB scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Several rating scales have been developed to analyze the adverse effect of community noise on people. Because environmental noise fluctuates over time, these scales consider that the effect of noise on people is largely dependent on the total acoustical energy content of the noise, as well as the time of day when the noise occurs. The equivalent noise level (L_{eq}) represents the equivalent continuous sound pressure level over the measurement period, while the day-night noise level (L_{dn}) and Community Equivalent Noise Level (CNEL) are measures of sound energy during a 24-hour period, with dB weighted sound levels from 7:00 p.m. to 7:00 a.m. Most commonly, environmental sounds are described in terms of L_{eq} that has the same acoustical energy as the summation of all the time-varying events. Each is applicable to this analysis and defined in Table 3: Definitions of Acoustical Terms.

Table 3: Definitions of Acoustical Terms

Term	Definitions
Decibel (dB)	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in µPa (or 20 micronewtons per square meter), where 1 pascal is the pressure resulting from a force of 1 newton exerted over an area of 1 square meter. The sound pressure level is expressed in dB as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e.g. 20 µPa). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sound are below 20 Hz and ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level (dBA)	The sound pressure level in dB 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 in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level (L_{eq})	The average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.
Maximum Noise Level (L_{max}) Minimum Noise Level (L_{min})	The maximum and minimum dBA during the measurement period.
Exceeded Noise Levels (L_{01}, L_{10}, L_{50}, L_{90})	The dBA values that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Day-Night Noise Level (L_{dn})	A 24-hour average L_{eq} with a 10-dBA weighting added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity at nighttime. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.4 dBA L_{dn}.
Community Noise Equivalent Level (CNEL)	A 24-hour average L_{eq} with a 5-dBA weighting during the hours of 7:00 a.m. to 10:00 p.m. and a 10-dBA weighting added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the evening and nighttime, respectively. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.7 dBA CNEL.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends on its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Source: Compiled from Caltrans, *Technical Noise Supplement to the Caltrans Traffic Noise Analysis Protocol*, September 2013; Cyril M. Harris, *Handbook of Noise Control*, 1979; Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, September 2018.

The A-weighted decibel (dBA) sound level scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about plus or minus 1 dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends on the distance between the receptor and the noise source.

A-Weighted Decibels

The perceived loudness of sounds is dependent on many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable and can be approximated by dBA values. There is a strong correlation between dBA and the way the human ear perceives sound. For this reason, the dBA has become the standard tool of environmental noise assessment. All noise levels reported in this document are in terms of dBA, but are expressed as dB, unless otherwise noted.

Addition of Decibels

The dB scale is logarithmic, not linear, and therefore sound levels cannot be added or subtracted through ordinary arithmetic. Two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic dB is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70-dBA sound is half as loud as an 80-dBA sound and twice as loud as a 60-dBA sound.[1] When two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dBA higher than one source under the same conditions.[2] Under the dB scale, three sources of equal loudness together would produce an increase of approximately 5 dBA.

Sound Propagation and Attenuation

Sound spreads (propagates) uniformly outward in a spherical pattern, and the sound level decreases (attenuates) at a rate of approximately 6 dB for each doubling of distance from a stationary or point source. Sound from a line source, such as a highway, propagates outward in a cylindrical pattern. Sound levels attenuate at a rate of approximately 3 dB for each doubling of distance from a line source, such as a roadway, depending on ground surface characteristics.[3] No excess attenuation is assumed for hard surfaces like a parking lot or a body of water. Soft surfaces, such as soft dirt or grass, can absorb sound, so an excess ground-attenuation value of 1.5 dB per doubling of distance is normally assumed.

Noise levels may also be reduced by intervening structures; generally, a single row of buildings between the receptor and the noise source reduces the noise level by about 5 dBA, while a solid wall or berm

[1] FHWA, *Noise Fundamentals,* 2017. Available at: https://www.fhwa.dot.gov/environMent/noise/regulations_and_guidance/polguide/polguide02.cfm
[2] Ibid.
[3] California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, Page 2-29, September 2013.

reduces noise levels by 5 to 10 dBA.[4] The way older homes in California were constructed generally provides a reduction of exterior-to-interior noise levels of about 20 to 25 dBA with closed windows.

Human Response to Noise

The human response to environmental noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities, including sleep, speech, recreation, and tasks that demand concentration or coordination. Hearing loss can occur at the highest noise intensity levels.

Noise environments and consequences of human activities are usually well represented by median noise levels during the day or night or over a 24-hour period. Environmental noise levels are generally considered low when the CNEL is below 60 dBA, moderate in the 60 to 70 dBA range, and high above 70 dBA. Examples of low daytime levels are isolated, natural settings with noise levels as low as 20 dBA and quiet, suburban, residential streets with noise levels around 40 dBA.[5] Noise levels above 45 dBA at night can disrupt sleep. Examples of moderate-level noise environments are urban residential or semi-commercial areas (typically 55 to 60 dBA) and commercial locations (typically 60 dBA). People may consider louder environments adverse, but most will accept the higher levels associated with noisier urban residential or residential-commercial areas (60 to 75 dBA) or dense urban or industrial areas (65 to 80 dBA). Regarding increases in dBA, the following relationships should be noted[6]:

- Except in carefully controlled laboratory experiments, a 1-dBA change cannot be perceived by humans.
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference.
- A minimum 5-dBA change is required before any noticeable change in community response would be expected. A 5-dBA increase is typically considered substantial.
- A 10-dBA change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

Effects of Noise on People

Hearing Loss

While physical damage to the ear from an intense noise impulse is rare, a degradation of auditory acuity can occur even within a community noise environment. Hearing loss occurs mainly due to chronic exposure to excessive noise but may be due to a single event such as an explosion. Natural hearing loss associated with aging may also be accelerated from chronic exposure to loud noise. The Occupational

[4] James P. Cowan, *Handbook of Environmental Acoustics,* 1994.

[5] Compiled from James P. Cowan, *Handbook of Environmental Acoustics,* 1994 and Cyril M. Harris, Handbook of Noise Control, 1979.

[6] Compiled from California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013, and FHWA, *Noise Fundamentals,* 2017.

Safety and Health Administration has a noise exposure standard that is set at the noise threshold where hearing loss may occur from long-term exposures. The maximum allowable level is 90 dBA averaged over 8 hours. If the noise is above 90 dBA, the allowable exposure time is correspondingly shorter.

Annoyance

Attitude surveys are used for measuring the annoyance felt in a community for noises intruding into homes or affecting outdoor activity areas. In these surveys, it was determined that causes for annoyance include interference with speech, radio and television, house vibrations, and interference with sleep and rest. The L_{dn} as a measure of noise has been found to provide a valid correlation of noise level and the percentage of people annoyed. People have been asked to judge the annoyance caused by aircraft noise and ground transportation noise. There continues to be disagreement about the relative annoyance of these different sources. A noise level of about 55 dBA L_{dn} is the threshold at which a substantial percentage of people begin to report annoyance[7].

2.2 Ground-Borne Vibration

Sources of ground-borne vibrations include natural phenomena (earthquakes, volcanic eruptions, sea waves, landslides, etc.) or man-made causes (explosions, machinery, traffic, trains, construction equipment, etc.). Vibration sources may be continuous (e.g. factory machinery) or transient (e.g. explosions or heavy equipment use during construction). Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One is vibration decibels (VdB) (the vibration velocity level in decibel scale). Other methods are the peak particle velocity (PPV) and the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. The RMS velocity is defined as the average of the squared amplitude of the signal. The PPV and RMS vibration velocity amplitudes are used to evaluate human response to vibration.

Table 4: Human Reaction and Damage to Buildings for Continuous or Frequent Intermittent Vibrations, displays the reactions of people and the effects on buildings produced by continuous vibration levels. The annoyance levels shown in the table should be interpreted with care since vibration may be found to be annoying at much lower levels than those listed, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage. In high noise environments, which are more prevalent where ground-borne vibration approaches perceptible levels, this rattling phenomenon may also be produced by loud airborne environmental noise causing induced vibration in exterior doors and windows.

Ground vibration can be a concern in instances where buildings shake, and substantial rumblings occur. However, it is unusual for vibration from typical urban sources such as buses and heavy trucks to be perceptible. Common sources for ground-borne vibration are planes, trains, and construction activities such as earthmoving which requires the use of heavy-duty earth moving equipment. For the purposes of this analysis, a PPV descriptor with units of inches per second (in/sec) is used to evaluate construction-generated vibration for building damage and human complaints.

[7] Federal Interagency Committee on Noise, *Federal Agency Review of Selected Airport Noise Analysis Issues*, August 1992.

Table 4: Human Reaction and Damage to Buildings for Continuous or Frequent Intermittent Vibrations			
Peak Particle Velocity (in/sec)	**Approximate Vibration Velocity Level (VdB)**	**Human Reaction**	**Effect on Buildings**
0.006-0.019	64-74	Range of threshold of perception	Vibrations unlikely to cause damage of any type
0.08	87	Vibrations readily perceptible	Recommended upper level to which ruins and ancient monuments should be subjected
0.1	92	Level at which continuous vibrations may begin to annoy people, particularly those involved in vibration sensitive activities	Virtually no risk of architectural damage to normal buildings
0.2	94	Vibrations may begin to annoy people in buildings	Threshold at which there is a risk of architectural damage to normal dwellings
0.4-0.6	98-104	Vibrations considered unpleasant by people that are subjected to continuous vibrations and unacceptable to some people walking on bridges	Architectural damage and possibly minor structural damage
Source: California Department of Transportation, *Transportation and Construction Vibration Guidance Manual*, 2013.			

3 REGULATORY SETTING

To limit population exposure to physically 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.

3.1 State of California

California Government Code

California Government Code Section 65302(f) mandates that the legislative body of each county and city adopt a noise element as part of its comprehensive general plan. The local noise element must recognize the land use compatibility guidelines established by the State Department of Health Services. The guidelines rank noise land use compatibility in terms of "normally acceptable", "conditionally acceptable", "normally unacceptable", and "clearly unacceptable" noise levels for various land use types. Single-family homes are "normally acceptable" in exterior noise environments up to 60 CNEL and "conditionally acceptable" up to 70 CNEL. Multiple-family residential uses are "normally acceptable" up to 65 CNEL and "conditionally acceptable" up to 70 CNEL. Schools, libraries, and churches are "normally acceptable" up to 70 CNEL, as are office buildings and business, commercial, and professional uses.

Title 24 – Building Code

The State's noise insulation standards are codified in the California Code of Regulations, Title 24: Part 1, Building Standards Administrative Code, and Part 2, California Building Code. These noise standards are applied to new construction in California for interior noise compatibility from exterior noise sources. The regulations specify that acoustical studies must be prepared when noise-sensitive structures, such as residential buildings, schools, or hospitals, are located near major transportation noise sources, and where such noise sources create an exterior noise level of 65 dBA CNEL or higher. Acoustical studies that accompany building plans must demonstrate that the structure has been designed to limit interior noise in habitable rooms to acceptable noise levels. For new multi-family residential and non-residential buildings, the acceptable interior noise limit for new construction is 45 dBA CNEL.

3.2 Local

City of Rancho Cucamonga General Plan

The City of Rancho Cucamonga is a roadmap that encompasses the hopes, aspirations, values, and dreams of the community. The City of Rancho Cucamonga General Plan (RCGP) specifies exterior noise guidelines for land uses in the Safety and Noise chapter. Noise compatibility can be achieved by avoiding the location of conflicting land uses adjacent to one another, incorporating buffers and noise control techniques including setbacks, landscaping, building transitions, site design, and building construction techniques. Selection of the appropriate noise control technique would vary depending on the level of noise that needs to be reduced as well as the location and intended land use. The City has determined two noise zones:

- Noise Zone I: All single- and multiple-family residential properties.

- Noise Zone II: All commercial properties.

Goals and policies from the Public Health and Safety chapter of the Rancho Cucamonga General Plan that are applicable to the Project are as follows:

Goal PS-13 **Minimize the impacts of excessive noise levels throughout the community, and adopt appropriate noise level requirements for all land uses.**

Policy PS-13.1: Consider the compatibility of proposed land uses with the noise environment when preparing or revising community and/or specific plans and when reviewing development proposals. The contour map depicting future noise levels (Figure PS-10) should be used by the City as a guide to land use/noise compatibility.

Policy PS-13.2: Consider noise impacts as part of the development review process, particularly the location of parking, ingress/egress/loading, and refuse collection areas relative to surrounding residential development and other noise-sensitive land uses.

Policy PS-13.6: Implement appropriate standard construction noise controls for all construction projects.

Policy PS-13.7: Require all exterior noise sources (construction operations, air compressors, pumps, fans, and leaf blowers) to use available noise suppression devices and techniques to bring exterior noise levels down to acceptable levels.

City of Rancho Cucamonga Municipal Code

Exterior noise levels are regulated by section 17.66.050(C) of the City of Rancho Cucamonga's municipal code. The noise ordinance regulates Noise Standards relative to community noise level exposure, guidelines, and regulations. It is considered unlawful if the exterior noise levels at any location within the city exceeds the following limits:

- Basic noise level for a cumulative period of not more than 15 minutes in any one hour; or
- Basic noise level plus five dBA for a cumulative period of not more than ten minutes in any one hour; or
- Basic noise level plus 14 dBA for a cumulative period of not more than five minutes in any one hour; or
- Basic noise level plus 15 dBA at any time.

If the measurement location is a boundary between two different noise zones, in order to be in compliance, the lower noise level shall apply.

Section 17.66.050(D) (Special Exclusions) of the Municipal Code indicates that construction is excluded from the provisions of the Municipal Code. As described in Section 17.66.050(D)(4) of the Municipal Code, noise sources associated with construction, repair, remodeling, or grading of any real property or during authorized seismic surveys, are exempt provided said activities:

a) When adjacent to a residential land use, school, church or similar type of use, the noise generating activity does not take place between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, including Saturday, or at any time on Sunday or a national holiday, and provided noise levels created do not exceed the noise standard of 65 dBA when measured at the adjacent property line.

b) When adjacent to a commercial or industrial use, the noise generating activity does not take place between the hours of 10:00 p.m. and 6:00 a.m. on weekdays, including Saturday and Sunday, and provided noise levels created do not exceed the noise standards of 70 dBA when measured at the adjacent property line.

Municipal Code Section 17.66.050(F) regulates that at residential uses between the hours of 7:00 a.m. and 10:00 p.m. the exterior noise levels should not exceed 65 dBA (refer to Table 6: Residential Noise Limits). These are the noise thresholds when measured at the adjacent residential property line (exterior) or within a neighboring home (interior).

Table 5: Residential Noise Limits

Location of Measurement	Maximum Allowable	
	10:00 p.m. to 7:00 a.m.	7:00 a.m. to 10:00 p.m.
Exterior	60 dBA	65 dBA
Interior	45 dBA	50 dBA

The City has adopted noise standards applicable to industrial areas. The ordinance places industrial areas into three classes. Classes A, B and C represent the industrial park, general industrial, and heavy industrial land uses, respectively. Table 6: Industrial Performance Standards shows the maximum noise levels allowed in each of the three classes.

In accordance to Municipal Code Section 17.66.050(G) the City of Rancho Cucamonga has adopted noise standards for commercial and office uses which compel all commercial operations and businesses to comply with the following standards:

1. *General: Commercial and office activities shall not create any noise that would exceed an exterior noise level of 65 dBA during the hours of 10:00 p.m. to 7:00 a.m. and 70 dBA during the hours of 7:00 a.m. to 10:00 p.m. when measured at the adjacent property line.*

2. *Loading and unloading: No person shall cause the loading, unloading, opening, closing, or other handling of boxes, crates, containers, building materials, garbage cans, or similar objects between the hours of 10:00 p.m. and 7:00 a.m., in a manner which would cause a noise disturbance to a residential area.*

3. *Vehicle repairs and testing: No person shall cause or permit the repairing, rebuilding, modifying, or testing of any motor vehicle, motorcycle, or motorboat in such a manner as to increase a noise disturbance between the hours of 10:00 p.m. and 8:00 a.m. adjacent to a residential area.*

Table 6: Industrial Performance Standards

Class A	Class B	Class C
	Noise Maximum	
• 70 dB (anywhere on lot) • 65 dB (interior space of neighboring use on same lot) • Noise caused by motor vehicles is exempted from this standard.	• 80 dB (anywhere on lot) • 65 dB (at residential property line) • Noise caused by motor vehicles and trains is exempted from this standard.	• 85 dB (lot line) • 65 dB (at residential property line) • Where a use occupies a lot abutting or separated by a street from a lot within the designated Class A or B performance standard or residential property, the performance standard of the abutting property shall apply at the common or facing lot line.
	Vibration	
All uses shall be so operated as not to generate vibration discernible without instruments by the average person while on or beyond the lot upon which the source is located or within an adjoining enclosed space if more than one establishment occupies a structure. Vibration caused by motor vehicles, trains, and temporary construction or demolition work is exempted from this standard.	All uses shall be operated so as not to generate vibration discernible without instruments by the average persons beyond the lot upon which the source is located. Vibration caused by motor vehicles, trains, and temporary construction or demolition is exempted from this standard.	All uses shall be operated so as not to generate vibration discernible without instruments by the average person beyond 600 feet from where the source is located. Vibration caused by motor vehicles, trains, and temporary construction and demolition is exempted from this standard.

1. Industrial Park (IP) Zoning District; Class A performance standards. The most restrictive of the performance standards to ensure a high-quality working environment and available sites for industrial and business firms whose functional and economic needs require protection from the adverse effects of noise, odors, vibration, glare, or high-intensity illumination, and other nuisances.
2. General Industrial (GI) Zoning District; Class B performance standards. These standards are intended to provide for the broadest range of industrial activity while assuring a basic level environmental protection. It is the intent of the standards of this section to provide for uses whose operational needs may produce noise, vibration, particulate matter and air contaminants, odors, or humidity, heat, and glare which cannot be mitigated sufficiently to meet the Class A standards. The standards are so designed to protect uses on adjoining sites from effects which could adversely affect their functional and economic viability.
3. Medium Impact/High Impact (MI/HI) and Heavy Industrial (HI) Zoning Districts; Class C performance standards. It is the intent of the standards of this section to make allowances for industrial uses whose associated processes produce noise, particulate matter and air contaminants, vibration, odor, humidity, heat, glare, or high-intensity illumination which would adversely affect the functional and economic viability of other uses. The standards, when combined with standards imposed by other governmental agencies, serve to provide basic health and safety protection for persons employed within or visiting the area.

Source: City of Rancho Cucamonga, *Municipal Code Section 17.66.110*, 2020.

4 EXISTING CONDITIONS

4.1 Existing Noise Sources

Rancho Cucamonga is impacted by various noise sources. Mobile sources of noise, especially cars, trucks, and railroads are the most common and significant sources of noise in most communities. Other sources of noise are the various land uses (i.e., residential, commercial, institutional, and recreational and parks activities) throughout the City that generate stationary-source noise. The southern border of the city is about one mile away from the Ontario International Airport's 65 dBA CNEL noise contour, which is the closest aviation center to the City.[8]

The roadways that contribute a notable amount of noise to the ambient environment include the I-15 and SR-210 freeways, Foothill Boulevard, and Base Line Road. Furthermore, the I-10 freeway is approximately 0.7 miles south of the City and its traffic noise can contribute to the City's ambient noise level.

There are several rail lines that run near or through the City of Rancho Cucamonga. The Alameda Corridor East rail line lies approximately one mile to the south of the City's southern boundary and does not pass through Rancho Cucamonga. According to the RCGP, the noise and vibration from this line does not have a significant noise impact on the City.

Mobile Sources

Existing roadway noise levels were calculated for the roadway segments in the project vicinity. This task was accomplished using the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA-RD-77-108) and existing traffic volumes from the Project Traffic Analysis (prepared by Translutions, 2020). The noise prediction model calculates the average noise level at specific locations based on traffic volumes, average speeds, roadway geometry, and site environmental conditions. The average vehicle noise rates (also referred to as energy rates) used in the FHWA model have been modified to reflect average vehicle noise rates identified for California by the California Department of Transportation (Caltrans). The Caltrans data indicates that California automobile noise is 0.8 to 1.0 dBA higher than national levels and that medium and heavy truck noise is 0.3 to 3.0 dBA lower than national levels.[9] The average daily noise levels along roadway segments in proximity to the project site are included in Table 7: Existing Traffic Noise Levels.

Table 7: Existing Traffic Noise Levels

Roadway	Segment	ADT	dBA CNEL 100 Feet from Roadway Centerline
Napa Street	Etiwanda Avenue to Driveway 1	4,200	59.4
Napa Street	Driveway 1 to Driveway 2	4,200	59.4
Napa Street	Driveway 2 to Driveway 3	4,200	59.4
Napa Street	Driveway 3 to Driveway 4	4,200	59.4
Napa Street	Driveway 4 to Driveway 5	4,200	59.4
Etiwanda Avenue	Foothill Boulevard to Arrow Route	14,700	66.0
Etiwanda Avenue	Arrow Route to Whittram Avenue	13,300	66.5
Etiwanda Avenue	Whittram Avenue to Napa Street	15,900	67.3

[8] City of Rancho Cucamonga, *General Plan Update*, May 2020.
[9] California Department of Transportation, *California Vehicle Noise Emission Levels*, 1987.

Table 7: Existing Traffic Noise Levels			
Roadway	**Segment**	**ADT**	**dBA CNEL 100 Feet from Roadway Centerline**
Etiwanda Avenue	Napa Street to 6th Street	16,100	67.3
Etiwanda Avenue	6th Street to 4th Street	17,700	67.8
Etiwanda Avenue	4th Street to Valley Boulevard	21,000	67.6
Etiwanda Avenue	Valley Boulevard to I-10 WB Ramps	25,800	68.6
Etiwanda Avenue	I-10 WB Ramps to I-10 EB Ramps	26,200	68.6
4th Street	I-15 SB Ramps to I-15 NB Ramps	26,800	69.7
4th Street	I-15 NB Ramps to Wineville Avenue	17,100	67.7
4th Street	Wineville Avenue to Barrington Avenue	14,900	67.0
4th Street	Barrington Avenue to Etiwanda Avenue	14,900	67.1
Notes: ADT = average daily trips; dBA = A-weighted decibels; CNEL = community noise equivalent level			
Source: Based on traffic data within the *Traffic Impact Analysis*, prepared by Translutions, Inc., 2020. Refer to Appendix B for traffic noise modeling assumptions and results.			

As depicted in Table 7, the existing traffic-generated noise level on Project-vicinity roadways currently ranges from 59.4 dBA CNEL to 69.7 dBA CNEL 100 feet from the centerline. As previously described, CNEL is 24-hour average noise level with a 5 dBA "weighting" during the hours of 7:00 p.m. to 10:00 p.m. and a 10 dBA "weighting" added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the evening and nighttime, respectively.

Stationary Sources

The primary sources of stationary noise in the Project vicinity are those associated with the operations of adjacent general industrial uses (e.g., loading areas, large mechanical equipment, fabrication). The noise associated with these sources may represent a single-event noise occurrence or short-term noise.

4.2 Sensitive Receptors

Noise exposure goals for various types of land uses reflect the varying noise sensitivities associated with those uses. Noise sensitive uses typically include residences, hospitals, schools, childcare facilities, and places of assembly. Vibration sensitive receivers are generally similar to noise sensitive receivers but may also include businesses, such as research facilities and laboratories that use vibration-sensitive equipment. The Project site is primarily surrounded by warehousing, factories, logistics, and distribution related uses. The sensitive land uses nearest to the Project site consist of single-family residential community located approximately to the north. Sensitive land uses nearest to the Project are shown in Table 8: Sensitive Receptors.

Table 8: Sensitive Receptors	
Receptor Description	**Distance and Direction from the Project**
Residential Community	730 feet to the north
Residential Community	2,450 feet to the northeast
Residential Community	7,900 feet to the northwest
Residential Community	9,466 feet to the east
Source: Google Earth	

4.3 Noise Measurements

The Project site is currently vacant and unoccupied. To quantify existing ambient noise levels in the Project area, Kimley-Horn conducted five short-term noise measurements on October 7, 2020; see Appendix A. The noise measurement sites were representative of typical existing noise exposure within and immediately adjacent to the Project site. The 10-minute measurements were taken between 1:16 p.m. and 2:41 p.m. Short-term Leq measurements are considered representative of the noise levels throughout the day. The average noise levels and sources of noise measured at each location are listed in Table 9: Existing Noise Measurements and shown on Figure 5: Noise Measurement Locations. Due to the nature of the surrounding development which continued to operate during the COVID-19 stay at home orders, ambient conditions were not impacted.

Table 9: Existing Noise Measurements

Site #	Location	L_{eq} (dBA)	L_{min} (dBA)	L_{max} (dBA)	Time	Applicable Standard (dBA L_{eq})[1]
1	Along the north side of Napa Street, approximately 120 feet west of the San Sevaine Channel	70.7	48.6	83.3	1:26 p.m.	80
2	Along the north side of Napa Street, approximately 650 feet east of Etiwanda Avenue	68.0	49.6	82.1	1:41 p.m.	80
3	Along the south side of Wittram Avenue, approximately 950 feet east of Etiwanda Avenue	68.8	51.7	81.2	2:00 p.m.	65
4	Along the east side of Illex Street, approximately 770 feet north of Wittram Avenue	56.9	49.2	75.6	2:15 p.m.	65
5	Along the north side of Arrow Route, approximately 480 feet east of Pecan Avenue	66.8	50.9	77.7	2:31 p.m.	65

1. Daytime exterior noise standard per Municipal Code Section 17.66.050(F) and *Section 17.66.110*.
Source: Noise measurements taken by Kimley-Horn, October 7, 2020. See Appendix A for noise measurement results.

Source: Google Maps

FIGURE 5: Noise Measurement Locations

Speedway Commerce Center

City of Rancho Cucamonga

Not to scale

Kimley»Horn

5 SIGNIFICANCE CRITERIA AND METHODOLOGY

5.1 CEQA Thresholds

Appendix G of the California Environmental Quality Act (CEQA) contains analysis guidelines related to noise impacts. These guidelines have been used by the City to develop thresholds of significance for this analysis. A project would create a significant environmental impact if it would:

- Generate 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;

- Generate excessive ground-borne vibration or ground-borne noise levels; and

- 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, expose people residing or working in the Project area to excessive noise levels.

Noise and Vibration Thresholds

Construction Thresholds

The following thresholds of significance are applied for construction noise impacts:

- When adjacent to a residential land use, school, church or similar type of use, the noise generating activity does not take place between the hours of 8:00 p.m. and 7:00 a.m. on weekdays and Saturdays, or at any time on Sunday or a national holiday.
- Noise levels created do not exceed the noise standard of 65 dBA when measured at the adjacent property line

Operational Thresholds

The City of Rancho Cucamonga Municipal Code (Chapter 17.66) includes regulations to control noise. The operational noise standard is 65 dBA at the residential property line. The following threshold of significance is applied for traffic noise impacts:

- Any noise increase of 3 dBA or greater is potentially significant when it impacts a sensitive land use, such as a residential area
- Any noise increase that impacts a sensitive land use, such as a residential area that will exceed 65 dBA Ldn or CNEL.

Vibration Thresholds

The City currently does not have a significance threshold to assess vibration impacts. Thus, the FTA guidelines set forth in FTA's Transit Noise and Vibration Impact Assessment Manual are used to evaluate potential impacts related to vibration.

- Any vibration that exceeds 0.10 in/sec, the approximate threshold for annoyance.
- A vibration level that exceeds 0.20 in/sec.

5.2 Methodology

Construction

Construction noise levels were based on typical noise levels generated by construction equipment published by the Federal Transit Administration (FTA) and FHWA. Construction noise is assessed in dBA Leq. This unit is appropriate because Leq can be used to describe noise level from operation of each piece of equipment separately, and levels can be combined to represent the noise level from all equipment operating during a given period.

Reference noise levels are used to estimate operational noise levels at nearby sensitive receptors based on a standard noise attenuation rate of 6 dB per doubling of distance (line-of-sight method of sound attenuation for point sources of noise). Noise level estimates do not account for the presence of intervening structures or topography, which may reduce noise levels at receptor locations. Therefore, the noise levels presented herein represent a conservative, reasonable worst-case estimate of actual temporary construction noise.

Operations

The analysis of the Opening Year and With Project noise environments is based on noise prediction modeling and empirical observations. Reference noise level data are used to estimate the Project operational noise impacts from stationary sources. Noise levels were collected from published sources from similar types of activities and used to estimate noise levels expected with the Project's stationary sources. The reference noise levels are used to represent a worst-case noise environment as noise level from stationary sources can vary throughout the day. Operational noise is evaluated based on the standards within the City's noise standards and General Plan.

Vibration

Ground-borne vibration levels associated with construction-related activities for the Project were evaluated utilizing typical ground-borne vibration levels associated with construction equipment, obtained from FTA published data for construction equipment. Potential ground-borne vibration impacts related to building/structure damage and interference with sensitive existing operations were evaluated, considering the distance from construction activities to nearby land uses and typically applied criteria for structural damage and human annoyance.

6 POTENTIAL IMPACTS AND MITIGATION

6.1 Acoustical Impacts

Threshold 6.1 Would the Project generate 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?

Construction

Project, Alternate Project, 100 Percent E-Commerce Worst-Case Scenario

Construction noise typically occurs intermittently and varies depending on the nature or phase of construction (e.g. land clearing, grading, excavation, paving). Noise generated by construction equipment, including earth movers, material handlers, and portable generators, can reach high levels. However, construction noise levels are not anticipated to affect sensitive receptors due to the Project's location. The Project site is located in an industrial area and the sensitive land uses nearest to the Project site consist of residential community located north of the Project site.

Construction activities for both development scenarios would include site preparation, grading, building construction, paving, and architectural coating. Such activities would require graders, scrapers, and tractors during site preparation; graders, dozers, and tractors during grading; cranes, forklifts, generators, tractors, and welders during building construction; pavers, rollers, mixers, tractors, and paving equipment during paving; and air compressors during architectural coating. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full power operation followed by 3 to 4 minutes at lower power settings. Other primary sources of acoustical disturbance would be random incidents, which would last less than one minute (such as dropping large pieces of equipment or the hydraulic movement of machinery lifts). Noise generated by construction equipment, including earth movers, material handlers, and portable generators, can reach high levels. Typical noise levels associated with individual construction equipment are listed in Table 10: Typical Construction Noise Levels.

Table 10: Typical Construction Noise Levels

Equipment	Typical Noise Level (dBA) at 50 feet from Source	Typical Noise Level (dBA) at 100 feet from Source[1]
Air Compressor	80	74
Backhoe	80	74
Compactor	82	76
Concrete Mixer	85	79
Concrete Pump	82	76
Concrete Vibrator	76	70
Crane, Derrick	88	82
Crane, Mobile	83	77
Dozer	85	79
Generator	82	76
Grader	85	79
Impact Wrench	85	79
Jack Hammer	88	82
Loader	80	74

Table 10: Typical Construction Noise Levels		
Equipment	**Typical Noise Level (dBA) at 50 feet from Source**	**Typical Noise Level (dBA) at 100 feet from Source[1]**
Paver	85	79
Pile-driver (Impact)	101	95
Pile-driver (Sonic)	95	89
Pneumatic Tool	85	79
Pump	77	71
Roller	85	79
Saw	76	70
Scraper	85	79
Shovel	82	76
Truck	84	78
dBA_2 = estimated noise level at receptor; dBA_1 = reference noise level; d_1 = reference distance; d_2 = receptor location distance [1] Calculated using the inverse square law formula for sound attenuation: $dBA_2 = dBA_1+20Log(d_1/d_2)$		
Source: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, September 2018.		

The noise levels calculated in Table 11: Project Construction Noise Levels, show the exterior construction noise without accounting for attenuation from existing physical barriers which have been estimated by Roadway Construction Noise Model (RCNM). The nearest noise sensitive receptors are residences approximately 730 feet north of the property line and 1,400 feet from the center of construction activity. All construction equipment was assumed to operate simultaneously at a construction area nearest to sensitive receptors. These assumptions represent a worst-case noise scenario as construction activities would routinely be spread throughout the construction site further away from noise sensitive receptors. In addition, noise generated during the construction, paving, and painting stages, which have the potential to occur simultaneously, were added together to provide a composite construction noise level.

Table 11: Project Construction Noise Levels									
Construction Phase	**Receptor Location**			**Worst Case Modeled Exterior Noise Level (dBA L_{eq})**	**Noise Threshold (dBA L_{eq})**	**Exceeded?**	**Measured Ambient**	**Combined with Ambient**	**Increase Over Ambient**
	Land Use	**Direction**	**Distance (feet)**						
Site Preparation	Residential	North	1,400	55.3	65	No	68.8	69.0	0.2
		Northeast	2,450	50.5	65	No	56.9	57.8	0.9
	Industrial	North	450	65.2	70	No	68.8	70.4	1.6
Grading	Residential	North	1,400	60.0	65	No	68.8	69.3	0.5
		Northeast	2,450	55.1	65	No	56.9	59.1	2.2
	Industrial	North	450	69.9	70	No	68.8	72.4	3.6
Construction	Residential	North	1,400	59.0	65	No	68.8	69.2	0.4
		Northeast	2,450	54.2	65	No	56.9	58.8	1.9
	Industrial	North	450	68.9	70	No	68.8	71.9	3.1
Paving	Residential	North	1,400	57.6	65	No	68.8	69.1	0.3
		Northeast	2,450	52.7	65	No	56.9	58.3	1.4
	Industrial	North	450	67.4	70	No	68.8	71.2	2.4
Architectural Coating	Residential	North	1,400	44.7	65	No	68.8	68.8	0.0
		Northeast	2,450	39.9	65	No	56.9	57.0	0.1
	Industrial	North	450	54.6	70	No	68.8	69.0	0.2
1. Per FTA Guidance (Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual, 2018) the equipment distance is assumed at the center of the project. 2. Threshold from the City of Rancho Cucamonga Municipal Code Section 17.66.050(D)(4). Source: Federal Highway Administration, *Roadway Construction Noise Model,* 2006. Refer to Appendix A for noise modeling results.									

It should be noted that the number of off-road equipment assumed for the construction of the Project during grading phase would be the same as the 100 Percent E-Commerce Worst-Case Scenario and greater

than what would be required for the Alternate Project. Therefore, noise levels associated with Project have been calculated to represent a worst-case scenario. Construction noise levels related to Alternate Project would be less.

As shown in Table 11, exterior noise levels could reach 60.0 dBA at the nearest existing sensitive receptors. The existing ambient noise level is 68.8 dBA (refer to Table 9). Table 11 shows that construction noise levels would not exceed City standards. Additionally, at some receptors, the existing ambient levels already exceed the City's noise standards. Table 11 also shows that construction noise levels would not represent a perceptible (i.e., less than 3 dBA) increase over existing conditions. Additionally, noise levels at nearby industrial uses would not be a readily perceptible (i.e., less than 5 dBA) increase. Therefore, construction noise would not represent a substantial noise increase in excess of City standards. Construction equipment would operate throughout the Project site and the associated noise levels would not occur at a fixed location for extended periods of time. These sensitive uses may be exposed to elevated noise levels during project construction. However, construction noise would be acoustically dispersed throughout the project site and not concentrated in one area near surrounding sensitive uses. The Rancho Cucamonga Municipal Code dictates the quantitative construction noise standards (Municipal Code Section 17.66.050[D][4]). Table 11 shows that construction noise levels would not exceed City standards; therefore, construction noise would be less than significant.

Operations

Project, Alternate Project, 100 Percent E-Commerce Worst-Case Scenario

Implementation of the proposed project would create new sources of noise in the Project vicinity. The major noise sources associated with the Project including the followings:

- Mechanical equipment (i.e. trash compactors, air conditioners, etc.);
- Slow moving trucks on the Project site, approaching and leaving the loading areas;
- Activities at the loading areas (i.e. maneuvering and idling trucks, equipment noise);
- Parking areas (i.e. car door slamming, car radios, engine start-up, and car pass-by); and
- Off-Site Traffic Noise.

Mechanical Equipment

Potential stationary noise sources related to long-term operation of the project site would include mechanical equipment. Mechanical equipment (e.g. heating ventilation and air conditioning [HVAC] equipment) typically generates noise levels of approximately 52 dBA at 50 feet.[10] HVAC equipment would be roof mounted. As the closest building would be approximately 150 feet from the property line, the worst-case HVAC equipment noise would be 42.5 dBA based on distance attenuation alone (using the inverse square law of sound propagation)[11] and would not exceed the City's 70 dBA industrial standard at the industrial uses to the north. This noise level conservatively does not include attenuation from intervening parapet walls. Additionally, HVAC equipment would be further away as it is typically centrally located on the roof. At the closest sensitive receptors located approximately 730 feet away, mechanical equipment noise would attenuate to 29 dBA. Operation of mechanical equipment would not increase

[10] Elliott H. Berger, Rick Neitzel, and Cynthia A. Kladden, *Noise Navigator Sound Level Database with Over 1700 Measurement Values*, July 6, 2010.
[11] Sound level reduces by 6 dB for every doubling of distance.

ambient noise levels beyond the acceptable compatible land use noise levels and would not exceed the City's 65 dBA daytime standard or the City's 60 dBA nighttime standard. Therefore, the proposed Project would result in a less than significant impact related to stationary noise levels.

Truck and Loading Dock Noise

During loading and unloading activities, noise would be generated by the trucks' diesel engines, exhaust systems, and brakes during low gear shifting braking activities; backing up toward the docks; dropping down the dock ramps; and maneuvering away from the docks. Loading or unloading activities would occur on the east, west, and south side of the Project site. Vehicular access to the proposed Project site would consist of three project driveways along Napa Street and a new public street east of Building B and west of the rail spur line.

Typically, heavy truck operations generate a noise level of 68 dBA at a distance of 30 feet.[12] As the closest building would be approximately 150 feet from the property line, truck and loading noise would be 54 dBA based on distance attenuation alone (using the inverse square law of sound propagation) and would not exceed the City's 70 dBA industrial standard at the industrial uses to the north. The closest residences are located approximately 730 feet north of the nearest proposed loading areas. These closest residencies would experience truck noise levels of approximately 40 dBA, which is below the City's 65 dBA and 60 dBA daytime and nighttime exterior residential noise standard (refer to Table 5). Additionally, these noise levels would also be further attenuated by the intervening structures. Loading dock doors would also be surrounded with protective aprons, gaskets, or similar improvements that, when a trailer is docked, would serve as a noise barrier between the interior warehouse activities and the exterior loading area. This would attenuate noise emanating from interior activities, and as such, interior loading and associated activities would be permissible during all hours of the day. Noise levels associated with trucks and loading or unloading activities would not exceed the City's standards and impacts would be less than significant.

Parking Noise

The proposed Project would accommodate the need for parking. Traffic associated with parking lots is typically not of sufficient volume to exceed community noise standards, which are based on a time-averaged scale such as the CNEL scale. The instantaneous maximum sound levels generated by a car door slamming, engine starting up, and car pass-bys range from 53 to 61 dBA.[13] Conversations in parking areas may also be an annoyance to adjacent sensitive receptors. Sound levels of speech typically range from 33 dBA at 50 feet for normal speech to 50 dBA at 50 feet for very loud speech.[14] It should be noted that parking lot noises are instantaneous noise levels compared to noise standards in the hourly Leq metric, which are averaged over the entire duration of a time period.

Actual noise levels over time resulting from parking lot activities would be far lower than the reference levels identified above. Parking lot noise would occur within the surface parking lot on-site and would be up to 38 dBA at the nearest sensitive receptors located approximately 730 feet away. It is also noted that parking lot noise occurs at the adjacent properties under existing conditions. Parking lot noise would be consistent with the existing noise in the vicinity and would be partially masked by background noise from

[12] Loading dock reference noise level measurements conducted by Kimley-Horn on December 18, 2018.
[13] Kariel, H. G., *Noise in Rural Recreational Environments*, Canadian Acoustics 19(5), 3-10, 1991.
[14] Elliott H. Berger, Rick Neitzel, and Cynthia A. Kladden. Noise Navigator Sound Level Database with Over 1700 Measurement Values, July 6, 2010.

traffic along Napa Street and Etiwanda Avenue. Noise associated with parking lot activities is not anticipated to exceed the City's noise standards during operation. Therefore, noise impacts from parking lots would be less than significant.

Off-Site Traffic Noise

Future development generated by the proposed project would result in additional traffic on adjacent roadways, thereby increasing vehicular noise near existing and proposed land uses. Traffic noise levels for roadways primarily affected by the Project were calculated using the FHWA's Highway Noise Prediction Model (FHWA-RD-77-108). Traffic noise modeling was conducted for conditions with and without the Project, based on traffic volumes from the Traffic Impact Analysis.

Per the Project Traffic Impact Study, the Project would generate 976 daily trips, which includes 602 passenger cars and 374 trucks. The Opening Year "without Project" and "with Project" scenarios are compared in Table 12: Opening Year Traffic Noise Levels (Project). As shown in Table 12, roadway noise levels would range from 59.6 dBA to 70.5 under "Without Project" conditions and from 59.9 dBA to 70.5 dBA under "with Project" conditions. The highest noise levels would occur along 4th Street, between I-15 SB Ramps and I-15 NB Ramps. Project generated traffic would result in a maximum increase of 0.9 dBA along Napa Street from Etiwanda Avenue to Driveway 1. Although roadway noise levels along Etiwanda Avenue from Foothill Boulevard to Arrow Route exceed the City's standards (both with and without project implementation) the noise level increase along this segment (and all other roadway segments) is below 3.0 dBA and would not be perceptible. Therefore, impacts would be less than significant.

Table 12: Opening Year Traffic Noise Levels (Project)

Roadway	Segment	Opening Year without Project		Opening Year with Project		Threshold (dBA)	Change	Significant Impacts
		ADT	dBA CNEL at 100 feet from Roadway Centerline	ADT	dBA CNEL at 100 feet from Roadway Centerline			
Napa Street	Etiwanda Avenue to Driveway 1	4,400	59.6	5,366	60.5	80	0.9	No
Napa Street	Driveway 1 to Driveway 2	4,400	59.6	5,234	60.4	80	0.8	No
Napa Street	Driveway 2 to Driveway 3	4,400	59.6	5,104	60.2	80	0.6	No
Napa Street	Driveway 3 to Driveway 4	4,400	59.6	4,882	60.1	80	0.5	No
Napa Street	Driveway 4 to Driveway 5	4,400	59.6	4,708	59.9	80	0.3	No
Etiwanda Ave.	Foothill Boulevard to Arrow Route	17,800	66.8	17,800	66.8	65	0.0	No
Etiwanda Ave.	Arrow Route to Whittram Avenue	16,100	67.3	16,100	67.3	80	0.0	No
Etiwanda Ave.	Whittram Avenue to Napa Street	19,600	68.2	19,944	68.3	80	0.1	No
Etiwanda Ave.	Napa Street to 6th Street	19,700	68.2	20,322	68.3	80	0.1	No
Etiwanda Ave.	6th Street to 4th Street	21,400	68.6	22,006	68.7	80	0.1	No
Etiwanda Ave.	4th Street to Valley Boulevard	23,700	68.1	23,990	68.1	80	0.1	No

Table 12: Opening Year Traffic Noise Levels (Project)								
Roadway	Segment	Opening Year without Project		Opening Year with Project		Threshold (dBA)	Change	Significant Impacts
		ADT	dBA CNEL at 100 feet from Roadway Centerline	ADT	dBA CNEL at 100 feet from Roadway Centerline			
Etiwanda Ave.	Valley Boulevard to I-10 WB Ramps	28,800	69.1	28,800	69.1	80	0.0	No
Etiwanda Ave.	I-10 WB Ramps to I-10 EB Ramps	29,200	69.0	29,200	69.0	80	0.0	No
4th Street	I-15 SB Ramps to I-15 NB Ramps	32,600	70.5	32,773	70.5	80	0.0	No
4th Street	I-15 NB Ramps to Wineville Avenue	22,300	68.9	22,580	69.0	80	0.1	No
4th Street	Wineville Avenue to Barrington Ave.	19,900	68.3	20,180	68.4	80	0.1	No
4th Street	Barrington Avenue to Etiwanda Ave.	17,700	67.8	17,980	67.9	70	0.1	No
ADT = average daily trips; dBA = A-weighted decibels; CNEL = community noise equivalent level.								
Source: Based on traffic data within the *Traffic Impact Analysis*, prepared by Translutions, Inc., 2021. Refer to Appendix B for traffic noise modeling assumptions and results.								

Alternate Project

Per the Project Traffic Impact Study, the Alternate Project would generate 3,225 daily trips, which includes 2,161 passenger cars and 323 trucks. The Opening Year "without Project" and "with Project" scenarios are compared Table 13: Opening Year Traffic Noise Levels (Alternate Project). As shown in Table 13, roadway noise levels would range from 59.6 dBA to 70.5 dBA under "Without Project" conditions and from 59.9 dBA to 70.6 dBA under "with Project" conditions. The highest noise levels would occur along 4th Street, between I-15 SB Ramps and I-15 NB Ramps. Project generated traffic would result in a maximum increase of 1.9 dBA along Napa Street from Etiwanda Avenue to Driveway 1. Although roadway noise levels along Etiwanda Avenue from Foothill Boulevard to Arrow Route exceed the City's standards (both with and without Project implementation) the noise level increase along this segment (and all other roadway segments) the noise level increase is below 3.0 dBA and would not be perceptible. Therefore, a less than significant impact would occur in this regard.

Table 13: Opening Year Traffic Noise Levels (Alternate Project)								
Roadway	Segment	Opening Year without Project		Opening Year with Project		Threshold (dBA)	Change	Significant Impacts
		ADT	dBA CNEL at 100 feet from Roadway Centerline	ADT	dBA CNEL at 100 feet from Roadway Centerline			
Napa Street	Etiwanda Avenue to Driveway 1	4,400	59.6	6,886	61.5	80	1.9	No
Napa Street	Driveway 1 to Driveway 2	4,400	59.6	5,588	60.6	80	1.0	No
Napa Street	Driveway 2 to Driveway 3	4,400	59.6	5,048	60.2	80	0.6	No
Napa Street	Driveway 3 to Driveway 4	4,400	59.6	4,832	60.0	80	0.4	No

Table 13: Opening Year Traffic Noise Levels (Alternate Project)

Roadway	Segment	Opening Year without Project		Opening Year with Project		Threshold (dBA)	Change	Significant Impacts
		ADT	dBA CNEL at 100 feet from Roadway Centerline	ADT	dBA CNEL at 100 feet from Roadway Centerline			
Napa Street	Driveway 4 to Driveway 5	4,400	59.6	4,724	59.9	80	0.3	No
Etiwanda Ave.	Foothill Boulevard to Arrow Route	17,800	66.8	18,378	67.0	65	0.1	No
Etiwanda Ave.	Arrow Route to Whittram Avenue	16,100	67.3	16,914	67.5	80	0.2	No
Etiwanda Ave.	Whittram Avenue to Napa Street	19,600	68.2	20,588	68.4	80	0.2	No
Etiwanda Ave.	Napa Street to 6th Street	19,700	68.2	21,196	68.5	80	0.3	No
Etiwanda Ave.	6th Street to 4th Street	21,400	68.6	22,356	68.8	80	0.2	No
Etiwanda Ave.	4th Street to Valley Boulevard	23,700	68.1	24,450	68.2	80	0.1	No
Etiwanda Ave.	Valley Boulevard to I-10 WB Ramps	28,800	69.1	29,323	69.2	80	0.1	No
Etiwanda Ave.	I-10 WB Ramps to I-10 EB Ramps	29,200	69.0	29,888	69.1	80	0.1	No
4th Street	I-15 SB Ramps to I-15 NB Ramps	32,600	70.5	32,973	70.6	80	0.0	No
4th Street	I-15 NB Ramps to Wineville Avenue	22,300	68.9	22,808	69.0	80	0.1	No
4th Street	Wineville Avenue to Barrington Ave.	19,900	68.3	20,408	68.4	80	0.1	No
4th Street	Barrington Avenue to Etiwanda Ave.	17,700	67.8	18,208	67.9	70	0.1	No

ADT = average daily trips; dBA = A-weighted decibels; CNEL = community noise equivalent level.

Source: Based on traffic data within the *Traffic Impact Analysis*, prepared by Translutions, Inc., 2021. Refer to Appendix B for traffic noise modeling assumptions and results.

100 Percent E-Commerce Worst-Case Scenario

Per the Project Traffic Impact Study, the 100 Percent E-Commerce Worst-Case Scenario would generate 4,224 daily trips, which includes 4,099 passenger cars and 125 trucks. The Opening Year "without Project" and "with Project" scenarios are compared Table 14: Opening Year Traffic Noise Levels (100 Percent E-Commerce). As shown in Table 14, roadway noise levels would range from 59.6 dBA to 70.5 dBA under "Without Project" conditions and from 61.3 dBA to 70.7 dBA under "with Project" conditions. The highest noise levels would occur along 4th Street, between I-15 SB Ramps and I-15 NB Ramps. Project generated traffic would result in a maximum increase of 4.1 dBA along Napa Street from Etiwanda Avenue to Driveway 1. Although traffic noise increases along Napa Street exceed 3.0 dBA, the resulting noise levels would not exceed the City's noise standards. Additionally, although roadway noise levels along Etiwanda Avenue from Foothill Boulevard to Arrow Route exceed the City's standards (both with and without Project implementation) the noise level increase along this segment (and all other roadway segments) the noise level increase is below 3.0 dBA and would not be perceptible. Therefore, a less than significant impact would occur in this regard.

Table 24: Opening Year Traffic Noise Levels (100 Percent E-Commerce)

Roadway	Segment	Opening Year without Project		Opening Year with Project		Threshold (dBA)	Change	Significant Impacts
		ADT	dBA CNEL at 100 feet from Roadway Centerline	ADT	dBA CNEL at 100 feet from Roadway Centerline			
Napa Street	Etiwanda Avenue to Driveway 1	4,400	59.6	11,400	63.7	80	4.1	No
Napa Street	Driveway 1 to Driveway 2	4,400	59.6	10,600	63.4	80	3.8	No
Napa Street	Driveway 2 to Driveway 3	4,400	59.6	9,700	63.0	80	3.4	No
Napa Street	Driveway 3 to Driveway 4	4,400	59.6	8,600	62.5	80	2.9	No
Napa Street	Driveway 4 to Driveway 5	4,400	59.6	6,500	61.3	80	1.7	No
Etiwanda Ave.	Foothill Boulevard to Arrow Route	17,800	66.8	20,200	67.4	65	0.6	No
Etiwanda Ave.	Arrow Route to Whittram Avenue	16,100	67.3	19,100	68.1	80	0.8	No
Etiwanda Ave.	Whittram Avenue to Napa Street	19,600	68.2	22,600	68.8	80	0.6	No
Etiwanda Ave.	Napa Street to 6th Street	19,700	68.2	23,600	69.0	80	0.8	No
Etiwanda Ave.	6th Street to 4th Street	21,400	68.6	25,300	69.3	80	0.7	No
Etiwanda Ave.	4th Street to Valley Boulevard	23,700	68.1	25,800	68.4	80	0.3	No
Etiwanda Ave.	Valley Boulevard to I-10 WB Ramps	28,800	69.1	30,900	69.4	80	0.3	No
Etiwanda Ave.	I-10 WB Ramps to I-10 EB Ramps	29,200	69.0	30,300	69.2	80	0.2	No
4th Street	I-15 SB Ramps to I-15 NB Ramps	32,600	70.5	33,600	70.7	80	0.2	No
4th Street	I-15 NB Ramps to Wineville Avenue	22,300	68.9	23,800	69.2	80	0.3	No
4th Street	Wineville Avenue to Barrington Ave.	19,900	68.3	21,400	68.6	80	0.3	No
4th Street	Barrington Avenue to Etiwanda Ave.	17,700	67.8	19,200	68.2	70	0.4	No

ADT = average daily trips; dBA = A-weighted decibels; CNEL = community noise equivalent level.

Source: Based on traffic data within the *Traffic Impact Analysis*, prepared by Translutions, Inc., 2021. Refer to Appendix B for traffic noise modeling assumptions and results.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

Threshold 6.2 Would the Project expose persons to or generate excessive ground borne vibration or ground-borne noise levels?

Project, Alternate Project, 100 Percent E-Commerce Worst-Case Scenario

Once operational, the Project would not be a source of ground-borne vibration. Increases in ground-borne vibration levels attributable to the proposed Project would be primarily associated with short-term construction-related activities. Construction on the Project site would have the potential to result in varying degrees of temporary ground-borne vibration, depending on the specific construction equipment used and the operations involved.

The Federal Transit Administration (FTA) has published standard vibration velocities for construction equipment operations. In general, the FTA architectural damage criterion for continuous vibrations (i.e., 0.2 in/sec) appears to be conservative. The types of construction vibration impacts include human annoyance and building damage. Human annoyance occurs when construction vibration rises significantly above the threshold of human perception for extended periods of time. Building damage can be cosmetic or structural. Ordinary buildings that are not particularly fragile would not experience any cosmetic damage (e.g., plaster cracks) at distances beyond 30 feet. This distance can vary substantially depending on the soil composition and underground geological layer between vibration source and receiver. In addition, not all buildings respond similarly to vibration generated by construction equipment. For example, for a building that is constructed with reinforced concrete with no plaster, the FTA guidelines show that a vibration level of up to 0.20 in/sec is considered safe and would not result in any construction vibration damage.

Table 15: Typical Construction Equipment Vibration Levels, lists vibration levels at 25 feet for typical construction equipment. Ground-borne vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. As indicated in Table 15, based on FTA data, vibration velocities from typical heavy construction equipment operations that would be used during Project construction range from 0.003 to 0.089 in/sec PPV at 25 feet from the source of activity.

Table 15: Typical Construction Equipment Vibration Levels

Equipment	Peak Particle Velocity at 25 Feet (in/sec)	Peak Particle Velocity at 93 Feet (in/sec)[1]
Large Bulldozer	0.089	0.0124
Caisson Drilling	0.089	0.0124
Loaded Trucks	0.076	0.0106
Rock Breaker	0.059	0.0082
Jackhammer	0.035	0.0049
Small Bulldozer/Tractors	0.003	0.0004

[1] Calculated using the following formula: $PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$, where: PPV_{equip} = the peak particle velocity in in/sec of the equipment adjusted for the distance; PPV_{ref} = the reference vibration level in in/sec from Table 7-4 of the Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, 2018; D = the distance from the equipment to the receiver.

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

The nearest sensitive receptors are the residential uses approximately 730 feet north and the nearest structure is a warehouse located approximately 93 feet to the north of the active construction zone. Using the calculation shown in Table 15, at 93 feet the vibration velocities from construction equipment would not exceed 0.016 in/sec PPV, which is below the FTA's 0.20 in/sec PPV threshold for building damage and

below the 0.10 in/sec PPV annoyance threshold. It is also acknowledged that construction activities would occur throughout the Project site and would not be concentrated at the point closest to the nearest structure. Therefore, vibration impacts associated with the proposed Project would be less than significant.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

Threshold 6.3 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?

Project, Alternate Project, 100 Percent E-Commerce Worst-Case Scenario

The closest airport is the Ontario International Airport and the southern border of the City is about one mile away from the airport's 65 dBA CNEL noise contour.[15] The Project is not within 2.0 miles of a public airport or within an airport land use plan. Additionally, there are no private airstrips located within the Project vicinity. Therefore, the Project would not expose people residing or working in the Project area to excessive airport- or airstrip-related noise levels and no mitigation is required.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

6.2 Cumulative Noise Impacts

Cumulative Construction Noise

Project, Alternate Project, 100 Percent E-Commerce Worst-Case Scenario

The Project's construction activities under both development scenarios would not result in a substantial temporary increase in ambient noise levels. Construction noise would be periodic and temporary noise impacts that would cease upon completion of construction activities. The Project would contribute to other proximate construction project noise impacts if construction activities were conducted concurrently. The analysis above shows that the ambient levels currently exceed the City's standards (refer to Table 6). However, as discussed above, Project construction noise levels would not exceed City standards, and the Project would not represent a noticeable increase over the ambient conditions. Therefore, the Project's construction noise would not represent a substantial noise increase in excess of City standards and would not be cumulatively considerable.

Construction activities at other planned and approved projects near the Project site would be required to comply with applicable City rules related to noise and would take place during daytime hours on the days permitted by the applicable Municipal Code, and projects requiring discretionary City approvals would be required to evaluate construction noise impacts, comply with the City's standard conditions of approval,

[15] City of Rancho Cucamonga, *General Plan Update*, May 2020.

and implement mitigation, if necessary, to minimize noise impacts. Construction noise impacts are by nature localized. Based on the fact that noise dissipates as it travels away from its source, noise impacts would be limited to the Project site and vicinity. Therefore, Project construction would not result in a cumulatively considerable contribution to significant cumulative impacts, assuming such a cumulative impact existed, and impacts in this regard are not cumulatively considerable.

Cumulative Operational Noise

Cumulative Off-Site Traffic Noise

Cumulative noise impacts describe how much noise levels are projected to increase over existing conditions with the development of the proposed Project and other foreseeable projects. Cumulative noise impacts would occur primarily as a result of increased traffic on local roadways due to buildout of the proposed Project and other projects in the vicinity. Cumulative increases in traffic noise levels were estimated by comparing the Existing and Future Without Project scenarios to the Future Plus Project scenario. The traffic analysis considers cumulative traffic from future growth assumed in the transportation model, as well as cumulative projects.

A project's contribution to a cumulative traffic noise increase would be considered significant when the combined effect exceeds perception level (i.e., auditory level increase) threshold. The following criteria is used to evaluate the combined and incremental effects of the cumulative noise increase.

- *Combined Effect*. The cumulative with Project noise level ("Cumulative With Project") would cause a significant cumulative impact if a 3.0 dB increase over "Existing" conditions occurs and the resulting noise level exceeds the applicable exterior standard at a sensitive use. Although there may be a significant noise increase due to the proposed Project in combination with other related projects (combined effects), it must also be demonstrated that the Project has an incremental effect. In other words, a significant portion of the noise increase must be due to the proposed Project.
- *Incremental Effects*. The "Cumulative With Project" causes a 1.0 dBA increase in noise over the "Cumulative Without Project" noise level.

A significant impact would result only if both the combined and incremental effects criteria have been exceeded. Noise by definition is a localized phenomenon and reduces as distance from the source increases. Consequently, only the proposed Project and growth due to occur in the general area would contribute to cumulative noise impacts.

Table 16: Cumulative Plus Project Conditions Predicted Traffic Noise Levels (Project) identifies the traffic noise effects along roadway segments in the Project vicinity for "Existing," "Cumulative Without Project," and "Cumulative With Project," conditions, including incremental and net cumulative impacts. Table 16 shows the increase for combined effects and incremental effects and none of the segments meet the criteria for cumulative noise increase. The proposed Project would not result in long-term mobile noise impacts based on project-generated traffic as well as cumulative and incremental noise levels. Therefore, the proposed Project, in combination with cumulative background traffic noise levels, would result in a less than significant cumulative impact. The proposed Project's contribution would not be cumulatively considerable.

Table 16: Cumulative Plus Project Conditions Predicted Traffic Noise Levels (Project)						
				Combined Effects	Incremental Effects	
Roadway Segment	Existing	Cumulative Without Project	Cumulative With Project	Difference In dBA Between Existing and Cumulative With Project	Difference In dBA Between Cumulative Without Project and Cumulative With Project	Cumulatively Significant Impact?
Napa Street						
Etiwanda Avenue to Driveway 1	59.4	60.9	61.5	2.1	0.7	No
Driveway 1 to Driveway 2	59.4	60.9	61.4	2.1	0.6	No
Driveway 2 to Driveway 3	59.4	60.9	61.4	2.0	0.5	No
Driveway 3 to Driveway 4	59.4	60.9	61.2	1.8	0.3	No
Driveway 4 to Driveway 5	59.4	60.9	61.1	1.7	0.2	No
Etiwanda Avenue						
Foothill Boulevard to Arrow Route	66.0	67.3	67.3	1.4	0.0	No
Arrow Route to Whittram Avenue	66.5	68.5	68.5	2.0	0.0	No
Whittram Avenue to Napa Street	67.3	69.0	69.0	1.8	0.1	No
Napa Street to 6th Street	67.3	69.9	70.0	2.6	0.1	No
6th Street to 4th Street	67.8	69.7	69.8	2.0	0.1	No
4th Street to Valley Boulevard	67.6	69.3	69.4	1.8	0.0	No
Valley Boulevard to I-10 WB Ramps	68.6	70.5	70.5	1.9	0.0	No
I-10 WB Ramps to I-10 EB Ramps	68.6	70.6	70.6	2.0	0.0	No
4th Street						
I-15 SB Ramps to I-15 NB Ramps	69.7	71.1	71.2	1.5	0.0	No
I-15 NB Ramps to Wineville Ave.	67.7	69.7	69.7	1.9	0.0	No
Wineville Avenue to Barrington Ave.	67.0	69.1	69.1	2.1	0.1	No
Barrington Avenue to Etiwanda Ave.	67.1	68.3	68.3	1.3	0.1	No

ADT = average daily trips; dBA = A-weighted decibels; CNEL = Community Noise Equivalent Level; WB = westbound; EB = eastbound

1. Traffic noise levels are at 100 feet from the roadway centerline. The actual sound level at any receptor location is dependent upon such factors as the source-to-receptor distance and the presence of intervening structures, barriers, and topography.

Source: Based on traffic data within the *VMT Assessment & Local Access, Safety, and Circulation Study*, prepared by Kimley-Horn, 2020. Refer to **Appendix A** for traffic noise modeling assumptions and results.

Alternate Project

Table 17: Cumulative Plus Project Conditions Predicted Traffic Noise Levels (Alternate Project) identify the traffic noise effects along roadway segments in the Project vicinity for "Existing," "Cumulative Without Project," and "Cumulative With Project," conditions, including incremental and net cumulative impacts. Table 17 shows the increase for combined effects and incremental effects for the proposed Project. As depicted in the Table 17, Napa Street (from Etiwanda to Driveway 1 segment) would exceed the incremental and combined noise criteria. As a result, the Project in combination with cumulative background traffic noise levels, would potentially result in a significant cumulative noise impact. However, the resulting noise level would be 62.4 dBA which is below the 65-dBA residential noise standard as well as the 70 dBA (Class A) and 80 dBA (Class B) industrial noise standards. As such, the proposed Project's contribution would not be cumulatively considerable because Project noise levels associated with either

development scenario would remain within the City's noise standards. Therefore, impacts related to cumulative off-site traffic noise would be less than significant.

Table 17: Cumulative Plus Project Conditions Predicted Traffic Noise Levels (Alternate Project)

Roadway Segment	Existing	Cumulative Without Project	Cumulative With Project	Combined Effects	Incremental Effects	Cumulatively Significant Impact?
				Difference In dBA Between Existing and Cumulative With Project	Difference In dBA Between Cumulative Without Project and Cumulative With Project	
Napa Street						
Etiwanda Avenue to Driveway 1	59.4	60.9	62.4	3.0	1.5	No
Driveway 1 to Driveway 2	59.4	60.9	61.7	2.3	0.8	No
Driveway 2 to Driveway 3	59.4	60.9	61.3	1.9	0.5	No
Driveway 3 to Driveway 4	59.4	60.9	61.2	1.8	0.3	No
Driveway 4 to Driveway 5	59.4	60.9	61.1	1.7	0.2	No
Etiwanda Avenue						
Foothill Boulevard to Arrow Route	66.0	67.3	67.5	1.5	0.1	No
Arrow Route to Whittram Avenue	66.5	68.5	68.6	2.1	0.2	No
Whittram Avenue to Napa Street	67.3	69.0	69.2	1.9	0.2	No
Napa Street to 6th Street	67.3	69.9	70.1	2.8	0.2	No
6th Street to 4th Street	67.8	69.7	69.8	2.0	0.1	No
4th Street to Valley Boulevard	67.6	69.3	69.4	1.9	0.1	No
Valley Boulevard to I-10 WB Ramps	68.6	70.5	70.6	2.0	0.1	No
I-10 WB Ramps to I-10 EB Ramps	68.6	70.6	70.6	2.1	0.1	No
4th Street						
I-15 SB Ramps to I-15 NB Ramps	69.7	71.1	71.2	1.5	0.0	No
I-15 NB Ramps to Wineville Avenue	67.7	69.7	69.7	2.0	0.1	No
Wineville Avenue to Barrington Ave.	67.0	69.1	69.2	2.1	0.1	No
Barrington Avenue to Etiwanda Ave.	67.1	68.3	68.4	1.3	0.1	No

ADT = average daily trips; dBA = A-weighted decibels; CNEL = Community Noise Equivalent Level; WB = westbound; EB = eastbound

1. Traffic noise levels are at 100 feet from the roadway centerline. The actual sound level at any receptor location is dependent upon such factors as the source-to-receptor distance and the presence of intervening structures, barriers, and topography.

Source: Based on traffic data within the *VMT Assessment & Local Access, Safety, and Circulation Study*, prepared by Kimley-Horn, 2020. Refer to **Appendix A** for traffic noise modeling assumptions and results.

100 Percent E-Commerce Worst-Case Scenario

Table 18: Cumulative Plus Project Conditions Predicted Traffic Noise Levels (100 Percent E-Commerce) identifies the traffic noise effects along roadway segments in the Project vicinity for "Existing," "Cumulative Without Project," and "Cumulative With Project," conditions, including incremental and net cumulative impacts. Table 18 shows the increase for combined effects and incremental effects for the proposed Project. As depicted in the Table 18, several road segments along Napa Street would exceed both the incremental and combined noise criteria. As a result, the Project in combination with cumulative background traffic noise levels, would potentially result in a significant cumulative noise impact. However, the resulting noise level would be 64.3 dBA or lower which is below the 65-dBA residential noise standard

as well as the 70 dBA (Class A) and 80 dBA (Class B) industrial noise standards. As such, the proposed Project's contribution would not be cumulatively considerable because Project noise levels associated with either development scenario would remain within the City's noise standards. Therefore, impacts related to cumulative off-site traffic noise would be less than significant.

Table 18: Cumulative Plus Project Conditions Predicted Traffic Noise Levels (100 Percent E-Commerce)

Roadway Segment	Existing	Cumulative Without Project	Cumulative With Project	Combined Effects	Incremental Effects	Cumulatively Significant Impact?
				Difference In dBA Between Existing and Cumulative With Project	Difference In dBA Between Cumulative Without Project and Cumulative With Project	
Napa Street						
Etiwanda Avenue to Driveway 1	59.4	60.9	64.3	4.9	3.4	No
Driveway 1 to Driveway 2	59.4	60.9	64.0	4.6	3.1	No
Driveway 2 to Driveway 3	59.4	60.9	63.7	4.3	2.8	No
Driveway 3 to Driveway 4	59.4	60.9	63.2	3.8	2.3	No
Driveway 4 to Driveway 5	59.4	60.9	62.2	2.8	1.3	No
Etiwanda Avenue						
Foothill Boulevard to Arrow Route	66.0	67.3	67.8	1.8	0.5	No
Arrow Route to Whittram Avenue	66.5	68.5	69.0	2.5	0.6	No
Whittram Avenue to Napa Street	67.3	69.0	69.5	2.2	0.5	No
Napa Street to 6th Street	67.3	69.9	70.4	3.1	0.5	No
6th Street to 4th Street	67.8	69.7	70.2	2.4	0.6	No
4th Street to Valley Boulevard	67.6	69.3	69.6	2.1	0.3	No
Valley Boulevard to I-10 WB Ramps	68.6	70.5	70.8	2.1	0.2	No
I-10 WB Ramps to I-10 EB Ramps	68.6	70.6	70.7	2.1	0.1	No
4th Street						
I-15 SB Ramps to I-15 NB Ramps	69.7	71.1	71.2	1.5	0.1	No
I-15 NB Ramps to Wineville Avenue	67.7	69.7	69.8	2.1	0.2	No
Wineville Avenue to Barrington Ave.	67.0	69.1	69.3	2.2	0.2	No
Barrington Avenue to Etiwanda Ave.	67.1	68.3	68.5	1.4	0.2	No

ADT = average daily trips; dBA = A-weighted decibels; CNEL = Community Noise Equivalent Level; WB = westbound; EB = eastbound

1. Traffic noise levels are at 100 feet from the roadway centerline. The actual sound level at any receptor location is dependent upon such factors as the source-to-receptor distance and the presence of intervening structures, barriers, and topography.

Source: Based on traffic data within the *VMT Assessment & Local Access, Safety, and Circulation Study*, prepared by Kimley-Horn, 2020. Refer to **Appendix A** for traffic noise modeling assumptions and results.

Cumulative Stationary Noise

Project, Alternate Project, 100 Percent E-Commerce Worst-Case Scenario

Stationary noise sources of the proposed Project would result in an incremental increase in non-transportation noise sources in the Project vicinity. However, as discussed above, operational noise caused by the proposed Project would be less than significant. Additionally, due to site distance to sensitive receptors cumulative stationary noise impacts would not occur. Similar to the proposed Project,

other planned and approved projects would be required to mitigate for stationary noise impacts at nearby sensitive receptors, if necessary. As stationary noise sources are generally localized, there is a limited potential for other projects to contribute to cumulative noise impacts.

No known past, present, or reasonably foreseeable projects would combine with the operational noise levels generated by the Project to increase noise levels above acceptable standards because each project must comply with applicable City regulations that limit operational noise. Therefore, the Project, together with other projects, would not create a significant cumulative impact, and even if there was such a significant cumulative impact, the Project would not make a cumulatively considerable contribution to significant cumulative operational noises.

Given that noise dissipates as it travels away from its source, operational noise impacts from on-site activities and other stationary sources would be limited to the Project site and vicinity. Thus, cumulative operational noise impacts from related projects, in conjunction with Project specific noise impacts, would not be cumulatively significant.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

7 REFERENCES

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10. Federal Highway Administration, *Noise Fundamentals*, 2017. Available at: https://www.fhwa.dot.gov/environMent/noise/regulations_and_guidance/polguide/polguide02.cfm
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12. Federal Highway Administration, *Roadway Construction Noise Model User's Guide Final Report*, 2006.
13. Federal Interagency Committee on Noise, *Federal Agency Review of Selected Airport Noise Analysis Issues*, 1992.
14. Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, 2018.
15. Translutions, Inc., *Traffic Impact Analysis for Napa Street Warehouse Project*, February 2021.
16. United States Department of Housing and Urban Development, *Noise Guidebook*, 2009.
17. United States Environmental Protection Agency, *Protective Noise Levels (EPA 550/9-79-100)*, 1979.

Appendix A

Existing Ambient Noise Measurements

Noise Measurement Field Data

Project:	Speedway Commerce Center	**Job Number:**	095996010
Site No.:	1	**Date:**	10/7/2020
Analyst:	Alex Howard	**Time:**	1:26 PM - 1:36 PM
Location:	Along the north side of Napa Street, 120 feet west of the San Sevaine Channel		
Noise Sources:	Cars and trucks driving along road		
Comments:	none		

Results (dBA):

Leq:	Lmin:	Lmax:	Peak:
70.7	48.6	83.3	112

Equipment	
Sound Level Meter:	LD SoundExpert LxT
Calibrator:	CAL200
Response Time:	Slow
Weighting:	A
Microphone Height:	5 feet

Weather	
Temp. (degrees F):	90
Wind (mph):	5.6 mph
Sky:	Clear
Bar. Pressure:	28.92 Hg
Humidity:	12%

Photo:

Kimley»Horn

Summary

File Name on Meter	NOI.006
File Name on PC	SLM_0005586_NOI_006.00.ldbin
Serial Number	0005586
Model	SoundExpert® LxT
Firmware Version	2.402
User	Alex Howard
Location	
Job Description	Speedway Commerce Center
Note	

Measurement

Description	
Start	2020-10-07 13:26:26
Stop	2020-10-07 13:36:26
Duration	00:10:00.0
Run Time	00:10:00.0
Pause	00:00:00.0
Pre Calibration	2020-10-07 08:35:41
Post Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting	
Peak Weight	Z Weighting	
Detector	Slow	
Preamp	PRMLxT1L	
Microphone Correction	Off	
Integration Method	Linear	
OBA Range	Normal	
OBA Bandwidth	1/1 and 1/3	
OBA Freq. Weighting	Z Weighting	
OBA Max Spectrum	At LMax	
Overload	122.2 dB	
	A	**C**
Under Range Peak	78.7	75.7
Under Range Limit	**24.1**	25.1
Noise Floor	15.0	16.0

Results

LA_{eq}	70.7	
LAE	98.4	
EA	775.854 µPa²h	
$LZ_{peak\ (max)}$	2020-10-07 13:31:59	112.0
LAS_{max}	2020-10-07 13:27:20	83.3
LAS_{min}	2020-10-07 13:32:18	48.6
SEA	-99.9 dB	

LAS > 85.0 dB (Exceedance Counts / Duration)	0	0.0
LAS > 115.0 dB (Exceedance Counts / Duration)	0	0.0
LZ_{peak} > 135.0 dB (Exceedance Counts / Duration)	0	0.0
LZ_{peak} > 137.0 dB (Exceedance Counts / Duration)	0	0.0
LZ_{peak} > 140.0 dB (Exceedance Counts / Duration)	0	0.0

Community Noise	**Ldn**	**LDay 07:00-22:00**
	70.7	70.7

LC_{eq}	80.8	dB
LA_{eq}	70.7	dB
LC_{eq} - LA_{eq}	10.2	dB
LAI_{eq}	72.7	dB
LA_{eq}	70.7	dB
LAI_{eq} - LA_{eq}	2.0	dB

	A	
	dB	**Time Stamp**
L_{eq}	70.7	
$L_{S(max)}$	83.3	2020/10/07 13:27:20
$L_{S(min)}$	48.6	2020/10/07 13:32:18
$L_{Peak(max)}$		

# Overloads	0	
Overload Duration	0.0	s
# OBA Overloads	0	
OBA Overload Duration	0.0	s

Statistics

LAI5.00	77.6	dB
LAI10.00	75.6	dB
LAI33.30	68.2	dB
LAI50.00	63.6	dB
LAI66.60	59.8	dB
LAI90.00	54.0	dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**
Direct	2019-10-29 12:18:45	-28.4
PRMLxT1L	2020-10-07 08:35:41	-28.4
PRMLxT1L	2020-07-09 10:17:20	-28.3
PRMLxT1L	2020-06-30 09:09:02	-28.4
PRMLxT1L	2020-02-25 09:42:24	-28.4
PRMLxT1L	2020-02-25 08:43:16	-28.3
PRMLxT1L	2020-02-20 08:30:09	-28.3
PRMLxT1L	2020-02-19 08:17:54	-28.4

Noise Measurement Field Data

Project:	Speedway Commerce Center	**Job Number:**	095996010
Site No.:	2	**Date:**	10/7/2020
Analyst:	Alex Howard	**Time:**	1:41 PM - 1:51 PM
Location:	Along the north side of Napa Street, 650 feet east of Etiwanda Avenue		
Noise Sources:	Cars and trucks driving along road		
Comments:	none		

Results (dBA):

Leq:	Lmin:	Lmax:	Peak:
68	49.6	82.1	122.7

Equipment	
Sound Level Meter:	LD SoundExpert LxT
Calibrator:	CAL200
Response Time:	Slow
Weighting:	A
Microphone Height:	5 feet

Weather	
Temp. (degrees F):	90
Wind (mph):	5.6 mph
Sky:	Clear
Bar. Pressure:	28.92 Hg
Humidity:	12%

Photo:

Kimley»Horn

Summary

File Name on Meter	NOI.007
File Name on PC	SLM_0005586_NOI_007.00.ldbin
Serial Number	0005586
Model	SoundExpert® LxT
Firmware Version	2.402
User	Alex Howard
Location	
Job Description	Speedway Commerce Center
Note	

Measurement

Description	
Start	2020-10-07 13:41:27
Stop	2020-10-07 13:51:27
Duration	00:10:00.0
Run Time	00:10:00.0
Pause	00:00:00.0
Pre Calibration	2020-10-07 08:35:41
Post Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	Z Weighting
Detector	Slow
Preamp	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Freq. Weighting	Z Weighting
OBA Max Spectrum	At LMax
Overload	122.2 dB

	A	**C**
Under Range Peak	78.7	75.7
Under Range Limit	**24.1**	25.1
Noise Floor	15.0	16.0

Results

LA_{eq}	68.0	
LAE	95.8	
EA	422.399 µPa²h	
$LZ_{peak\ (max)}$	2020-10-07 13:44:51	122.7
LAS_{max}	2020-10-07 13:47:17	82.1
LAS_{min}	2020-10-07 13:43:29	49.6
SEA	135.7 dB	

LAS > 85.0 dB (Exceedance Counts / Duration)	0	0.0
LAS > 115.0 dB (Exceedance Counts / Duration)	0	0.0
LZ_{peak} > 135.0 dB (Exceedance Counts / Duration)	0	0.0
LZ_{peak} > 137.0 dB (Exceedance Counts / Duration)	0	0.0
LZ_{peak} > 140.0 dB (Exceedance Counts / Duration)	0	0.0

Community Noise	**Ldn**	**LDay 07:00-22:00**
	68.0	68.0

LC_{eq}	79.6	dB
LA_{eq}	68.0	dB
LC_{eq} - LA_{eq}	11.6	dB
LAI_{eq}	71.1	dB
LA_{eq}	68.0	dB
LAI_{eq} - LA_{eq}	3.1	dB

	A	
	dB	**Time Stamp**
L_{eq}	68.0	
$L_{S(max)}$	82.1	2020/10/07 13:47:17
$L_{S(min)}$	49.6	2020/10/07 13:43:29
$L_{Peak(max)}$		

# Overloads	1	
Overload Duration	2.4	s
# OBA Overloads	1	
OBA Overload Duration	2.4	s

Statistics

LAI5.00	74.5	dB
LAI10.00	72.6	dB
LAI33.30	64.6	dB
LAI50.00	59.6	dB
LAI66.60	56.4	dB
LAI90.00	52.4	dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**
Direct	2019-10-29 12:18:45	-28.4
PRMLxT1L	2020-10-07 08:35:41	-28.4
PRMLxT1L	2020-07-09 10:17:20	-28.3
PRMLxT1L	2020-06-30 09:09:02	-28.4
PRMLxT1L	2020-02-25 09:42:24	-28.4
PRMLxT1L	2020-02-25 08:43:16	-28.3
PRMLxT1L	2020-02-20 08:30:09	-28.3
PRMLxT1L	2020-02-19 08:17:54	-28.4
PRMLxT1L	2020-02-12 11:29:25	-28.3
PRMLxT1L	2020-02-12 11:29:02	-28.4
PRMLxT1L	2020-01-14 08:26:18	-28.3

Noise Measurement Field Data

Project:	Speedway Commerce Center	**Job Number:**	095996010
Site No.:	3	**Date:**	10/7/2020
Analyst:	Alex Howard	**Time:**	2:00 PM - 2:10 PM
Location:	Along the south side of Wittram Avenue, 950 feet east of Etiwanda Avenue		
Noise Sources:	Cars and trucks driving along road		
Comments:	none		

Results (dBA):

Leq:	Lmin:	Lmax:	Peak:
68.8	51.7	81.2	104.4

Equipment	
Sound Level Meter:	LD SoundExpert LxT
Calibrator:	CAL200
Response Time:	Slow
Weighting:	A
Microphone Height:	5 feet

Weather	
Temp. (degrees F):	90
Wind (mph):	5.6 mph
Sky:	Clear
Bar. Pressure:	28.92 Hg
Humidity:	12%

Photo:

Kimley»Horn

Summary

File Name on Meter	NOI.008
File Name on PC	SLM_0005586_NOI_008.00.ldbin
Serial Number	0005586
Model	SoundExpert® LxT
Firmware Version	2.402
User	Alex Howard
Location	
Job Description	Speedway Commerce Center
Note	

Measurement

Description	
Start	2020-10-07 14:00:36
Stop	2020-10-07 14:10:36
Duration	00:10:00.0
Run Time	00:10:00.0
Pause	00:00:00.0
Pre Calibration	2020-10-07 08:35:41
Post Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	Z Weighting
Detector	Slow
Preamp	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Freq. Weighting	Z Weighting
OBA Max Spectrum	At LMax
Overload	122.2 dB

	A	**C**
Under Range Peak	78.7	75.7
Under Range Limit	**24.1**	25.1
Noise Floor	15.0	16.0

Results

LA_{eq}	68.8	
LAE	96.6	
EA	508.029 µPa²h	
$LZ_{peak\ (max)}$	2020-10-07 14:02:45	104.4
LAS_{max}	2020-10-07 14:06:25	81.2
LAS_{min}	2020-10-07 14:06:50	51.7
SEA	-99.9 dB	

LAS > 85.0 dB (Exceedance Counts / Duration)	0	0.0
LAS > 115.0 dB (Exceedance Counts / Duration)	0	0.0
LZ_{peak} > 135.0 dB (Exceedance Counts / Duration)	0	0.0
LZ_{peak} > 137.0 dB (Exceedance Counts / Duration)	0	0.0
LZ_{peak} > 140.0 dB (Exceedance Counts / Duration)	0	0.0

Community Noise	**Ldn**	**LDay 07:00-22:00**
	68.8	68.8

LC_{eq}	76.7	dB
LA_{eq}	68.8	dB
LC_{eq} - LA_{eq}	7.9	dB
LAI_{eq}	70.9	dB
LA_{eq}	68.8	dB
LAI_{eq} - LA_{eq}	2.1	dB

	A	
	dB	**Time Stamp**
L_{eq}	68.8	
$L_{S(max)}$	81.2	2020/10/07 14:06:25
$L_{S(min)}$	51.7	2020/10/07 14:06:50
$L_{Peak(max)}$		

# Overloads	0	
Overload Duration	0.0	s
# OBA Overloads	0	
OBA Overload Duration	0.0	s

Statistics

LAI5.00	74.9	dB
LAI10.00	72.6	dB
LAI33.30	68.0	dB
LAI50.00	65.3	dB
LAI66.60	61.8	dB
LAI90.00	54.4	dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**
Direct	2019-10-29 12:18:45	-28.4
PRMLxT1L	2020-10-07 08:35:41	-28.4
PRMLxT1L	2020-07-09 10:17:20	-28.3
PRMLxT1L	2020-06-30 09:09:02	-28.4
PRMLxT1L	2020-02-25 09:42:24	-28.4
PRMLxT1L	2020-02-25 08:43:16	-28.3
PRMLxT1L	2020-02-20 08:30:09	-28.3
PRMLxT1L	2020-02-19 08:17:54	-28.4
PRMLxT1L	2020-02-12 11:29:25	-28.3
PRMLxT1L	2020-02-12 11:29:02	-28.4
PRMLxT1L	2020-01-14 08:26:18	-28.3

Noise Measurement Field Data

Project:	Speedway Commerce Center	**Job Number:**	095996010
Site No.:	4	**Date:**	10/7/2020
Analyst:	Alex Howard	**Time:**	2:15 PM - 2:25 PM
Location:	Along the east side of Illex Street, 770 feet north of Wittram Avenue		
Noise Sources:	Cars and trucks driving along road		
Comments:	none		

Results (dBA):

Leq:	Lmin:	Lmax:	Peak:
56.9	49.2	75.6	104.9

Equipment	
Sound Level Meter:	LD SoundExpert LxT
Calibrator:	CAL200
Response Time:	Slow
Weighting:	A
Microphone Height:	5 feet

Weather	
Temp. (degrees F):	90
Wind (mph):	5.6 mph
Sky:	Clear
Bar. Pressure:	28.92 Hg
Humidity:	12%

Photo:

Kimley»Horn

Summary

File Name on Meter	NOI.009
File Name on PC	SLM_0005586_NOI_009.00.ldbin
Serial Number	0005586
Model	SoundExpert® LxT
Firmware Version	2.402
User	Alex Howard
Location	
Job Description	Speedway Commerce Center
Note	

Measurement

Description	
Start	2020-10-07 14:15:18
Stop	2020-10-07 14:25:18
Duration	00:10:00.0
Run Time	00:10:00.0
Pause	00:00:00.0
Pre Calibration	2020-10-07 08:35:41
Post Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting	
Peak Weight	Z Weighting	
Detector	Slow	
Preamp	PRMLxT1L	
Microphone Correction	Off	
Integration Method	Linear	
OBA Range	Normal	
OBA Bandwidth	1/1 and 1/3	
OBA Freq. Weighting	Z Weighting	
OBA Max Spectrum	At LMax	
Overload	122.2 dB	
	A	**C**
Under Range Peak	78.7	75.7
Under Range Limit	**24.1**	25.1
Noise Floor	15.0	16.0

Results

LA_{eq}	56.9	
LAE	84.7	
EA	32.871 µPa²h	
$LZ_{peak\ (max)}$	2020-10-07 14:22:26	104.9
LAS_{max}	2020-10-07 14:22:11	75.6

LAS_{min}	2020-10-07 14:15:18	49.2
SEA	-99.9 dB	

LAS > 85.0 dB (Exceedance Counts / Duration)	0	0.0
LAS > 115.0 dB (Exceedance Counts / Duration)	0	0.0
LZ_{peak} > 135.0 dB (Exceedance Counts / Duration)	0	0.0
LZ_{peak} > 137.0 dB (Exceedance Counts / Duration)	0	0.0
LZ_{peak} > 140.0 dB (Exceedance Counts / Duration)	0	0.0

Community Noise	**Ldn**	**LDay 07:00-22:00**
	56.9	56.9

LC_{eq}	68.7 dB	
LA_{eq}	56.9 dB	
LC_{eq} - LA_{eq}	11.8 dB	
LAI_{eq}	60.7 dB	
LA_{eq}	56.9 dB	
LAI_{eq} - LA_{eq}	3.8 dB	

	A	
	dB	**Time Stamp**
L_{eq}	56.9	
$L_{S(max)}$	75.6	2020/10/07 14:22:11
$L_{S(min)}$	49.2	2020/10/07 14:15:18
$L_{Peak(max)}$		

# Overloads	0	
Overload Duration	0.0 s	
# OBA Overloads	0	
OBA Overload Duration	0.0 s	

Statistics

LAI5.00	60.1 dB	
LAI10.00	56.4 dB	
LAI33.30	53.4 dB	
LAI50.00	52.0 dB	
LAI66.60	51.3 dB	
LAI90.00	50.5 dB	

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**
Direct	2019-10-29 12:18:45	-28.4
PRMLxT1L	2020-10-07 08:35:41	-28.4
PRMLxT1L	2020-07-09 10:17:20	-28.3
PRMLxT1L	2020-06-30 09:09:02	-28.4
PRMLxT1L	2020-02-25 09:42:24	-28.4
PRMLxT1L	2020-02-25 08:43:16	-28.3

Noise Measurement Field Data

Project:	Speedway Commerce Center	**Job Number:**	095996010
Site No.:	5	**Date:**	10/7/2020
Analyst:	Alex Howard	**Time:**	2:31 PM - 2:41 PM
Location:	Along the north side of Arrow Route, approximately 480 feet east of Pecan Avenue		
Noise Sources:	Cars and trucks driving along road		
Comments:	none		

Results (dBA):

Leq:	Lmin:	Lmax:	Peak:
66.8	50.9	77.7	99.3

Equipment	
Sound Level Meter:	LD SoundExpert LxT
Calibrator:	CAL200
Response Time:	Slow
Weighting:	A
Microphone Height:	5 feet

Weather	
Temp. (degrees F):	90
Wind (mph):	5.6 mph
Sky:	Clear
Bar. Pressure:	28.92 Hg
Humidity:	12%

Photo:

Kimley»Horn

Summary

File Name on Meter	NOI.010
File Name on PC	SLM_0005586_NOI_010.00.ldbin
Serial Number	0005586
Model	SoundExpert® LxT
Firmware Version	2.402
User	Alex Howard
Location	
Job Description	Speedway Commerce Center
Note	

Measurement

Description	
Start	2020-10-07 14:31:57
Stop	2020-10-07 14:41:57
Duration	00:10:00.0
Run Time	00:10:00.0
Pause	00:00:00.0
Pre Calibration	2020-10-07 08:35:41
Post Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	Z Weighting
Detector	Slow
Preamp	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Freq. Weighting	Z Weighting
OBA Max Spectrum	At LMax
Overload	122.2 dB

	A	**C**
Under Range Peak	78.7	75.7
Under Range Limit	**24.1**	25.1
Noise Floor	15.0	16.0

Results

L_{Aeq}	66.8		
LAE	94.6		
EA	322.257	µPa²h	
$L_{Zpeak\ (max)}$	2020-10-07 14:41:21		99.3
L_{ASmax}	2020-10-07 14:35:28		77.7

LAS_{min}	2020-10-07 14:33:30	50.9
SEA	-99.9 dB	

LAS > 85.0 dB (Exceedance Counts / Duration)	0	0.0
LAS > 115.0 dB (Exceedance Counts / Duration)	0	0.0
LZ_{peak} > 135.0 dB (Exceedance Counts / Duration)	0	0.0
LZ_{peak} > 137.0 dB (Exceedance Counts / Duration)	0	0.0
LZ_{peak} > 140.0 dB (Exceedance Counts / Duration)	0	0.0

Community Noise	**Ldn**	**LDay 07:00-22:00**
	66.8	66.8

LC_{eq}	74.4 dB	
LA_{eq}	66.8 dB	
LC_{eq} - LA_{eq}	7.5 dB	
LAI_{eq}	68.3 dB	
LA_{eq}	66.8 dB	
LAI_{eq} - LA_{eq}	1.4 dB	

	A	
	dB	**Time Stamp**
L_{eq}	66.8	
$L_{S(max)}$	77.7	2020/10/07 14:35:28
$L_{S(min)}$	50.9	2020/10/07 14:33:30
$L_{Peak(max)}$		

# Overloads	0	
Overload Duration	0.0 s	
# OBA Overloads	0	
OBA Overload Duration	0.0 s	

Statistics

LAI5.00	72.2 dB	
LAI10.00	70.5 dB	
LAI33.30	66.9 dB	
LAI50.00	64.6 dB	
LAI66.60	61.7 dB	
LAI90.00	57.1 dB	

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**
Direct	2019-10-29 12:18:45	-28.4
PRMLxT1L	2020-10-07 08:35:41	-28.4
PRMLxT1L	2020-07-09 10:17:20	-28.3
PRMLxT1L	2020-06-30 09:09:02	-28.4
PRMLxT1L	2020-02-25 09:42:24	-28.4
PRMLxT1L	2020-02-25 08:43:16	-28.3

Appendix B

Noise Modeling Results

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 2/5/2021
Case Description: Site Prepration Phase

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
North	Residential	55	50	45

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	1400	0
Backhoe	No	40		77.6	1400	0
Backhoe	No	40		77.6	1400	0
Backhoe	No	40		77.6	1400	0
Dozer	No	40		81.7	1400	0
Dozer	No	40		81.7	1400	0
Backhoe	No	40		77.6	1400	0

		Results Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer		52.7	48.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		48.6	44.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		48.6	44.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		48.6	44.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer		52.7	48.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer		52.7	48.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		48.6	44.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	52.7	55.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Northeast	Residential	55	50	45

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	2450	0
Backhoe	No	40		77.6	2450	0
Backhoe	No	40		77.6	2450	0
Backhoe	No	40		77.6	2450	0
Dozer	No	40		81.7	2450	0
Dozer	No	40		81.7	2450	0
Backhoe	No	40		77.6	2450	0

		Results Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer		47.9	43.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		43.8	39.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		43.8	39.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		43.8	39.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer		47.9	43.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer		47.9	43.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		43.8	39.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	47.9	50.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Northwest	Residential	55	50	45

			Equipment			
			Spec	Actual	Receptor	Estimated
		Impact	Lmax	Lmax	Distance	Shielding
Description		Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Dozer		No	40		81.7	8070	0
Backhoe		No	40		77.6	8070	0
Backhoe		No	40		77.6	8070	0
Backhoe		No	40		77.6	8070	0
Dozer		No	40		81.7	8070	0
Dozer		No	40		81.7	8070	0
Backhoe		No	40		77.6	8070	0

				Results											
		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer		37.5	33.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		33.4	29.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		33.4	29.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		33.4	29.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer		37.5	33.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer		37.5	33.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		33.4	29.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	37.5	40.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
North	Industrial	55	55	45

			Equipment			
			Spec	Actual	Receptor	Estimated
		Impact	Lmax	Lmax	Distance	Shielding
Description		Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Dozer		No	40		81.7	450	0
Backhoe		No	40		77.6	450	0
Backhoe		No	40		77.6	450	0
Backhoe		No	40		77.6	450	0
Dozer		No	40		81.7	450	0
Dozer		No	40		81.7	450	0
Backhoe		No	40		77.6	450	0

				Results											
		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer		62.6	58.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		58.5	54.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		58.5	54.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		58.5	54.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer		62.6	58.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer		62.6	58.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		58.5	54.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	62.6	65.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 2/5/2021
Case Description: Grading Phase

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
North	Residential	55	50	45

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	1400	0
Excavator	No	40		80.7	1400	0
Grader	No	40	85		1400	0
Grader	No	40	85		1400	0
Dozer	No	40		81.7	1400	0
Dozer	No	40		81.7	1400	0
Scraper	No	40		83.6	1400	0
Scraper	No	40		83.6	1400	0
Scraper	No	40		83.6	1400	0
Backhoe	No	40		77.6	1400	0
Backhoe	No	40		77.6	1400	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator	51.8	47.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	51.8	47.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	56.1	52.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	56.1	52.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	52.7	48.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	52.7	48.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	54.6	50.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	54.6	50.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	54.6	50.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	48.6	44.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	48.6	44.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	56.1	60	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Northeast	Residential	55	50	45

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	2450	0
Excavator	No	40		80.7	2450	0
Grader	No	40	85		2450	0
Grader	No	40	85		2450	0
Dozer	No	40		81.7	2450	0
Dozer	No	40		81.7	2450	0
Scraper	No	40		83.6	2450	0
Scraper	No	40		83.6	2450	0
Scraper	No	40		83.6	2450	0
Backhoe	No	40		77.6	2450	0
Backhoe	No	40		77.6	2450	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator	46.9	42.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	46.9	42.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	51.2	47.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	51.2	47.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	47.9	43.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	47.9	43.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	49.8	45.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	49.8	45.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	49.8	45.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	43.8	39.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	43.8	39.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	51.2	55.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Northwest	Residential	55	50	45

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	8070	0
Excavator	No	40		80.7	8070	0
Grader	No	40	85		8070	0
Grader	No	40	85		8070	0
Dozer	No	40		81.7	8070	0
Dozer	No	40		81.7	8070	0
Scraper	No	40		83.6	8070	0
Scraper	No	40		83.6	8070	0
Scraper	No	40		83.6	8070	0
Backhoe	No	40		77.6	8070	0
Backhoe	No	40		77.6	8070	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator	36.6	32.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	36.6	32.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	40.8	36.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	40.8	36.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	37.5	33.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	37.5	33.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	39.4	35.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	39.4	35.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	39.4	35.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	33.4	29.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	33.4	29.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	40.8	44.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
North	Industrial	55	50	45

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	450	0
Excavator	No	40		80.7	450	0
Grader	No	40	85		450	0
Grader	No	40	85		450	0
Dozer	No	40		81.7	450	0
Dozer	No	40		81.7	450	0
Scraper	No	40		83.6	450	0
Scraper	No	40		83.6	450	0
Scraper	No	40		83.6	450	0
Backhoe	No	40		77.6	450	0
Backhoe	No	40		77.6	450	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator	61.6	57.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	61.6	57.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	65.9	61.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	65.9	61.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	62.6	58.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	62.6	58.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	64.5	60.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	64.5	60.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	64.5	60.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	58.5	54.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	58.5	54.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	65.9	69.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 2/5/2021
Case Description: Construction Phase

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
North	Residential	55	50	45

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	1400	0
All Other Equipment > 5 HP	No	50	85		1400	0
All Other Equipment > 5 HP	No	50	85		1400	0
All Other Equipment > 5 HP	No	50	85		1400	0
Generator	No	50		80.6	1400	0
Backhoe	No	40		77.6	1400	0
Backhoe	No	40		77.6	1400	0
Backhoe	No	40		77.6	1400	0
Welder / Torch	No	40		74	1400	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	51.6	43.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	56.1	53	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	56.1	53	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	56.1	53	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	51.7	48.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	48.6	44.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	48.6	44.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	48.6	44.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Welder / Torch	45.1	41.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	56.1	59	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Northeast	Residential	55	50	45

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	2450	0
All Other Equipment > 5 HP	No	50	85		2450	0
All Other Equipment > 5 HP	No	50	85		2450	0
All Other Equipment > 5 HP	No	50	85		2450	0
Generator	No	50		80.6	2450	0
Backhoe	No	40		77.6	2450	0
Backhoe	No	40		77.6	2450	0
Backhoe	No	40		77.6	2450	0
Welder / Torch	No	40		74	2450	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	46.7	38.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	51.2	48.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	51.2	48.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	51.2	48.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	46.8	43.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	43.8	39.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	43.8	39.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	43.8	39.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Welder / Torch	40.2	36.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	51.2	54.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Northwest	Residential	55	50	45

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Crane	No	16		80.6	8070	0
All Other Equipment > 5 HP	No	50	85		8070	0
All Other Equipment > 5 HP	No	50	85		8070	0
All Other Equipment > 5 HP	No	50	85		8070	0
Generator	No	50		80.6	8070	0
Backhoe	No	40		77.6	8070	0
Backhoe	No	40		77.6	8070	0
Backhoe	No	40		77.6	8070	0
Welder / Torch	No	40		74	8070	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	36.4	28.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	40.8	37.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	40.8	37.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	40.8	37.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	36.5	33.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	33.4	29.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	33.4	29.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	33.4	29.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Welder / Torch	29.8	25.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	40.8	43.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
North	Industrial	55	50	45

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Crane	No	16		80.6	450	0
All Other Equipment > 5 HP	No	50	85		450	0
All Other Equipment > 5 HP	No	50	85		450	0
All Other Equipment > 5 HP	No	50	85		450	0
Generator	No	50		80.6	450	0
Backhoe	No	40		77.6	450	0
Backhoe	No	40		77.6	450	0
Backhoe	No	40		77.6	450	0
Welder / Torch	No	40		74	450	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	61.5	53.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	65.9	62.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	65.9	62.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	65.9	62.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	61.5	58.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	58.5	54.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	58.5	54.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	58.5	54.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Welder / Torch	54.9	50.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	65.9	68.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 2/5/2021
Case Description: Paving Phase

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
North	Residential	55	50	45

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	1400	0
Paver	No	50		77.2	1400	0
Pavement Scarafier	No	20		89.5	1400	0
Pavement Scarafier	No	20		89.5	1400	0
Roller	No	20		80	1400	0
Roller	No	20		80	1400	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver	48.3	45.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	48.3	45.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pavement Scarafier	60.6	53.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pavement Scarafier	60.6	53.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	51.1	44.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	51.1	44.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	60.6	57.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Northeast	Residential	55	50	45

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	2450	0
Paver	No	50		77.2	2450	0
Pavement Scarafier	No	20		89.5	2450	0
Pavement Scarafier	No	20		89.5	2450	0
Roller	No	20		80	2450	0
Roller	No	20		80	2450	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver	43.4	40.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	43.4	40.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pavement Scarafier	55.7	48.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pavement Scarafier	55.7	48.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	46.2	39.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	46.2	39.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	55.7	52.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Northwest	Residential	55	50	45

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Paver	No	50		77.2	8070	0
Paver	No	50		77.2	8070	0
Pavement Scarafier	No	20		89.5	8070	0
Pavement Scarafier	No	20		89.5	8070	0
Roller	No	20		80	8070	0
Roller	No	20		80	8070	0

Results

		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver		33.1	30.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver		33.1	30.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pavement Scarafier		45.3	38.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pavement Scarafier		45.3	38.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller		35.8	28.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller		35.8	28.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	45.3	42.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
North	Industrial	55	50	45

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Paver	No	50		77.2	450	0
Paver	No	50		77.2	450	0
Pavement Scarafier	No	20		89.5	450	0
Pavement Scarafier	No	20		89.5	450	0
Roller	No	20		80	450	0
Roller	No	20		80	450	0

Results

		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver		58.1	55.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver		58.1	55.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pavement Scarafier		70.4	63.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pavement Scarafier		70.4	63.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller		60.9	53.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller		60.9	53.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	70.4	67.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 2/5/2021
Case Description: Architectural Coating Phase

---- Receptor #1 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
North	Residential	55	50	45

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Compressor (air)	No	40		77.7	1400	0

		Results													
		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)		48.7	44.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	48.7	44.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Northeast	Residential	55	50	45

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Compressor (air)	No	40		77.7	2450	0

		Results													
		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)		43.9	39.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	43.9	39.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Northwest	Residential	55	50	45

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Compressor (air)	No	40		77.7	8070	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	33.5	29.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	33.5	29.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
North	Industrial	55	50	45

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Compressor (air)	No	40		77.7	450	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	58.6	54.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	58.6	54.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels

Project Name: Napa Street - Warehouse
Project Number: 95996010
Scenario: Existing
Ldn/CNEL: CNEL

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

								Vehicle Mix			Distance from Centerline of Roadway			
				Median	ADT	Speed	Alpha	Medium	Heavy	CNEL at	Distance to Contour			
#	Roadway	Segment	Lanes	Width	Volume	(mph)	Factor	Trucks	Trucks	100 Feet	70 CNEL	65 CNEL	60 CNEL	55 CNEL
1	Napa Street	Etiwanda Avenue to Driveway 1	4	0	4,200	45	0	2.0%	1.0%	59.4	-	-	87	275
2	Napa Street	Driveway 1 to Driveway 2	4	0	4,200	45	0	2.0%	1.0%	59.4	-	-	87	275
3	Napa Street	Driveway 2 to Driveway 3	4	0	4,200	45	0	2.0%	1.0%	59.4	-	-	87	275
4	Napa Street	Driveway 3 to Driveway 4	4	0	4,200	45	0	2.0%	1.0%	59.4	-	-	87	275
5	Napa Street	Driveway 4 to Driveway 5	4	0	4,200	45	0	2.0%	1.0%	59.4	-	-	87	275
6	Etiwanda Avenue	Foothill Boulevard to Arrow Route	4	12	14,700	50	0	2.0%	1.0%	66.0	-	125	396	1,254
7	Etiwanda Avenue	Arrow Route to Whittram Avenue	3	12	13,300	55	0	2.0%	1.0%	66.5	45	141	446	1,411
8	Etiwanda Avenue	Whittram Avenue to Napa Street	4	0	15,900	55	0	2.0%	1.0%	67.3	53	169	533	1,687
9	Etiwanda Avenue	Napa Street to 6th Street	4	0	16,100	55	0	2.0%	1.0%	67.3	54	171	540	1,708
10	Etiwanda Avenue	6th Street to 4th Street	4	12	17,700	55	0	2.0%	1.0%	67.8	60	190	602	1,903
11	Etiwanda Avenue	4th Street to Valley Boulevard	4	16	21,000	50	0	2.0%	1.0%	67.6	57	180	569	1,800
12	Etiwanda Avenue	Valley Boulevard to I-10 WB Ramps	6	14	25,800	50	0	2.0%	1.0%	68.6	73	230	727	2,299
13	Etiwanda Avenue	I-10 WB Ramps to I-10 EB Ramps	6	0	26,200	50	0	2.0%	1.0%	68.6	72	227	719	2,274
14	4th Street	I-15 SB Ramps to I-15 NB Ramps	6	0	26,800	55	0	2.0%	1.0%	69.7	93	293	927	2,932
15	4th Street	I-15 NB Ramps to Wineville Avenue	5	16	17,100	55	0	2.0%	1.0%	67.7	60	188	596	1,884
16	4th Street	Wineville Avenue to Barrington Avenue	5	0	14,900	55	0	2.0%	1.0%	67.0	51	160	507	1,602
17	4th Street	Barrington Avenue to Etiwanda Avenue	4	14	14,900	55	0	2.0%	1.0%	67.1	-	161	508	1,606

[1] Distance is from the centerline of the roadway segment to the receptor location.
"-" = contour is located within the roadway right-of-way.

FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels

Project Name: Napa Street - Warehouse
Project Number: 95996010
Scenario: Opening Year
Ldn/CNEL: CNEL

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

								Vehicle Mix		Distance from Centerline of Roadway				
				Median	ADT	Speed	Alpha	Medium	Heavy	CNEL at	Distance to Contour			
#	Roadway	Segment	Lanes	Width	Volume	(mph)	Factor	Trucks	Trucks	100 Feet	70 CNEL	65 CNEL	60 CNEL	55 CNEL
1	Napa Street	Etiwanda Avenue to Driveway 1	4	0	4,400	45	0	2.0%	1.0%	59.6	-	-	91	289
2	Napa Street	Driveway 1 to Driveway 2	4	0	4,400	45	0	2.0%	1.0%	59.6	-	-	91	289
3	Napa Street	Driveway 2 to Driveway 3	4	0	4,400	45	0	2.0%	1.0%	59.6	-	-	91	289
4	Napa Street	Driveway 3 to Driveway 4	4	0	4,400	45	0	2.0%	1.0%	59.6	-	-	91	289
5	Napa Street	Driveway 4 to Driveway 5	4	0	4,400	45	0	2.0%	1.0%	59.6	-	-	91	289
6	Etiwanda Avenue	Foothill Boulevard to Arrow Route	4	12	17,800	50	0	2.0%	1.0%	66.8	-	152	480	1,518
7	Etiwanda Avenue	Arrow Route to Whittram Avenue	3	12	16,100	55	0	2.0%	1.0%	67.3	54	171	540	1,708
8	Etiwanda Avenue	Whittram Avenue to Napa Street	4	0	19,600	55	0	2.0%	1.0%	68.2	66	208	658	2,079
9	Etiwanda Avenue	Napa Street to 6th Street	4	0	19,700	55	0	2.0%	1.0%	68.2	66	209	661	2,090
10	Etiwanda Avenue	6th Street to 4th Street	4	12	21,400	55	0	2.0%	1.0%	68.6	73	230	727	2,301
11	Etiwanda Avenue	4th Street to Valley Boulevard	4	16	23,700	50	0	2.0%	1.0%	68.1	64	203	643	2,032
12	Etiwanda Avenue	Valley Boulevard to I-10 WB Ramps	6	14	28,800	50	0	2.0%	1.0%	69.1	81	257	812	2,566
13	Etiwanda Avenue	I-10 WB Ramps to I-10 EB Ramps	6	0	29,200	50	0	2.0%	1.0%	69.0	80	253	801	2,534
14	4th Street	I-15 SB Ramps to I-15 NB Ramps	6	0	32,600	55	0	2.0%	1.0%	70.5	113	357	1,128	3,566
15	4th Street	I-15 NB Ramps to Wineville Avenue	5	16	22,300	55	0	2.0%	1.0%	68.9	78	246	777	2,456
16	4th Street	Wineville Avenue to Barrington Avenue	5	0	19,900	55	0	2.0%	1.0%	68.3	68	214	677	2,139
17	4th Street	Barrington Avenue to Etiwanda Avenue	4	14	17,700	55	0	2.0%	1.0%	67.8	60	191	603	1,908

[1] Distance is from the centerline of the roadway segment to the receptor location.
"-" = contour is located within the roadway right-of-way.

FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels

Project Name: Napa Street - Warehouse
Project Number: 95996010
Scenario: Opening Year Plus Project
Ldn/CNEL: CNEL

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

								Vehicle Mix		CNEL at	Distance from Centerline of Roadway to Contour			
#	Roadway	Segment	Lanes	Median Width	ADT Volume	Speed (mph)	Alpha Factor	Medium Trucks	Heavy Trucks	100 Feet	70 CNEL	65 CNEL	60 CNEL	55 CNEL
1	Napa Street	Etiwanda Avenue to Driveway 1	4	0	5,366	45	0	2.0%	1.0%	60.5	-	-	111	352
2	Napa Street	Driveway 1 to Driveway 2	4	0	5,234	45	0	2.0%	1.0%	60.4	-	-	109	343
3	Napa Street	Driveway 2 to Driveway 3	4	0	5,104	45	0	2.0%	1.0%	60.2	-	-	106	335
4	Napa Street	Driveway 3 to Driveway 4	4	0	4,882	45	0	2.0%	1.0%	60.1	-	-	101	320
5	Napa Street	Driveway 4 to Driveway 5	4	0	4,708	45	0	2.0%	1.0%	59.9	-	-	98	309
6	Etiwanda Avenue	Foothill Boulevard to Arrow Route	4	12	17,800	50	0	2.0%	1.0%	66.8	-	152	480	1,518
7	Etiwanda Avenue	Arrow Route to Whittram Avenue	3	12	16,100	55	0	2.0%	1.0%	67.3	54	171	540	1,708
8	Etiwanda Avenue	Whittram Avenue to Napa Street	4	0	19,944	55	0	2.0%	1.0%	68.3	67	212	669	2,116
9	Etiwanda Avenue	Napa Street to 6th Street	4	0	20,322	55	0	2.0%	1.0%	68.3	68	216	682	2,156
10	Etiwanda Avenue	6th Street to 4th Street	4	12	22,006	55	0	2.0%	1.0%	68.7	75	237	748	2,366
11	Etiwanda Avenue	4th Street to Valley Boulevard	4	16	23,990	50	0	2.0%	1.0%	68.1	65	206	650	2,057
12	Etiwanda Avenue	Valley Boulevard to I-10 WB Ramps	6	14	28,800	50	0	2.0%	1.0%	69.1	81	257	812	2,566
13	Etiwanda Avenue	I-10 WB Ramps to I-10 EB Ramps	6	0	29,200	50	0	2.0%	1.0%	69.0	80	253	801	2,534
14	4th Street	I-15 SB Ramps to I-15 NB Ramps	6	0	32,773	55	0	2.0%	1.0%	70.5	113	359	1,134	3,585
15	4th Street	I-15 NB Ramps to Wineville Avenue	5	16	22,580	55	0	2.0%	1.0%	69.0	79	249	787	2,487
16	4th Street	Wineville Avenue to Barrington Avenue	5	0	20,180	55	0	2.0%	1.0%	68.4	69	217	686	2,169
17	4th Street	Barrington Avenue to Etiwanda Avenue	4	14	17,980	55	0	2.0%	1.0%	67.9	61	194	613	1,938

[1] Distance is from the centerline of the roadway segment to the receptor location.
"-" = contour is located within the roadway right-of-way.

FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels

Project Name: Napa Street - Warehouse
Project Number: 95996010
Scenario: Horizon Year
Ldn/CNEL: CNEL

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

									Vehicle Mix		Distance from Centerline of Roadway			
				Median	ADT	Speed	Alpha	Medium	Heavy	CNEL at	Distance to Contour			
#	Roadway	Segment	Lanes	Width	Volume	(mph)	Factor	Trucks	Trucks	100 Feet	70 CNEL	65 CNEL	60 CNEL	55 CNEL
1	Napa Street	Etiwanda Avenue to Driveway 1	4	0	5,900	45	0	2.0%	1.0%	60.9	-	-	122	387
2	Napa Street	Driveway 1 to Driveway 2	4	0	5,900	45	0	2.0%	1.0%	60.9	-	-	122	387
3	Napa Street	Driveway 2 to Driveway 3	4	0	5,900	45	0	2.0%	1.0%	60.9	-	-	122	387
4	Napa Street	Driveway 3 to Driveway 4	4	0	5,900	45	0	2.0%	1.0%	60.9	-	-	122	387
5	Napa Street	Driveway 4 to Driveway 5	4	0	5,900	45	0	2.0%	1.0%	60.9	-	-	122	387
6	Etiwanda Avenue	Foothill Boulevard to Arrow Route	4	12	20,100	50	0	2.0%	1.0%	67.3	54	171	542	1,714
7	Etiwanda Avenue	Arrow Route to Whittram Avenue	3	12	20,900	55	0	2.0%	1.0%	68.5	70	222	701	2,217
8	Etiwanda Avenue	Whittram Avenue to Napa Street	4	0	23,600	55	0	2.0%	1.0%	69.0	79	250	792	2,504
9	Etiwanda Avenue	Napa Street to 6th Street	4	0	29,000	55	0	2.0%	1.0%	69.9	97	308	973	3,077
10	Etiwanda Avenue	6th Street to 4th Street	4	12	27,400	55	0	2.0%	1.0%	69.7	93	295	931	2,946
11	Etiwanda Avenue	4th Street to Valley Boulevard	4	16	31,700	50	0	2.0%	1.0%	69.3	86	272	859	2,718
12	Etiwanda Avenue	Valley Boulevard to I-10 WB Ramps	6	14	40,200	50	0	2.0%	1.0%	70.5	113	358	1,133	3,582
13	Etiwanda Avenue	I-10 WB Ramps to I-10 EB Ramps	6	0	41,600	50	0	2.0%	1.0%	70.6	114	361	1,142	3,610
14	4th Street	I-15 SB Ramps to I-15 NB Ramps	6	0	37,500	55	0	2.0%	1.0%	71.1	130	410	1,297	4,103
15	4th Street	I-15 NB Ramps to Wineville Avenue	5	16	26,500	55	0	2.0%	1.0%	69.7	92	292	923	2,919
16	4th Street	Wineville Avenue to Barrington Avenue	5	0	23,700	55	0	2.0%	1.0%	69.1	81	255	806	2,548
17	4th Street	Barrington Avenue to Etiwanda Avenue	4	14	19,700	55	0	2.0%	1.0%	68.3	67	212	671	2,123

[1] Distance is from the centerline of the roadway segment to the receptor location.
"-" = contour is located within the roadway right-of-way.

FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels

Project Name: Napa Street - Warehouse
Project Number: 95996010
Scenario: Horizon Year Plus Project
Ldn/CNEL: CNEL

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

								Vehicle Mix			Distance from Centerline of Roadway			
				Median	ADT	Speed	Alpha	Medium	Heavy	CNEL at	Distance to Contour			
#	Roadway	Segment	Lanes	Width	Volume	(mph)	Factor	Trucks	Trucks	100 Feet	70 CNEL	65 CNEL	60 CNEL	55 CNEL
1	Napa Street	Etiwanda Avenue to Driveway 1	4	0	6,866	45	0	2.0%	1.0%	61.5	-	45	142	450
2	Napa Street	Driveway 1 to Driveway 2	4	0	6,734	45	0	2.0%	1.0%	61.4	-	44	140	442
3	Napa Street	Driveway 2 to Driveway 3	4	0	6,604	45	0	2.0%	1.0%	61.4	-	-	137	433
4	Napa Street	Driveway 3 to Driveway 4	4	0	6,382	45	0	2.0%	1.0%	61.2	-	-	132	418
5	Napa Street	Driveway 4 to Driveway 5	4	0	6,208	45	0	2.0%	1.0%	61.1	-	-	129	407
6	Etiwanda Avenu	Foothill Boulevard to Arrow Route	4	12	20,100	50	0	2.0%	1.0%	67.3	54	171	542	1,714
7	Etiwanda Avenu	Arrow Route to Whittram Avenue	3	12	20,900	55	0	2.0%	1.0%	68.5	70	222	701	2,217
8	Etiwanda Avenu	Whittram Avenue to Napa Street	4	0	23,944	55	0	2.0%	1.0%	69.0	80	254	803	2,540
9	Etiwanda Avenu	Napa Street to 6th Street	4	0	29,622	55	0	2.0%	1.0%	70.0	99	314	994	3,143
10	Etiwanda Avenu	6th Street to 4th Street	4	12	28,006	55	0	2.0%	1.0%	69.8	95	301	952	3,011
11	Etiwanda Avenu	4th Street to Valley Boulevard	4	16	31,990	50	0	2.0%	1.0%	69.4	87	274	867	2,743
12	Etiwanda Avenu	Valley Boulevard to I-10 WB Ramps	6	14	40,200	50	0	2.0%	1.0%	70.5	113	358	1,133	3,582
13	Etiwanda Avenu	I-10 WB Ramps to I-10 EB Ramps	6	0	41,600	50	0	2.0%	1.0%	70.6	114	361	1,142	3,610
14	4th Street	I-15 SB Ramps to I-15 NB Ramps	6	0	37,673	55	0	2.0%	1.0%	71.2	130	412	1,303	4,121
15	4th Street	I-15 NB Ramps to Wineville Avenue	5	16	26,780	55	0	2.0%	1.0%	69.7	93	295	933	2,950
16	4th Street	Wineville Avenue to Barrington Avenue	5	0	23,980	55	0	2.0%	1.0%	69.1	82	258	815	2,578
17	4th Street	Barrington Avenue to Etiwanda Avenue	4	14	19,980	55	0	2.0%	1.0%	68.3	68	215	681	2,153

[1] Distance is from the centerline of the roadway segment to the receptor location.
"-" = contour is located within the roadway right-of-way.

FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels

Project Name: Napa Street - E Commerce
Project Number: 95996010
Scenario: Existing
Ldn/CNEL: CNEL

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

									Vehicle Mix		Distance from Centerline of Roadway			
				Median	ADT	Speed	Alpha	Medium	Heavy	CNEL at	Distance to Contour			
#	Roadway	Segment	Lanes	Width	Volume	(mph)	Factor	Trucks	Trucks	100 Feet	70 CNEL	65 CNEL	60 CNEL	55 CNEL
1	Napa Street	Etiwanda Avenue to Driveway 1	4	0	4,200	45	0	2.0%	1.0%	59.4	-	-	87	275
2	Napa Street	Driveway 1 to Driveway 2	4	0	4,200	45	0	2.0%	1.0%	59.4	-	-	87	275
3	Napa Street	Driveway 2 to Driveway 3	4	0	4,200	45	0	2.0%	1.0%	59.4	-	-	87	275
4	Napa Street	Driveway 3 to Driveway 4	4	0	4,200	45	0	2.0%	1.0%	59.4	-	-	87	275
5	Napa Street	Driveway 4 to Driveway 5	4	0	4,200	45	0	2.0%	1.0%	59.4	-	-	87	275
6	Etiwanda Avenue	Foothill Boulevard to Arrow Route	4	12	14,700	50	0	2.0%	1.0%	66.0	-	125	396	1,254
7	Etiwanda Avenue	Arrow Route to Whittram Avenue	3	12	13,300	55	0	2.0%	1.0%	66.5	45	141	446	1,411
8	Etiwanda Avenue	Whittram Avenue to Napa Street	4	0	15,900	55	0	2.0%	1.0%	67.3	53	169	533	1,687
9	Etiwanda Avenue	Napa Street to 6th Street	4	0	16,100	55	0	2.0%	1.0%	67.3	54	171	540	1,708
10	Etiwanda Avenue	6th Street to 4th Street	4	12	17,700	55	0	2.0%	1.0%	67.8	60	190	602	1,903
11	Etiwanda Avenue	4th Street to Valley Boulevard	4	16	21,000	50	0	2.0%	1.0%	67.6	57	180	569	1,800
12	Etiwanda Avenue	Valley Boulevard to I-10 WB Ramps	6	14	25,800	50	0	2.0%	1.0%	68.6	73	230	727	2,299
13	Etiwanda Avenue	I-10 WB Ramps to I-10 EB Ramps	6	0	26,200	50	0	2.0%	1.0%	68.6	72	227	719	2,274
14	4th Street	I-15 SB Ramps to I-15 NB Ramps	6	0	26,800	55	0	2.0%	1.0%	69.7	93	293	927	2,932
15	4th Street	I-15 NB Ramps to Wineville Avenue	5	16	17,100	55	0	2.0%	1.0%	67.7	60	188	596	1,884
16	4th Street	Wineville Avenue to Barrington Avenue	5	0	14,900	55	0	2.0%	1.0%	67.0	51	160	507	1,602
17	4th Street	Barrington Avenue to Etiwanda Avenue	4	14	14,900	55	0	2.0%	1.0%	67.1	-	161	508	1,606

[1] Distance is from the centerline of the roadway segment to the receptor location.
"-" = contour is located within the roadway right-of-way.

FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels

Project Name: Napa Street - E Commerce
Project Number: 95996010
Scenario: Opening Year
Ldn/CNEL: CNEL

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

									Vehicle Mix		Distance from Centerline of Roadway			
				Median	ADT	Speed	Alpha	Medium	Heavy	CNEL at	Distance to Contour			
#	Roadway	Segment	Lanes	Width	Volume	(mph)	Factor	Trucks	Trucks	100 Feet	70 CNEL	65 CNEL	60 CNEL	55 CNEL
1	Napa Street	Etiwanda Avenue to Driveway 1	4	0	4,400	45	0	2.0%	1.0%	59.6	-	-	91	289
2	Napa Street	Driveway 1 to Driveway 2	4	0	4,400	45	0	2.0%	1.0%	59.6	-	-	91	289
3	Napa Street	Driveway 2 to Driveway 3	4	0	4,400	45	0	2.0%	1.0%	59.6	-	-	91	289
4	Napa Street	Driveway 3 to Driveway 4	4	0	4,400	45	0	2.0%	1.0%	59.6	-	-	91	289
5	Napa Street	Driveway 4 to Driveway 5	4	0	4,400	45	0	2.0%	1.0%	59.6	-	-	91	289
6	Etiwanda Avenue	Foothill Boulevard to Arrow Route	4	12	17,800	50	0	2.0%	1.0%	66.8	-	152	480	1,518
7	Etiwanda Avenue	Arrow Route to Whittram Avenue	3	12	16,100	55	0	2.0%	1.0%	67.3	54	171	540	1,708
8	Etiwanda Avenue	Whittram Avenue to Napa Street	4	0	19,600	55	0	2.0%	1.0%	68.2	66	208	658	2,079
9	Etiwanda Avenue	Napa Street to 6th Street	4	0	19,700	55	0	2.0%	1.0%	68.2	66	209	661	2,090
10	Etiwanda Avenue	6th Street to 4th Street	4	12	21,400	55	0	2.0%	1.0%	68.6	73	230	727	2,301
11	Etiwanda Avenue	4th Street to Valley Boulevard	4	16	23,700	50	0	2.0%	1.0%	68.1	64	203	643	2,032
12	Etiwanda Avenue	Valley Boulevard to I-10 WB Ramps	6	14	28,800	50	0	2.0%	1.0%	69.1	81	257	812	2,566
13	Etiwanda Avenue	I-10 WB Ramps to I-10 EB Ramps	6	0	29,200	50	0	2.0%	1.0%	69.0	80	253	801	2,534
14	4th Street	I-15 SB Ramps to I-15 NB Ramps	6	0	32,600	55	0	2.0%	1.0%	70.5	113	357	1,128	3,566
15	4th Street	I-15 NB Ramps to Wineville Avenue	5	16	22,300	55	0	2.0%	1.0%	68.9	78	246	777	2,456
16	4th Street	Wineville Avenue to Barrington Avenue	5	0	19,900	55	0	2.0%	1.0%	68.3	68	214	677	2,139
17	4th Street	Barrington Avenue to Etiwanda Avenue	4	14	17,700	55	0	2.0%	1.0%	67.8	60	191	603	1,908

[1] Distance is from the centerline of the roadway segment to the receptor location.
"-" = contour is located within the roadway right-of-way.

FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels

Project Name: Napa Street - E Commerce
Project Number: 95996010
Scenario: Opening Year Plus Project
Ldn/CNEL: CNEL

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

									Vehicle Mix		Distance from Centerline of Roadway			
				Median	ADT	Speed	Alpha	Medium	Heavy	CNEL at	Distance to Contour			
#	Roadway	Segment	Lanes	Width	Volume	(mph)	Factor	Trucks	Trucks	100 Feet	70 CNEL	65 CNEL	60 CNEL	55 CNEL
1	Napa Street	Etiwanda Avenue to Driveway 1	4	0	6,886	45	0	2.0%	1.0%	61.5	-	45	143	452
2	Napa Street	Driveway 1 to Driveway 2	4	0	5,588	45	0	2.0%	1.0%	60.6	-	-	116	366
3	Napa Street	Driveway 2 to Driveway 3	4	0	5,048	45	0	2.0%	1.0%	60.2	-	-	105	331
4	Napa Street	Driveway 3 to Driveway 4	4	0	4,832	45	0	2.0%	1.0%	60.0	-	-	100	317
5	Napa Street	Driveway 4 to Driveway 5	4	0	4,724	45	0	2.0%	1.0%	59.9	-	-	98	310
6	Etiwanda Avenue	Foothill Boulevard to Arrow Route	4	12	18,378	50	0	2.0%	1.0%	67.0	-	157	496	1,567
7	Etiwanda Avenue	Arrow Route to Whittram Avenue	3	12	16,914	55	0	2.0%	1.0%	67.5	57	179	567	1,794
8	Etiwanda Avenue	Whittram Avenue to Napa Street	4	0	20,588	55	0	2.0%	1.0%	68.4	69	218	691	2,184
9	Etiwanda Avenue	Napa Street to 6th Street	4	0	21,196	55	0	2.0%	1.0%	68.5	71	225	711	2,249
10	Etiwanda Avenue	6th Street to 4th Street	4	12	22,356	55	0	2.0%	1.0%	68.8	76	240	760	2,403
11	Etiwanda Avenue	4th Street to Valley Boulevard	4	16	24,450	50	0	2.0%	1.0%	68.2	66	210	663	2,096
12	Etiwanda Avenue	Valley Boulevard to I-10 WB Ramps	6	14	29,323	50	0	2.0%	1.0%	69.2	83	261	826	2,613
13	Etiwanda Avenue	I-10 WB Ramps to I-10 EB Ramps	6	0	29,888	50	0	2.0%	1.0%	69.1	82	259	820	2,594
14	4th Street	I-15 SB Ramps to I-15 NB Ramps	6	0	32,973	55	0	2.0%	1.0%	70.6	114	361	1,141	3,607
15	4th Street	I-15 NB Ramps to Wineville Avenue	5	16	22,808	55	0	2.0%	1.0%	69.0	79	251	794	2,512
16	4th Street	Wineville Avenue to Barrington Avenue	5	0	20,408	55	0	2.0%	1.0%	68.4	69	219	694	2,194
17	4th Street	Barrington Avenue to Etiwanda Avenue	4	14	18,208	55	0	2.0%	1.0%	67.9	62	196	621	1,962

[1] Distance is from the centerline of the roadway segment to the receptor location.
"-" = contour is located within the roadway right-of-way.

FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels

Project Name: Napa Street - E Commerce
Project Number: 95996010
Scenario: Horizon Year
Ldn/CNEL: CNEL

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

									Vehicle Mix		Distance from Centerline of Roadway			
				Median	ADT	Speed	Alpha	Medium	Heavy	CNEL at	Distance to Contour			
#	Roadway	Segment	Lanes	Width	Volume	(mph)	Factor	Trucks	Trucks	100 Feet	70 CNEL	65 CNEL	60 CNEL	55 CNEL
1	Napa Street	Etiwanda Avenue to Driveway 1	4	0	5,900	45	0	2.0%	1.0%	60.9	-	-	122	387
2	Napa Street	Driveway 1 to Driveway 2	4	0	5,900	45	0	2.0%	1.0%	60.9	-	-	122	387
3	Napa Street	Driveway 2 to Driveway 3	4	0	5,900	45	0	2.0%	1.0%	60.9	-	-	122	387
4	Napa Street	Driveway 3 to Driveway 4	4	0	5,900	45	0	2.0%	1.0%	60.9	-	-	122	387
5	Napa Street	Driveway 4 to Driveway 5	4	0	5,900	45	0	2.0%	1.0%	60.9	-	-	122	387
6	Etiwanda Avenue	Foothill Boulevard to Arrow Route	4	12	20,100	50	0	2.0%	1.0%	67.3	54	171	542	1,714
7	Etiwanda Avenue	Arrow Route to Whittram Avenue	3	12	20,900	55	0	2.0%	1.0%	68.5	70	222	701	2,217
8	Etiwanda Avenue	Whittram Avenue to Napa Street	4	0	23,600	55	0	2.0%	1.0%	69.0	79	250	792	2,504
9	Etiwanda Avenue	Napa Street to 6th Street	4	0	29,000	55	0	2.0%	1.0%	69.9	97	308	973	3,077
10	Etiwanda Avenue	6th Street to 4th Street	4	12	27,400	55	0	2.0%	1.0%	69.7	93	295	931	2,946
11	Etiwanda Avenue	4th Street to Valley Boulevard	4	16	31,700	50	0	2.0%	1.0%	69.3	86	272	859	2,718
12	Etiwanda Avenue	Valley Boulevard to I-10 WB Ramps	6	14	40,200	50	0	2.0%	1.0%	70.5	113	358	1,133	3,582
13	Etiwanda Avenue	I-10 WB Ramps to I-10 EB Ramps	6	0	41,600	50	0	2.0%	1.0%	70.6	114	361	1,142	3,610
14	4th Street	I-15 SB Ramps to I-15 NB Ramps	6	0	37,500	55	0	2.0%	1.0%	71.1	130	410	1,297	4,103
15	4th Street	I-15 NB Ramps to Wineville Avenue	5	16	26,500	55	0	2.0%	1.0%	69.7	92	292	923	2,919
16	4th Street	Wineville Avenue to Barrington Avenue	5	0	23,700	55	0	2.0%	1.0%	69.1	81	255	806	2,548
17	4th Street	Barrington Avenue to Etiwanda Avenue	4	14	19,700	55	0	2.0%	1.0%	68.3	67	212	671	2,123

[1] Distance is from the centerline of the roadway segment to the receptor location.
"-" = contour is located within the roadway right-of-way.

FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels

Project Name: Napa Street - E Commerce
Project Number: 95996010
Scenario: Horizon Year Plus Project
Ldn/CNEL: CNEL

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

									Vehicle Mix		Distance from Centerline of Roadway		
				Median	ADT	Speed	Alpha	Medium	Heavy	CNEL at	Distance to Contour			
#	Roadway	Segment	Lanes	Width	Volume	(mph)	Factor	Trucks	Trucks	100 Feet	70 CNEL	65 CNEL	60 CNEL	55 CNEL
1	Napa Street	Etiwanda Avenue to Driveway 1	4	0	8,386	45	0	2.0%	1.0%	62.4	-	55	174	550
2	Napa Street	Driveway 1 to Driveway 2	4	0	7,088	45	0	2.0%	1.0%	61.7	-	46	147	465
3	Napa Street	Driveway 2 to Driveway 3	4	0	6,548	45	0	2.0%	1.0%	61.3	-	-	136	429
4	Napa Street	Driveway 3 to Driveway 4	4	0	6,332	45	0	2.0%	1.0%	61.2	-	-	131	415
5	Napa Street	Driveway 4 to Driveway 5	4	0	6,224	45	0	2.0%	1.0%	61.1	-	-	129	408
6	Etiwanda Avenue	Foothill Boulevard to Arrow Route	4	12	20,678	50	0	2.0%	1.0%	67.5	56	176	558	1,763
7	Etiwanda Avenue	Arrow Route to Whittram Avenue	3	12	21,714	55	0	2.0%	1.0%	68.6	73	230	728	2,304
8	Etiwanda Avenue	Whittram Avenue to Napa Street	4	0	24,588	55	0	2.0%	1.0%	69.2	82	261	825	2,609
9	Etiwanda Avenue	Napa Street to 6th Street	4	0	30,496	55	0	2.0%	1.0%	70.1	102	324	1,023	3,235
10	Etiwanda Avenue	6th Street to 4th Street	4	12	28,356	55	0	2.0%	1.0%	69.8	96	305	964	3,048
11	Etiwanda Avenue	4th Street to Valley Boulevard	4	16	32,450	50	0	2.0%	1.0%	69.4	88	278	880	2,782
12	Etiwanda Avenue	Valley Boulevard to I-10 WB Ramps	6	14	40,723	50	0	2.0%	1.0%	70.6	115	363	1,148	3,629
13	Etiwanda Avenue	I-10 WB Ramps to I-10 EB Ramps	6	0	42,288	50	0	2.0%	1.0%	70.6	116	367	1,161	3,670
14	4th Street	I-15 SB Ramps to I-15 NB Ramps	6	0	37,873	55	0	2.0%	1.0%	71.2	131	414	1,310	4,143
15	4th Street	I-15 NB Ramps to Wineville Avenue	5	16	27,008	55	0	2.0%	1.0%	69.7	94	298	941	2,975
16	4th Street	Wineville Avenue to Barrington Avenue	5	0	24,208	55	0	2.0%	1.0%	69.2	82	260	823	2,602
17	4th Street	Barrington Avenue to Etiwanda Avenue	4	14	20,208	55	0	2.0%	1.0%	68.4	69	218	689	2,178

[1] Distance is from the centerline of the roadway segment to the receptor location.
"-" = contour is located within the roadway right-of-way.

FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels

Project Name: Napa Street - 2 Bldg E Commerce
Project Number: 95996010
Scenario: Existing
Ldn/CNEL: CNEL

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

								Vehicle Mix			Distance from Centerline of Roadway			
				Median	ADT	Speed	Alpha	Medium	Heavy	CNEL at	Distance to Contour			
#	Roadway	Segment	Lanes	Width	Volume	(mph)	Factor	Trucks	Trucks	100 Feet	70 CNEL	65 CNEL	60 CNEL	55 CNEL
1	Napa Street	Etiwanda Avenue to Driveway 1	4	0	4,200	45	0	2.0%	1.0%	59.4	-	-	87	275
2	Napa Street	Driveway 1 to Driveway 2	4	0	4,200	45	0	2.0%	1.0%	59.4	-	-	87	275
3	Napa Street	Driveway 2 to Driveway 3	4	0	4,200	45	0	2.0%	1.0%	59.4	-	-	87	275
4	Napa Street	Driveway 3 to Driveway 4	4	0	4,200	45	0	2.0%	1.0%	59.4	-	-	87	275
5	Napa Street	Driveway 4 to Driveway 5	4	0	4,200	45	0	2.0%	1.0%	59.4	-	-	87	275
6	Etiwanda Avenue	Foothill Boulevard to Arrow Route	4	12	14,700	50	0	2.0%	1.0%	66.0	-	125	396	1,254
7	Etiwanda Avenue	Arrow Route to Whittram Avenue	3	12	13,300	55	0	2.0%	1.0%	66.5	45	141	446	1,411
8	Etiwanda Avenue	Whittram Avenue to Napa Street	4	0	15,900	55	0	2.0%	1.0%	67.3	53	169	533	1,687
9	Etiwanda Avenue	Napa Street to 6th Street	4	0	16,100	55	0	2.0%	1.0%	67.3	54	171	540	1,708
10	Etiwanda Avenue	6th Street to 4th Street	4	12	17,700	55	0	2.0%	1.0%	67.8	60	190	602	1,903
11	Etiwanda Avenue	4th Street to Valley Boulevard	4	16	21,000	50	0	2.0%	1.0%	67.6	57	180	569	1,800
12	Etiwanda Avenue	Valley Boulevard to I-10 WB Ramps	6	14	25,800	50	0	2.0%	1.0%	68.6	73	230	727	2,299
13	Etiwanda Avenue	I-10 WB Ramps to I-10 EB Ramps	6	0	26,200	50	0	2.0%	1.0%	68.6	72	227	719	2,274
14	4th Street	I-15 SB Ramps to I-15 NB Ramps	6	0	26,800	55	0	2.0%	1.0%	69.7	93	293	927	2,932
15	4th Street	I-15 NB Ramps to Wineville Avenue	5	16	17,100	55	0	2.0%	1.0%	67.7	60	188	596	1,884
16	4th Street	Wineville Avenue to Barrington Avenue	5	0	14,900	55	0	2.0%	1.0%	67.0	51	160	507	1,602
17	4th Street	Barrington Avenue to Etiwanda Avenue	4	14	14,900	55	0	2.0%	1.0%	67.1	-	161	508	1,606

[1] Distance is from the centerline of the roadway segment to the receptor location.
"-" = contour is located within the roadway right-of-way.

FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels

Project Name: Napa Street - 2 Bldg E Commerce
Project Number: 95996010
Scenario: Opening Year
Ldn/CNEL: CNEL

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

									Vehicle Mix		Distance from Centerline of Roadway			
				Median	ADT	Speed	Alpha	Medium	Heavy	CNEL at	Distance to Contour			
#	Roadway	Segment	Lanes	Width	Volume	(mph)	Factor	Trucks	Trucks	100 Feet	70 CNEL	65 CNEL	60 CNEL	55 CNEL
1	Napa Street	Etiwanda Avenue to Driveway 1	4	0	4,400	45	0	2.0%	1.0%	59.6	-	-	91	289
2	Napa Street	Driveway 1 to Driveway 2	4	0	4,400	45	0	2.0%	1.0%	59.6	-	-	91	289
3	Napa Street	Driveway 2 to Driveway 3	4	0	4,400	45	0	2.0%	1.0%	59.6	-	-	91	289
4	Napa Street	Driveway 3 to Driveway 4	4	0	4,400	45	0	2.0%	1.0%	59.6	-	-	91	289
5	Napa Street	Driveway 4 to Driveway 5	4	0	4,400	45	0	2.0%	1.0%	59.6	-	-	91	289
6	Etiwanda Avenue	Foothill Boulevard to Arrow Route	4	12	17,800	50	0	2.0%	1.0%	66.8	-	152	480	1,518
7	Etiwanda Avenue	Arrow Route to Whittram Avenue	3	12	16,100	55	0	2.0%	1.0%	67.3	54	171	540	1,708
8	Etiwanda Avenue	Whittram Avenue to Napa Street	4	0	19,600	55	0	2.0%	1.0%	68.2	66	208	658	2,079
9	Etiwanda Avenue	Napa Street to 6th Street	4	0	19,700	55	0	2.0%	1.0%	68.2	66	209	661	2,090
10	Etiwanda Avenue	6th Street to 4th Street	4	12	21,400	55	0	2.0%	1.0%	68.6	73	230	727	2,301
11	Etiwanda Avenue	4th Street to Valley Boulevard	4	16	23,700	50	0	2.0%	1.0%	68.1	64	203	643	2,032
12	Etiwanda Avenue	Valley Boulevard to I-10 WB Ramps	6	14	28,800	50	0	2.0%	1.0%	69.1	81	257	812	2,566
13	Etiwanda Avenue	I-10 WB Ramps to I-10 EB Ramps	6	0	29,200	50	0	2.0%	1.0%	69.0	80	253	801	2,534
14	4th Street	I-15 SB Ramps to I-15 NB Ramps	6	0	32,600	55	0	2.0%	1.0%	70.5	113	357	1,128	3,566
15	4th Street	I-15 NB Ramps to Wineville Avenue	5	16	22,300	55	0	2.0%	1.0%	68.9	78	246	777	2,456
16	4th Street	Wineville Avenue to Barrington Avenue	5	0	19,900	55	0	2.0%	1.0%	68.3	68	214	677	2,139
17	4th Street	Barrington Avenue to Etiwanda Avenue	4	14	17,700	55	0	2.0%	1.0%	67.8	60	191	603	1,908

[1] Distance is from the centerline of the roadway segment to the receptor location.
"-" = contour is located within the roadway right-of-way.

FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels

Project Name: Napa Street - 2 Bldg E Commerce
Project Number: 95996010
Scenario: Opening Year Plus Project
Ldn/CNEL: CNEL

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

									Vehicle Mix		Distance from Centerline of Roadway			
				Median	ADT	Speed	Alpha	Medium	Heavy	CNEL at	Distance to Contour			
#	Roadway	Segment	Lanes	Width	Volume	(mph)	Factor	Trucks	Trucks	100 Feet	70 CNEL	65 CNEL	60 CNEL	55 CNEL
1	Napa Street	Etiwanda Avenue to Driveway 1	4	0	11,400	45	0	2.0%	1.0%	63.7	-	75	236	747
2	Napa Street	Driveway 1 to Driveway 2	4	0	10,600	45	0	2.0%	1.0%	63.4	-	70	220	695
3	Napa Street	Driveway 2 to Driveway 3	4	0	9,700	45	0	2.0%	1.0%	63.0	-	64	201	636
4	Napa Street	Driveway 3 to Driveway 4	4	0	8,600	45	0	2.0%	1.0%	62.5	-	56	178	564
5	Napa Street	Driveway 4 to Driveway 5	4	0	6,500	45	0	2.0%	1.0%	61.3	-	-	135	426
6	Etiwanda Avenu	Foothill Boulevard to Arrow Route	4	12	20,200	50	0	2.0%	1.0%	67.4	54	172	545	1,723
7	Etiwanda Avenu	Arrow Route to Whittram Avenue	3	12	19,100	55	0	2.0%	1.0%	68.1	64	203	641	2,026
8	Etiwanda Avenu	Whittram Avenue to Napa Street	4	0	22,600	55	0	2.0%	1.0%	68.8	76	240	758	2,398
9	Etiwanda Avenu	Napa Street to 6th Street	4	0	23,600	55	0	2.0%	1.0%	69.0	79	250	792	2,504
10	Etiwanda Avenu	6th Street to 4th Street	4	12	25,300	55	0	2.0%	1.0%	69.3	86	272	860	2,720
11	Etiwanda Avenu	4th Street to Valley Boulevard	4	16	25,800	50	0	2.0%	1.0%	68.4	70	221	699	2,212
12	Etiwanda Avenu	Valley Boulevard to I-10 WB Ramps	6	14	30,900	50	0	2.0%	1.0%	69.4	87	275	871	2,754
13	Etiwanda Avenu	I-10 WB Ramps to I-10 EB Ramps	6	0	30,300	50	0	2.0%	1.0%	69.2	83	263	832	2,630
14	4th Street	I-15 SB Ramps to I-15 NB Ramps	6	0	33,600	55	0	2.0%	1.0%	70.7	116	368	1,162	3,676
15	4th Street	I-15 NB Ramps to Wineville Avenue	5	16	23,800	55	0	2.0%	1.0%	69.2	83	262	829	2,622
16	4th Street	Wineville Avenue to Barrington Avenue	5	0	21,400	55	0	2.0%	1.0%	68.6	73	230	727	2,301
17	4th Street	Barrington Avenue to Etiwanda Avenue	4	14	19,200	55	0	2.0%	1.0%	68.2	65	207	654	2,069

[1] Distance is from the centerline of the roadway segment to the receptor location.
"-" = contour is located within the roadway right-of-way.

FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels

Project Name: Napa Street - 2 Bldg E Commerce
Project Number: 95996010
Scenario: Horizon Year
Ldn/CNEL: CNEL

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

									Vehicle Mix		Distance from Centerline of Roadway			
				Median	ADT	Speed	Alpha	Medium	Heavy	CNEL at	Distance to Contour			
#	Roadway	Segment	Lanes	Width	Volume	(mph)	Factor	Trucks	Trucks	100 Feet	70 CNEL	65 CNEL	60 CNEL	55 CNEL
1	Napa Street	Etiwanda Avenue to Driveway 1	4	0	5,900	45	0	2.0%	1.0%	60.9	-	-	122	387
2	Napa Street	Driveway 1 to Driveway 2	4	0	5,900	45	0	2.0%	1.0%	60.9	-	-	122	387
3	Napa Street	Driveway 2 to Driveway 3	4	0	5,900	45	0	2.0%	1.0%	60.9	-	-	122	387
4	Napa Street	Driveway 3 to Driveway 4	4	0	5,900	45	0	2.0%	1.0%	60.9	-	-	122	387
5	Napa Street	Driveway 4 to Driveway 5	4	0	5,900	45	0	2.0%	1.0%	60.9	-	-	122	387
6	Etiwanda Avenue	Foothill Boulevard to Arrow Route	4	12	20,100	50	0	2.0%	1.0%	67.3	54	171	542	1,714
7	Etiwanda Avenue	Arrow Route to Whittram Avenue	3	12	20,900	55	0	2.0%	1.0%	68.5	70	222	701	2,217
8	Etiwanda Avenue	Whittram Avenue to Napa Street	4	0	23,600	55	0	2.0%	1.0%	69.0	79	250	792	2,504
9	Etiwanda Avenue	Napa Street to 6th Street	4	0	29,000	55	0	2.0%	1.0%	69.9	97	308	973	3,077
10	Etiwanda Avenue	6th Street to 4th Street	4	12	27,400	55	0	2.0%	1.0%	69.7	93	295	931	2,946
11	Etiwanda Avenue	4th Street to Valley Boulevard	4	16	31,700	50	0	2.0%	1.0%	69.3	86	272	859	2,718
12	Etiwanda Avenue	Valley Boulevard to I-10 WB Ramps	6	14	40,200	50	0	2.0%	1.0%	70.5	113	358	1,133	3,582
13	Etiwanda Avenue	I-10 WB Ramps to I-10 EB Ramps	6	0	41,600	50	0	2.0%	1.0%	70.6	114	361	1,142	3,610
14	4th Street	I-15 SB Ramps to I-15 NB Ramps	6	0	37,500	55	0	2.0%	1.0%	71.1	130	410	1,297	4,103
15	4th Street	I-15 NB Ramps to Wineville Avenue	5	16	26,500	55	0	2.0%	1.0%	69.7	92	292	923	2,919
16	4th Street	Wineville Avenue to Barrington Avenue	5	0	23,700	55	0	2.0%	1.0%	69.1	81	255	806	2,548
17	4th Street	Barrington Avenue to Etiwanda Avenue	4	14	19,700	55	0	2.0%	1.0%	68.3	67	212	671	2,123

[1] Distance is from the centerline of the roadway segment to the receptor location.
"-" = contour is located within the roadway right-of-way.

FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels

Project Name: Napa Street - 2 Bldg E Commerce
Project Number: 95996010
Scenario: Horizon Year Plus Project
Ldn/CNEL: CNEL

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

									Vehicle Mix		Distance from Centerline of Roadway			
				Median	ADT	Speed	Alpha	Medium	Heavy	CNEL at	Distance to Contour			
#	Roadway	Segment	Lanes	Width	Volume	(mph)	Factor	Trucks	Trucks	100 Feet	70 CNEL	65 CNEL	60 CNEL	55 CNEL
1	Napa Street	Etiwanda Avenue to Driveway 1	4	0	12,900	45	0	2.0%	1.0%	64.3	-	85	267	846
2	Napa Street	Driveway 1 to Driveway 2	4	0	12,100	45	0	2.0%	1.0%	64.0	-	79	251	793
3	Napa Street	Driveway 2 to Driveway 3	4	0	11,200	45	0	2.0%	1.0%	63.7	-	73	232	734
4	Napa Street	Driveway 3 to Driveway 4	4	0	10,100	45	0	2.0%	1.0%	63.2	-	66	209	662
5	Napa Street	Driveway 4 to Driveway 5	4	0	8,000	45	0	2.0%	1.0%	62.2	-	52	166	525
6	Etiwanda Avenu	Foothill Boulevard to Arrow Route	4	12	22,500	50	0	2.0%	1.0%	67.8	61	192	607	1,919
7	Etiwanda Avenu	Arrow Route to Whittram Avenue	3	12	23,900	55	0	2.0%	1.0%	69.0	80	254	802	2,536
8	Etiwanda Avenu	Whittram Avenue to Napa Street	4	0	26,600	55	0	2.0%	1.0%	69.5	89	282	892	2,822
9	Etiwanda Avenu	Napa Street to 6th Street	4	0	32,900	55	0	2.0%	1.0%	70.4	110	349	1,104	3,490
10	Etiwanda Avenu	6th Street to 4th Street	4	12	31,100	55	0	2.0%	1.0%	70.2	106	334	1,057	3,343
11	Etiwanda Avenu	4th Street to Valley Boulevard	4	16	33,800	50	0	2.0%	1.0%	69.6	92	290	916	2,898
12	Etiwanda Avenu	Valley Boulevard to I-10 WB Ramps	6	14	42,300	50	0	2.0%	1.0%	70.8	119	377	1,192	3,770
13	Etiwanda Avenu	I-10 WB Ramps to I-10 EB Ramps	6	0	42,700	50	0	2.0%	1.0%	70.7	117	371	1,172	3,706
14	4th Street	I-15 SB Ramps to I-15 NB Ramps	6	0	38,100	55	0	2.0%	1.0%	71.2	132	417	1,318	4,168
15	4th Street	I-15 NB Ramps to Wineville Avenue	5	16	27,600	55	0	2.0%	1.0%	69.8	96	304	961	3,040
16	4th Street	Wineville Avenue to Barrington Avenue	5	0	24,800	55	0	2.0%	1.0%	69.3	84	267	843	2,666
17	4th Street	Barrington Avenue to Etiwanda Avenue	4	14	20,800	55	0	2.0%	1.0%	68.5	71	224	709	2,242

[1] Distance is from the centerline of the roadway segment to the receptor location.
"-" = contour is located within the roadway right-of-way.