APPENDIX K

Acoustical Assessment
Speedway Commerce Center II Specific Plan Project
San Bernardino County, 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
CSMA	California Subdivision Map Act
CNEL	community equivalent noise level
L_{dn}	day-night noise level
dB	decibel
du/ac	dwelling units per acre
L_{eq}	equivalent noise level
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
HVAC	heating ventilation and air conditioning
Hz	hertz
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 II Specific Plan Project (Project). The purpose of this Acoustical Assessment is to evaluate the potential construction and operational noise and vibration levels associated with the Project and determine the level of impact the Project would have on the environment.

1.1 Project Location

The Project site is in an unincorporated area of southwestern San Bernardino County and within the City of Fontana Sphere of Influence (SOI). The Project site is approximately 40 miles east of downtown Los Angeles, 20 miles west of downtown San Bernardino, and 30 miles northeast of central Orange County. The approximately 522.30-acre site is located north of the San Bernardino Freeway (I-10) and San Bernardino Avenue and is bounded by Cherry Avenue to the east, the Burlington Northern and Santa Fe (BNSF) Railroad to the north, the West Valley Materials Recycling Facility to the west, and California Steel Industries to the south.

The City of Fontana is located to the north, east, and south of the site. The City of Rancho Cucamonga is located to the west and northwest and the City of Ontario is located to the southwest, as shown in Exhibit 1: Regional Vicinity and Exhibit 2: Site Vicinity.

1.2 Project Description

The Project encompasses approximately 433 acres of the approximately 522-acre site that is currently developed with the Auto Club Speedway (ACS), formerly known as the California Speedway, in the County. The Project proposes conceptual land uses that include, but are not limited to, approximately 6.6 million square feet of high cube warehouse and e-commerce uses with approximately 12 acres (261,000 sf) of accessory commercial uses. The Project site would also be developed with greenbelts, public roads, other support amenity features, and water detention areas. The Project would surround the separate Next Gen in California Project, which was approved by the County on June 7, 2021; see Exhibit 3: Conceptual Site Plan. Construction of the Project, including recordation of final subdivision map(s) and design review may be progressively implemented in stages, provided that vehicular access, public facilities, and infrastructure are constructed to adequately service the development, or as needed for public health and safety. However, the actual phasing sequence and time-frame may vary depending on market conditions.

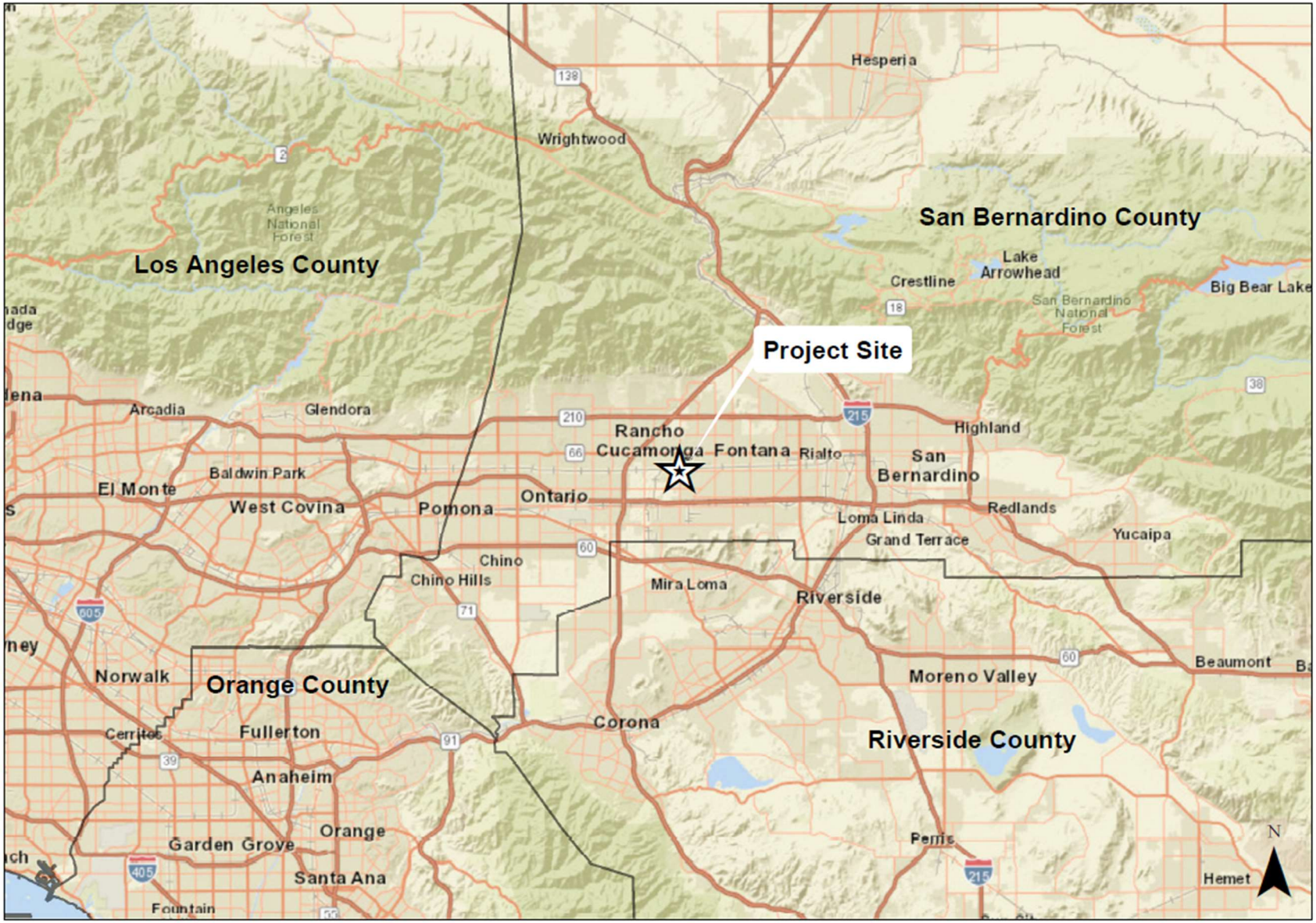
The current county land use category is C-Commercial and the zoning for the Project site is SD-COM-Special Development-Commercial. Table 1: Proposed Land Uses shows the summary of the proposed land uses and attributed areas. Parking would be scattered throughout the site and located on the north, west, east, south, and center portions of the Project site. The proposed Project would dedicate 78.5 acres to Parking Fields/Drop Lots.

Table 1: Proposed Land Uses

Land Use	Speedway Commerce SP	Planning Area(s)
Warehouse	281.5 acres/approximately 6.6 million sq.ft.	PA 1a, PA 2a, PA 3a and PA 4a
Accessory Commercial	30[1] acres/261,360 sq.ft.	PA 5a, PA 1c, PA 2c
Parking Field/Drop Out	78.5 acres	PA 1b, PA 2b, PA 3b, PA 4c, PA 5b, PA 6a, PA 6b, PA 6c
Open Space/Basin	9 acres	PA 4b and PA 5c
Public Right-of-Way	33.5 acres	NA
Total	432.5 acres	NA

Source: Kimley-Horn. 2021, *Speedway Commerce Center II Specific Plan*, Table 3-1: Land Use, 2021.
1. Includes approximately 23.5 acres of parking field/drop lot. Total potential parking/drop lot areas is 101 acres.

Exhibit 1: Regional Vicinity



Source: ESRI World Street Map

Exhibit 2: Site Vicinity

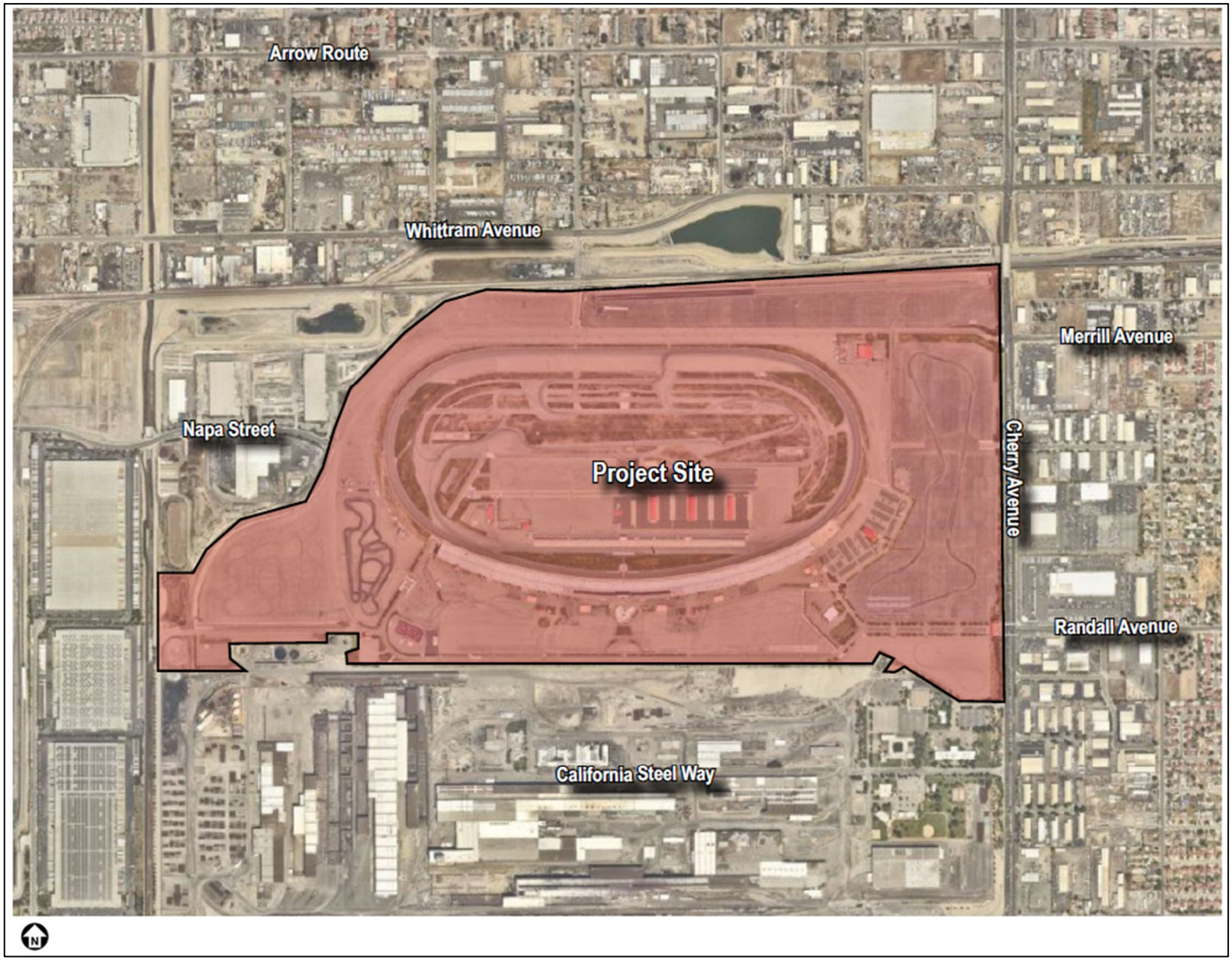
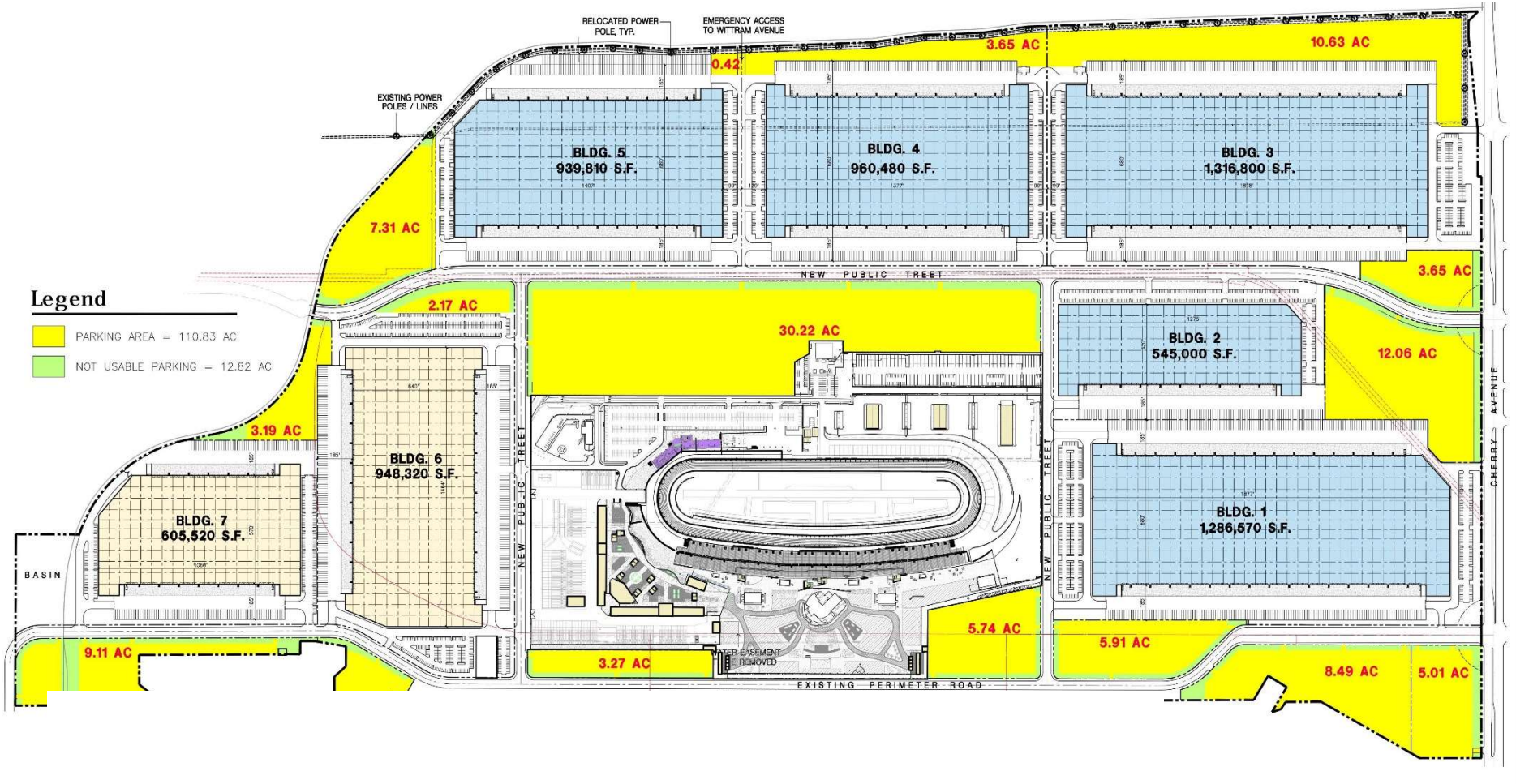


Exhibit 3: Conceptual Site Plan



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 micropascals (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. 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. While the equivalent noise level (L_{eq}) represents the continuous sound pressure level over a given time period, the day-night noise level (L_{dn}) and Community Equivalent Noise Level (CNEL) are measures of energy average during a 24-hour period, with dB weighted sound levels from 7:00 p.m. to 7:00 a.m. 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 pascals 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 a.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.

Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound (L_{eq}) or the statistical behavior of the variations (L_{xx}) must be utilized. 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 dB. 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 various factors, such as the distance between the receptor and the noise source, character of the ground surface (e.g., hard or soft), and the presence or absence of structures (e.g., walls or buildings) or topography and how well inputs in the model reflect these conditions present in the local setting.

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.[1] 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.[2] When two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3dBA higher than one source under the same conditions. Under the dB scale, three sources of equal loudness together would produce an increase of 5 dBA.[3]

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.[4] 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.[5] 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 when soft ground conditions exist between the source and receptor locations.[6] For line sources, an overall attenuation rate of 3 dB per doubling of distance is assumed in this report.

[1] California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013.
[2] *Noise Sources and Their Effects,* https://www.chem.purdue.edu/chemsafety/Training/PPETrain/dblevels.htm, accessed April 12, 2022.
[3] California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013.
[4] Ibid.
[5] Ibid.
[6] Federal Highway Administration, *FHWA Traffic Noise Model User's Guide*, January 1998.

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 can reduce noise levels by 5 to 15 dBA.[7] 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.[8] 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. 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:[9]

- 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 Safety and Health Administration has a noise exposure standard that is set at the noise threshold where

[7] Federal Highway Administration, *Highway Traffic and Construction Noise - Problem and Response*, April 2006.
[8] Compiled from James P. Cowan, *Handbook of Environmental Acoustics,* 1994, and Cyril M. Harris, *Handbook of Noise Control*, 1979.
[9] Compiled from California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013, and Federal Highway Administration, *Noise Fundamentals,* 2017.

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.[10]

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[11].

2.2 Groundborne Vibration

Sources of groundborne 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). 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 the peak particle velocity (PPV); another is the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave and is expressed in terms of inches-per-second (in/sec). The RMS velocity is defined as the average of the squared amplitude of the signal and is expressed in terms of velocity decibels (VdB). 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 groundborne 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 groundborne vibration are planes, trains, and construction activities such as earth-moving 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.

[10] U.S. Department of Labor, Occupational Safety and Health Standards, *29 CFR 1910* (Occupational Noise Exposure).
[11] 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

Maximum PPV (in/sec)	Vibration Annoyance Potential Criteria	Vibration Damage Potential Threshold Criteria	FTA Vibration Damage Criteria
0.008	--	Extremely fragile historic buildings, ruins, ancient monuments	--
0.01	Barely Perceptible	--	--
0.04	Distinctly Perceptible	--	--
0.1	Strongly Perceptible	Fragile buildings	--
0.12	--	--	Buildings extremely susceptible to vibration damage
0.2	--	--	Non-engineered timber and masonry buildings
0.25	--	Historic and some old buildings	--
0.3	--	Older residential structures	Engineered concrete and masonry (no plaster)
0.4	Severe	--	--
0.5	--	New residential structures, Modern industrial/commercial buildings	Reinforced-concrete, steel or timber (no plaster)

PPV = peak particle velocity; in/sec = inches per second; FTA = Federal Transit Administration

Source: California Department of Transportation, *Transportation and Construction Vibration Guidance Manual*, 2020 and Federal Transit administration, *Transit Noise and Vibration Assessment Manual*, 2018.

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 buildings, the acceptable interior noise limit for new construction is 45 dBA CNEL.

3.2 Local

County of San Bernardino Countywide Policy Plan

The County of San Bernardino Countywide Policy Plan contains the following goals and policies that address noise as part of the Hazards Element:

Goal HZ-2: People and the natural environment protected from exposure to hazardous materials, excessive noise, and other human-generated hazards.

Policy HZ-2.6: **Coordination with transportation authorities**. We collaborate with airport owners, FAA, Caltrans, SBCTA, SCAG, neighboring jurisdictions, and other transportation providers in the preparation and maintenance of, and updates to transportation-related plans and projects to minimize noise impacts and provide appropriate mitigation measures.

Policy HZ-2.7: **Truck delivery areas**. We encourage truck delivery areas to be located away from residential properties and require associated noise impacts to be mitigated.

Policy HZ-2.8: **Proximity to noise generating uses**. We limit or restrict new noise sensitive land uses in proximity to existing conforming noise generating uses and planned industrial areas.

Policy HZ-2.9: **Control sound at the source**. We prioritize noise mitigation measures that control sound at the source before buffers, soundwalls, and other perimeter measures.

San Bernardino County Code of Ordinances

The San Bernardino County Code of Ordinances (San Bernardino County Code) establishes the following noise provisions that are relevant to the Project:

Section 83.01.080 Noise

(c) Noise Standards for Stationary Noise Sources

(1) *Noise Standards.* Table 5: Noise Standards for Stationary Noise Sources describes the noise standard for emanations from a stationary noise source, as it affects adjacent properties:

Table 5: Noise Standards for Stationary Noise Sources

Affected Land Uses (Receiving Noise)	7:00 a.m. – 10 p.m. L_{eq}	10:00 p.m. – 7:00 a.m. L_{eq}
Residential	55 dB(A)	45 dB(A)
Professional Services	55 dB(A)	55 dB(A)
Other Commercial	60 dB(A)	60 dB(A)
Industrial	70 dB(A)	70 dB(A)
L_{eq} = (Equivalent Energy Level). The sound level corresponding to a steady-state sound level containing the same total energy as a time-varying signal over a given sample period, typically one, eight or 24 hours.		
dB(A) = (A-weighted Sound Pressure Level). The sound pressure level, in decibels, as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound, placing greater emphasis on those frequencies within the sensitivity range of the human ear.		
L_{dn} = (Day-Night Noise Level). The average equivalent A-weighted sound level during a 24-hour day obtained by adding 10 decibels to the hourly noise levels measured during the night (from 10:00 p.m. to 7:00 a.m.). In this way L_{dn} takes into account the lower tolerance of people for noise during nighttime periods.		
Source: County of San Bernardino, *San Bernardino County, CA Code of Ordinances*, current through Ord. 4424, December 14, 2021.		

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

(A) The noise standard for the receiving land use as specified in Subdivision (b) (Noise-Impacted Areas), above, for a cumulative period of more than 30 minutes in any hour.
(B) The noise standard plus five dB(A) for a cumulative period of more than 15 minutes in any hour.
(C) The noise standard plus ten dB(A) for a cumulative period of more than five minutes in any hour
(D) The noise standard plus 15 dB(A) for a cumulative period of more than one minute in any hour.

(E) The noise standard plus 20 dB(A) for any period of time.

(d) Noise Standards for Adjacent Mobile Noise Sources

Noise from mobile sources may affect adjacent properties adversely. When it does, the noise shall be mitigated for any new development to a level that shall not exceed the standards described in the following Table 6: Noise Standards for Stationary Noise Sources.

Table 6: Noise Standards for Adjacent Mobile Noise Sources

Land Use		L_{dn} (or CNEL) dB(A)	
Categories	**Uses**	**Interior[1]**	**Exterior[2]**
Residential	Single and multi-family, duplex, mobile homes	45	60[3]
Commercial	Hotel, motel, transient housing	45	60[3]
	Commercial retail, bank, restaurant	50	N/A
	Office building, research and development, professional offices	45	65
	Amphitheater, concert hall, auditorium, movie theater	45	N/A
Institutional/Public	Hospital, nursing home, school classroom, religious institution, library	45	65
Open Space	Park	N/A	65

Notes:
1. The indoor environment shall exclude bathrooms, kitchens, toilets, closets and corridors.
2. The outdoor environment shall be limited to:
   - Hospital/office building patios
   - Hotel and motel recreation areas
   - Mobile home parks
   - Multi-family private patios or balconies
   - Park picnic areas
   - Private yard of single-family dwellings
   - School playgrounds
3. An exterior noise level of up to 65 dB(A) (or CNEL) shall be allowed provided exterior noise levels have been substantially mitigated through a reasonable application of the best available noise reduction technology, and interior noise exposure does not exceed 45 dB(A) (or CNEL) with windows and doors closed. Requiring that windows and doors remain closed to achieve an acceptable interior noise level shall necessitate the use of air conditioning or mechanical ventilation.
4. CNEL = (Community Noise Equivalent Level). The average equivalent A-weighted sound level during a 24-hour day, obtained after addition of approximately five decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and ten decibels to sound levels in the night from 10:00 p.m. to 7:00 a.m.

Source: County of San Bernardino, *San Bernardino County, CA Code of Ordinances*, current through Ord. 4424, December 14, 2021.

(e) Increases in Allowable Noise Levels

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

(f) Reductions in Allowable Noise Levels.

If the alleged offense consists entirely of impact noise or simple tone noise, each of the noise levels in Table 8 (Noise Standards for Stationary Noise Sources) (Table 5) shall be reduced by five dB(A).

(g) Exempt Noise.

The following sources of noise shall be exempt from the regulations of this Section:

(1) Motor vehicles not under the control of the commercial or industrial use.

(2) Emergency equipment, vehicles, and devices.

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

(h) Noise Standards for Other Structures.

All other structures shall be sound attenuated against the combined input of all present and projected exterior noise to not exceed the criteria (see Table 7: Noise Standards for Other Structures).

Table 7: Noise Standards for Other Structures

Typical Uses	12-Hour Equivalent Sound Level (Interior) in dBA L_{dn}
Educational, institutions, libraries, meeting facilities, etc.	45
General office, reception, etc.	50
Retail stores, restaurants, etc.	55
Other areas for manufacturing, assembly, testing, warehousing, etc.	65

Source: County of San Bernardino, *San Bernardino County, CA Code of Ordinances*, current through Ord. 4424, December 14, 2021.

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

Section 83.01.090 Vibration

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

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

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

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

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

Auto Club Speedway Revised Noise Standards

The *Auto Club Speedway Revised Noise Standards Draft Recirculated Subsequent Environmental Impact Report* (March 2010) analyzed impacts associated with the proposed relocation of the drag strip (Revision 9) and the revised noise standards for the ACS. The proposed noise standards replaced the then-existing noise standard applicable to the Speedway, as evaluated in the 1995 Final EIR and applied under the Planned Development. Revision 11 established a noise standard of 85 dBA L_{max} as measured at 550 feet from the Speedway property line for standard operating days (330 days annually), and 100 dBA L_{max}, at 550 feet from the property line of the Speedway for the remaining 35 days of the year. The standards apply to all permitted activities at the ACS, including racing in the oval and drag strip, speaker amplification, and crowd noise. The Revision 11 noise standard was designed to protect sensitive receptors, as it meets U.S. EPA noise criteria for hearing loss and required monitoring at a set distance of 550 feet from the Speedway (20 feet south of the nearest residence) to monitor compliance. Noise levels exceeding 100 dBA L_{max} would be allowed for a total of 35 days per year annually to be scheduled in advance with the County.

4 EXISTING CONDITIONS

4.1 Existing Noise Sources

The Project site is impacted by various noise sources. Mobile sources of noise, especially cars, trucks, and trains are the most common and significant sources of noise. Other noise sources are the various land uses (i.e., residential, commercial, and industrial) throughout the Project area that generate stationary-source noise.

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's Transportation Impact Study (Kimley-Horn, 2021). 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. The average daily noise levels along roadway segments in proximity to the Project site are included in Table 8: Existing Traffic Noise Levels.

Table 8: Existing Traffic Noise Levels

Roadway	Segment	ADT	dBA CNEL 100 Feet from Roadway Centerline
Highland Avenue	West of Beech Avenue	7,100	61.7
	Beech Avenue to Citrus Avenue	10,050	63.1
	Citrus Avenue to Sierra Avenue	14,370	64.8
Baseline Avenue	Etiwanda Avenue to I-15 SB Ramps	20,200	67.4
	I-15 SB Ramps to I-15 NB Ramps	23,960	68.9
	I-15 NB Ramps to Cherry Avenue	23,530	67.2
	Cherry Avenue to Beech Avenue	24,070	67.2
	Beech Avenue to Citrus Avenue	18,380	66.1
	Citrus Avenue to Sierra Avenue	16,120	65.5
Foothill Boulevard	I-15 SB Ramps to I-15 NB Ramps	38,120	70.4
	I-15 NB Ramps to Etiwanda Avenue	28,360	69.1
	Etiwanda Avenue to Beech Avenue	21,620	67.8
	Cherry Avenue to Beech Avenue	21,440	67.8
	Beech Avenue to Citrus Avenue	22,540	66.7
	Citrus Avenue to Sierra Avenue	19,880	66.2
Arrow Route	Milliken Avenue to Etiwanda Avenue	19,980	67.3
	Etiwanda Avenue to Cherry Avenue	14,740	64.8
	Cherry Avenue to Beech Avenue	15,380	65.0
	Beech Avenue to Citrus Avenue	13,760	64.5
	Citrus Avenue to Sierra Avenue	13,950	62.2
Merrill Avenue	Cherry Avenue to Beech Avenue	6,610	60.1
	Beech Avenue to Citrus Avenue	7,730	60.8
	Citrus Avenue to Sierra Avenue	10,520	62.2
Randall Avenue	Cherry Avenue to Beech Avenue	5,680	59.5
	Beech Avenue to Citrus Avenue	4,260	58.2

Table 8: Existing Traffic Noise Levels

Roadway	Segment	ADT	dBA CNEL 100 Feet from Roadway Centerline
	Citrus Avenue to Sierra Avenue	6,540	60.1
Fourth Street / San Bernardino Avenue	I-15 SB Ramps to I-15 NB Ramps	23,700	72.3
	I-15 NB Ramps to Etiwanda Avenue	15,160	69.2
	Etiwanda Avenue to Commerce Drive	10,580	68.4
	Commerce Drive to Cherry Avenue	16,810	70.5
	Cherry Avenue to Beech Avenue	11,030	66.0
	Beech Avenue to Citrus Avenue	8,630	64.9
	Citrus Avenue to Sierra Avenue	10,700	65.9
Valley Boulevard	Commerce Drive / I-10 Ramps to Cherry Avenue	19,260	70.9
	Cherry Avenue to Beech Avenue	17,240	70.4
Etiwanda Avenue	Baseline Avenue to Foothill Boulevard	10,290	66.6
	Foothill Boulevard to Arrow Route	13,920	68.7
	Arrow Route to San Bernardino Avenue / Fourth Street	15,770	70.0
	San Bernardino Avenue / Fourth Street to Valley Boulevard	17,010	69.7
	Valley Boulevard to I-10 WB Ramps	22,920	71.2
	I-10 WB Ramps to I-10 EB Ramps	23,800	71.2
Cherry Avenue	SR-210 WB Ramps to SR-210 EB Ramps	15,450	69.0
	SR-210 EB Ramps to Baseline Avenue	19,040	69.3
	Baseline Avenue to Foothill Boulevard	21,090	70.0
	Foothill Boulevard to Arrow Route	19,940	68.8
	Arrow Route to Whittram Avenue	21,800	69.2
	Whittram Avenue to Merrill Avenue	24,510	69.5
	Merrill Avenue to Randall Avenue	23,490	71.2
	Randall Avenue to San Bernardino Avenue	23,890	71.4
	San Bernardino Avenue to Valley Boulevard	20,230	70.5
	Valley Boulevard to I-10 WB Ramps	30,560	72.7
	I-10 WB Ramps to I-10 EB Ramps	33,470	72.9
	I-10 EB Ramps to Slover Avenue	27,850	71.6
	South of Slover Avenue	18,610	69.4
Beech Avenue	Highland Avenue to Baseline Avenue	10,090	62.1
	Foothill Boulevard to Arrow Route	3,760	57.7
	Arrow Route to Merrill Avenue	7,810	60.9
	Merrill Avenue to Randall Avenue	5,310	59.2
	Randall Avenue to San Bernardino Avenue	4,230	58.2
	San Bernardino to Valley Boulevard	3,170	56.9
Citrus Avenue	SR-210 WB Ramps to SR-210 EB Ramps	24,020	70.1
	SR-210 EB Ramps to Baseline Avenue	23,070	65.7
	Baseline Avenue to Foothill Boulevard	17,450	64.4
	Foothill Boulevard to Arrow Route	19,000	64.8
	Arrow Route to Merrill Avenue	21,700	64.1
	Merrill Avenue to Randall Avenue	17,620	63.2
	Randall Avenue to San Bernardino Avenue	16,910	64.3
	San Bernardino Avenue to Valley Boulevard	18,590	65.9
	Valley Boulevard to I-10 WB Ramps	27,620	67.8
	I-10 WB Ramps to I-10 EB Ramps	23,150	67.0

Table 8: Existing Traffic Noise Levels

Roadway	Segment	ADT	dBA CNEL 100 Feet from Roadway Centerline
Sierra Avenue	SR-210 WB Ramps to SR-210 EB Ramps	27,580	70.0
	SR-210 EB Ramps to Highland Avenue	36,110	70.2
	Highland Avenue to Baseline Avenue	24,910	68.5
	Baseline Avenue to Foothill Boulevard	18,930	64.8
	Foothill Boulevard to Arrow Route	18,380	62.5
	Arrow Route to Merrill Avenue	17,470	62.3
	Merrill Avenue to Randall Avenue	20,390	65.2
	Randall Avenue to San Bernardino Avenue	21,450	65.4
	San Bernardino Avenue to Valley Boulevard	29,530	66.9
	Valley Boulevard to I-10 Ramps	47,340	68.0

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

Source: Based on traffic data within the *Speedway Commerce Center II Specific Plan Project Traffic Impact Study*, prepared by Kimley-Horn, 2021. Refer to Appendix B for traffic noise modeling assumptions and results.

As depicted in Table 8, the existing traffic-generated noise levels on Project-vicinity roadways currently ranges from 56.9 dBA CNEL to 72.9 dBA CNEL 100 feet from the centerline. As previously described, CNEL is 24-hour average noise level with a 5 dBA "weighting" added to the hourly average noise levels (L_{eq}) during the hours of 7:00 p.m. to 10:00 p.m. and a 10 dBA "weighting" added to the hourly L_{eq} noise levels 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 nearest stationary noise sources in the Project vicinity include mechanical equipment and operational activities at the industrial uses surrounding the Project site. Noise sources from industrial uses typically include mechanical equipment such as heating, ventilation, and air conditioning (heating, ventilation, and air conditioning [HVAC]) units, pneumatic tools, idling trucks, loading/unloading activities, and on-site vehicles (e.g., forklifts), among others. Other sources of stationary noise include freight rail operations and maintenance at the industrial uses to the north, south, and west of the Project site. The noise associated with these sources may represent a single-event noise occurrence or short-term noise.

Auto Club Speedway Race Event Noise

As noted above, the Auto Club Speedway (ACS) is centered along the south portion of the Specific Plan area. The ACS hosts various racing events annually, some of which produce high noise levels and are the dominant noise source in the Project area during such events. For example, noise measurements taken during a NASCAR race at the 2-mile ACS oval show that those events can generate noise levels up to 85 dBA L_{max} approximately 550 feet from the ACS property line.[12] For the approved but not yet constructed Next Gen motorsports facility, noise levels would be required to adhere to current ACS noise limits. According to noise measurement data obtained by Kimley-Horn at a racetrack similarly configured to the

[12] See 2010 Recirculated Subsequent EIR, Auto Club Speedway; 2021 Next Gen In California Addendum. The ACS noise standard also permits noise levels to exceed 100 dBA L_{max} as measured 550 feet from the property line on 35 days annually to be scheduled in advance with the County, with the amount of noise in excess of 85 dBA L_{max} on any single day limited to a maximum of 60 minutes and at varying increments of noise levels above 85 dBA L_{max}. The latter standard was intended to apply to drag strip operations at the ACS.

proposed Next Gen facility and modeled to estimate noise levels for the new track, NASCAR race events at the Next Gen facility would not exceed 85 dBA L_{max} as measured 550 feet from the ACS property line.[13], but can generate noise levels up to approximately 117 dBA L_{max} at a distance of 50 feet. Although race events are high producers of noise, they occur infrequently and do not represent daily baseline ambient noise levels for the Project area.

4.2 Noise Measurements

The Project site is currently occupied by the Auto Club Speedway. To quantify existing ambient noise levels in the Project area, Kimley-Horn conducted seven short-term noise measurements on December 1, 2021; see Appendix A: Existing Ambient Noise Measurements. 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 9:08 a.m. and 11:15 a.m. Measurements of L_{eq} are considered representative of the noise levels in the Project area, as noise-generating activities at the surrounding land uses are consistent throughout the day and do not vary by time period. The average noise levels and sources of noise measured at each location are listed in Table 9: Existing Noise Measurements and shown on Exhibit 4: Noise Measurement Locations.

Table 9: Existing Noise Measurements

Site	Location	Date	Time	L_{eq} (dBA)	L_{min} (dBA)	L_{max} (dBA)
1	Southern side of Arrow Route, south of the southernmost end of Gallup Court	12/1/2021	9:08 a.m.	73.4	53.4	86.9
2	Eastern side of Calabash Avenue, adjacent to the southern property line of 8695 Calabash Avenue	12/1/2021	9:28 a.m.	60.4	45.4	82.0
3	Northeast corner of the Arrow Route and Almond Avenue intersection	12/1/2021	9:45 a.m.	73.4	53.9	94.5
4	Western side of Redwood Avenue, north of the Pine Avenue and Redwood Avenue intersection	12/1/2021	10:06 a.m.	62.4	44.4	79.9
5	Eastern side of Live Oak Avenue, across the street from Live Oak Elementary School	12/1/2021	10:24 a.m.	61.9	45.1	74.5
6	Northern side of El Molino Street, north of 9881 Cherry Avenue	12/1/2021	10:46 a.m.	60.1	53.9	80.3
7	Eastern side of Calabash Avenue, west of IAA Vehicle Purchasing	12/1/2021	11:05 a.m.	61.5	51.9	73.7

Source: Noise measurements taken by Kimley-Horn, December 1, 2021. See Appendix A for noise measurement results.

[13] Based on noise measurements conducted by Kimley-Horn and Associates at Martinsville Speedway on June 10, 2020. See 2021 Next Gen In California Addendum.

Exhibit 4: Noise Measurement Locations

4.3 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 railroad infrastructure to the north of the Project site as well as truck/trailer storage warehousing, manufacturing, offices, and single-family residential units. Service garage, light industrial, and office land uses are present immediately south of the Project site. Warehousing, truck leasing, automotive dealers, and single-family residential units are located east of the Project site. Finally, warehousing, distribution, and logistics land uses as well as the San Sevaine Channel are located west of the Project site. Sensitive land uses nearest to the Project are listed in Table 10: Sensitive Receptors.

Table 10: Sensitive Receptors[1]

Receptor Description	Distance and Direction from the Project (Measured from the Nearest Property Lines)
Single-family Residences	410 feet to the east
Single-family Residences	540 feet to the north
Single-family Residences	675 feet to the east
Paduma Monastery	1,100 to the north
Single-family Residences	1,300 feet to the east
Redwood Elementary School	1,370 feet to the northeast
Single-family Residences	1,800 feet to the north
Living Waters Ministry Church of God in Christ	2,000 feet to the north
Single-family Residences	2,100 feet to the north

Notes:
1. Distances measured from the nearest Project site boundary to the property boundary of the identified sensitive receptor.

Source: Google Earth, 2021.

5 SIGNIFICANCE CRITERIA AND METHODOLOGY

5.1 CEQA Thresholds

Appendix G of the California Environmental Quality Act (CEQA) Guidelines contains analysis guidelines related to noise impacts. These guidelines have been used by the County 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;
- Generation of excessive groundborne vibration or groundborne noise levels; or
- 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.

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 the Federal Highway Administration (FHWA). Construction noise is assessed in dBA L_{eq}. This unit is appropriate because L_{eq} 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.

Construction noise modeling was conducted using the FHWA Roadway Construction Noise Model (RCNM). 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.

For the purposes of analyzing construction noise, the construction activities for the e-commerce, high-cube logistics, and ancillary commercial uses were modeled in four separate phases (Phase 1a, Phase 1b, Phase 2, and Commercial) to be developed successively over four years. Construction was modeled generally according to the following timeline:

- Phase 1a (Buildings 1 through 3): Commence in 2023 with a 12-month duration.
- Phase 1b (Buildings 4 and 5): Commence in 2024 with a 12-month duration.
- Phase 2 (Buildings 6 and 7): Commence in 2025 with a 12-month duration.
- Commercial Parcel: Commence in 2026 with an 11-month duration.

Operations

The analysis of the Without Project 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 are collected from field noise measurements and other published sources from similar types of activities and are used to estimate noise levels expected from 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 County's Noise Ordinance and General Plan. The Without Project and With Project traffic noise levels in the Project vicinity were calculated using the FHWA Highway Noise Prediction Model (FHWA-RD-77-108).

Vibration

Groundborne vibration levels associated for the Project's construction-related activities were evaluated by utilizing typical groundborne vibration levels associated with construction equipment, obtained from FTA published data for construction equipment. Potential groundborne 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 reference vibration levels from the FTA.

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 vibration damage. FTA guidelines show that modern engineered buildings built with reinforced-concrete, steel or timber can withstand vibration levels up to 0.50 in/sec and not experience vibration damage. The Caltrans 2020 *Transportation and Construction Vibration Guidance Manual* identifies the vibration threshold for human annoyance: vibrations levels of 0.1 in/sec begin to cause annoyance and levels of 0.2 in/sec are considered annoying.

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

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. 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). Typical noise levels associated with individual construction equipment are listed in Table 11: Typical Construction Noise Levels. During construction, exterior noise levels could affect the residential neighborhoods surrounding the construction site. Construction activities would include demolition, site preparation, grading, building construction, paving, and architectural coating.

The San Bernardino County does not establish quantitative exterior construction noise standards. Instead, the San Bernardino County Code establishes limited hours of construction activities. San Bernardino County Code Section 83.01.080 states that temporary construction, maintenance, repair, or demolition activities shall be exempt from noise regulations detailed in this section between 7:00 a.m. and 7:00 p.m., except Sundays and Federal holidays. Concrete pouring routinely occurs during early morning hours (i.e., beginning at 1:00 a.m.) to avoid heat that could cause the concrete to set too quickly and lose workability; however, concrete pours typically do not involve significant noise levels, as shown in Table 12 through Table 16 below. The County of San Bernardino would be required to approve any nighttime construction activities. In accordance with Standard Condition (SC) NOI-1, all other Project construction activities will be limited to the hours between 7:00 a.m. and 7:00 p.m. and will not occur on Sundays or Federal holidays; therefore, the Project's construction-related noise would not exceed the County's Development Code standards. However, this analysis conservatively uses the FTA's threshold of 80 dBA (8-hour L_{eq}) for residential uses to evaluate construction noise impacts.[14] Construction activities associated with the Project would occur in multiple phases. The timing assumed for each phase is described above in Section 5.2.

[14] Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, Table 7-2, Page 179, September 2018.

Table 11: Typical Construction Noise Levels	
Equipment	**Typical Noise Level (dBA) at 50 feet from Source**
Air Compressor	80
Backhoe	80
Compactor	82
Concrete Mixer	85
Concrete Pump	82
Concrete Vibrator	76
Crane, Mobile	83
Dozer	85
Generator	82
Grader	85
Impact Wrench	85
Jack Hammer	88
Loader	80
Paver	85
Pneumatic Tool	85
Pump	77
Roller	85
Saw	76
Scraper	85
Shovel	82
Truck	84
Source: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, September 2018.	

Following FTA's methodology for quantitative construction noise assessments, construction-generated noise levels associated with the Project were calculated using FHWA's RCNM computer program. RCNM enables the prediction of construction noise levels for a variety of construction operations based on a compilation of empirical data and the application of acoustical propagation formulas. The program enables the calculation of construction noise levels in more detail and with more accuracy than manual methods while avoiding the need to collect extensive amounts of project-specific input data. See Appendix B: Noise Modeling Data for more information regarding the construction assumptions used in this analysis.

Table 12: Construction Equipment for RCNM Modeling, shows the equipment types and quantities modeled in RCNM for each construction phase. Table 13: Phase 1a Project Construction Noise Levels show estimated exterior construction noise levels at the nearest sensitive uses (residences located approximately 1,900 feet northeast of the acoustic center for Phase 1a construction activities) without accounting for attenuation from physical barriers or topography. Thus, estimated noise levels at the sensitive receptors shown in Table 12 through Table 16 below are likely higher than they would be if attenuation was accounted for. Following FTA methodology, when calculating construction noise, all equipment is assumed to operate at the center of the construction area because equipment would operate throughout the site and not at a fixed location for extended periods of time. Therefore, the distance used in the RCNM model was 1,900 feet for the nearest residential uses located to the northeast of Phase 1a construction. As indicated in Table 13, Phase 1a Project construction noise levels would not exceed the FTA's 80 dBA threshold at the nearest residential uses.

Table 12: Construction Equipment for RCNM Modeling			
Project Phase	**Construction Phase**	**Equipment**	**Quantity**
Phase 1a Phase 1b Phase 2 Commercial	Demolition	Concrete Saw	1
		Dozer	1
	Road Construction/Utilities	Excavator	1
		Dozer	1
	Excavation/Mass Site Grading	Grader	1
		Roller	1
	Concrete Pour	Crane	1
		Pumps	1
	Paving/Landscape/Site Finishes	Grader	1
	Architectural Coating	Air Compressor	2
Source: Federal Highway Administration, *Roadway Construction Noise Model,* 2006. Refer to Appendix B for noise modeling results.			

Table 13: Phase 1a Project Construction Noise Levels			
Construction Phase	**Modeled Exterior Construction Noise Level (dBA L_{eq})[1]**	**Noise Threshold (dBA L_{eq})**	**Exceed Threshold?**
Demolition	52.2	80	No
Road Construction/Utilities	48.7	80	No
Excavation/Mass Site Grading	50.1	80	No
Concrete Pour	47.4	80	No
Paving/Landscape/Site Finishes	52.0	80	No
Architectural Coating	45.1	80	No
Note: 1. Following FTA methodology, all equipment is assumed to operate at the center of the Phase 1a construction site because equipment would operate throughout the Project site and not at a fixed location for extended periods of time. Thus, the distance used in the RCNM model was approximately 1,900 feet for the nearest sensitive receptors to the northeast of the active Phase 1a construction zone.			
Source: Federal Highway Administration, *Roadway Construction Noise Model,* 2006. Refer to Appendix B for noise modeling results.			

Table 14: Phase 1b Project Construction Noise Levels depicts the estimated noise levels from 1b construction at the nearest residential uses located approximately 1,270 feet to the north of Phase 1b construction activities (again without accounting for attenuation from physical barriers or topography). As indicated in Table 14, Phase 1b Project construction noise levels would not exceed the FTA's 80 dBA threshold at the nearest residential uses.

Table 14: Phase 1b Project Construction Noise Levels			
Construction Phase	**Modeled Exterior Construction Noise Level (dBA L_{eq})**	**Noise Threshold (dBA L_{eq})**	**Exceed Threshold?**
Demolition	55.7	80	No
Road Construction/Utilities	52.2	80	No
Excavation/Mass Site Grading	53.6	80	No
Concrete Pour	50.9	80	No
Paving/Landscape/Site Finishes	55.5	80	No
Architectural Coating	48.6	80	No
Note: 1. Following FTA methodology, all equipment is assumed to operate at the center of the Phase 1b construction site because equipment would operate throughout the Project site and not at a fixed location for extended periods of time. Thus, the distance used in the RCNM model was approximately 1,270 feet for the nearest sensitive receptors to the north of the active Phase 1b construction zone.			
Source: Federal Highway Administration, *Roadway Construction Noise Model,* 2006. Refer to Appendix B for noise modeling results.			

Table 15: Phase 2 Project Construction Noise Levels depicts the estimated noise levels from Phase 2 construction noise levels at the nearest residential uses located approximately 3,000 feet to the north of Phase 2 construction activities (again without accounting for attenuation from physical barriers or topography). As indicated in Table 15, Phase 2 Project construction noise levels would not exceed the FTA's 80 dBA threshold at the nearest residential uses.

Table 15: Phase 2 Project Construction Noise Levels

Construction Phase	Modeled Exterior Construction Noise Level (dBA L_{eq})	Noise Threshold (dBA L_{eq})	Exceed Threshold?
Demolition	48.2	80	No
Road Construction/Utilities	44.7	80	No
Excavation/Mass Site Grading	46.1	80	No
Concrete Pour	43.5	80	No
Paving/Landscape/Site Finishes	48.0	80	No
Architectural Coating	41.1	80	No

Note:
1. Following FTA methodology, all equipment is assumed to operate at the center of the Phase 2 construction site because equipment would operate throughout the Project site and not at a fixed location for extended periods of time. Thus, the distance used in the RCNM model was approximately 3,000 feet for the nearest sensitive receptors to the north of the active Phase 2 construction zone.

Source: Federal Highway Administration, *Roadway Construction Noise Model,* 2006. Refer to Appendix B for noise modeling results.

Table 16: Commercial Project Construction Noise Levels depicts a worst-case scenario from construction of the commercial uses at the nearest residential uses located approximately 2,000 feet to the east of commercial construction activities (again without accounting for attenuation from physical barriers or topography). As indicated in Table 16, commercial construction noise levels would not exceed the FTA's 80 dBA threshold at the nearest residential uses.

Table 16: Commercial Project Construction Noise Levels

Construction Phase	Modeled Exterior Construction Noise Level (dBA L_{eq})	Noise Threshold (dBA L_{eq})	Exceed Threshold?
Demolition	51.8	80	No
Road Construction/Utilities	48.2	80	No
Excavation/Mass Site Grading	49.6	80	No
Concrete Pour	47.0	80	No
Paving/Landscape/Site Finishes	51.5	80	No
Architectural Coating	44.7	80	No

Note:
1. Following FTA methodology, all equipment is assumed to operate at the center of the Commercial construction area because equipment would operate throughout the Project site and not at a fixed location for extended periods of time. Thus, the distance used in the RCNM model was approximately 2,000 feet for the nearest sensitive receptors to the east of the active commercial construction zone.

Source: Federal Highway Administration, *Roadway Construction Noise Model,* 2006. Refer to Appendix B for noise modeling results.

Construction activities may also cause increased noise along site access routes due to movement of equipment and workers. Based on the air quality modeling outputs for the proposed Project in the *Speedway Commerce Center II Specific Plan Project Air Quality Assessment* (Kimley-Horn, 2022), a maximum of 1,167 daily construction trips (i.e., worker, vendor, and hauling trips) would occur during the excavation/mass site grading phase during Phase 1a construction. According to the California Department of Transportation (Caltrans), traffic volumes on Project area roadways would have to approximately

double to result in a barely perceptible 3-dBA increase in traffic noise levels.[15] As indicated above in Table 8, existing traffic volumes along Cherry Avenue and San Bernardino Avenue (the nearest access routes to the Project site for construction traffic) ranges from 16,810 ADT to 23,490 ADT. Thus, Project construction traffic (up to 1,167 daily trips) would represent less than seven percent of existing ADT volumes along roadways in the Project vicinity and would result in a minimal increase in traffic noise levels.

As discussed above, construction noise levels would not exceed the FTA noise standard of 80 dBA at the nearest sensitive receptors during Project construction, and construction traffic would not result in a noticeable increase in traffic noise levels. In addition, compliance with the best management practices and allowable construction hours in the San Bernardino County Code, as set forth in Standard Condition SC NOI-1, would further minimize impacts from construction noise. SC NOI-1 would ensure that all construction equipment is equipped with properly operating and maintained mufflers and other State required noise attenuation devices,[16] signs are posted near residences with contact information and dates of construction activities, construction notices are sent to adjacent residences, construction haul routes avoid sensitive uses where possible, and designating a noise disturbance coordinator to minimize and manage construction noise, among others. Therefore, construction-related noise impacts would be less than significant in this regard.

Operations

Implementation of the proposed Project would create new sources of noise in the Project vicinity. The major noise sources associated with the Project would include train noise; mechanical equipment (i.e., HVAC equipment); truck deliveries and loading activities; parking areas (i.e., car door slamming, car radios, engine start-up, and car pass-by); and off-site traffic noise.

Train Noise

There is one rail spur that crosses the site at the southwest end of the Project site, and one rail spur is located directly to the west of the site. An active freight passenger line lies just north along the northern boundary of the Project. There are currently five at-grade rail crossings located within one mile of the Project site. The Project would not impact the use, location, or function of these existing spur lines or crossings. However, the Project would include converting two existing private at-grade rail crossings to two new public at-grade rail crossings at the west end of Street "A" and at Street "D" which will cross the existing spur lines located along the Project's western boundary and improvements to one existing at-grade rail crossing at San Bernardino Avenue. The Master Developer is coordinating with Union Pacific (UP), BNSF, and California Public Utilities Commission (CPUC) for the proposed modifications to accommodate the Project right of way improvements. The proposed at-grade crossings would not result in an increase in train horn activity in the Project area or a new source of noise as these are existing railroad crossings within the Project area. The two crossings are not located closer to sensitive receptors than they currently are and the Project site is within an industrial area surrounded by industrial uses and trains currently operate within the Project area. Furthermore, the Project will include the construction of new buildings and landscaping which will further help to buffer the noise to the residential properties to the north and east of the Project site. Therefore, train horn noise levels at the existing sensitive receptors

[15] According to the California Department of Transportation, *Technical Noise Supplement to Traffic Noise Analysis Protocol* (September 2013), it takes a doubling of traffic to create a noticeable (i.e., 3 dBA) noise increase.

[16] Per the Federal Highway Administration's *Special Report - Measurement, Prediction, and Mitigation*, Chapter 4 Mitigation, 2017, muffler systems can reduce noise levels by 10 dBA or more.

in the Project vicinity (e.g., residences to the north and east of the Project site) would be similar or less as a result of the Project, and a less than significant impact would occur in this regard.

In addition, Metrolink has an existing rail line adjacent to the Project area's northern boundary. The Project would not interfere with and/or alter existing Metrolink operations. Therefore, Metrolink rail noise would not increase as a result of the Project.

Mechanical Equipment

The Project is located near residential properties to the north and east which are scattered among warehouse and manufacturing businesses. Potential stationary noise sources related to long-term operation of the Project site would include mechanical equipment. The primary noise-generating mechanical equipment utilized at the Project site would consist of HVAC equipment,[17] which typically generates noise levels of approximately 52 dBA at 50 feet.[18] Noise has a decay rate due to distance attenuation, which is calculated based on the Inverse Square Law of sound propagation. Based upon the Inverse Square Law, sound levels decrease by 6 dBA for each doubling of distance from the source. The nearest potential location for HVAC equipment would be located approximately 560 feet from the residential property line to the east of the Project site along Cherry Avenue. At this distance and conservatively assuming the simultaneous operation of 10 HVAC units, HVAC noise levels would attenuate to approximately 36.0 dBA,[19] which is below the County's 55 dBA and 45 dBA daytime and nighttime stationary noise standards, respectively, for residential uses. In addition, HVAC noise levels (36.0 dBA at the nearest sensitive receptor) would not exceed the measured ambient levels in the Project vicinity; see Table 9. Therefore, the proposed Project would result in a less than significant impact related to mechanical equipment noise levels.

Truck Delivery and Loading Dock Noise

On-site movements from truck deliveries and truck loading/unloading activities would occur at the logistics buildings throughout the Project site. In addition, less frequent truck deliveries would occur at the commercial uses in the southeastern portion of the Project site along Cherry Avenue. During truck loading and unloading activities at the Project site, 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. As noted above, San Bernardino County Code Section 83.01.080(C) employs noise standards for stationary sources as received at a variety of land uses (i.e., residential, professional services, commercial, industrial uses). Due to the slow speed of travel and idling of trucks at the Project site, the County's stationary noise standards are utilized below to analyze impact from truck delivery and loading dock noise.

The proposed logistics buildings would include dock-high doors for truck loading/unloading for high cube logistics and e-commerce and operations. The dock-high doors are set back as close as approximately 700 feet from the property line of the nearest residences to the east of the Project site along Cherry Avenue and approximately 800 feet to the property line of the nearest residence to the north. Truck and loading dock noise (i.e., noise from truck movements to the loading docks, backup alarms, idling, and

[17] Other stationary noise sources from the Project, including loading activities and truck deliveries, are discussed below.

[18] Elliott H. Berger, Rick Neitzel, and Cynthia A. Kladden, *Noise Navigator Sound Level Database with Over 1700 Measurement Values*, June 26, 2015.

[19] Assuming a 5 dBA reduction from the Cherry Avenue overcrossing structure and existing industrial building located between the Project site and nearest residence to the east; see Table 17.

loading/unloading activities) is typically 64.4 dBA at 50 feet.[20] As a result, noise levels from on-site truck deliveries and loading activities would attenuate under the inverse square law of sound propagation to approximately 36.5 dBA[21] and 40.3 dBA at the nearest residential uses to the east and north, respectively. Thus, noise levels from on-site truck deliveries and loading activities would not exceed the County's most stringent nighttime noise standard of 45 dBA for residential uses. Furthermore, 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, noise from interior loading and associated activities would not be perceptible at the nearest sensitive receptors. In addition, intervening warehouse buildings and retaining walls on the Project site would act as a buffer and reduce truck loading/unloading noise levels at the nearest sensitive receptors (residential uses) from the Project site. Therefore, noise levels from trucks and loading/unloading activities would not exceed any local noise standards and a less than significant impact would occur.

Parking Noise

Surface parking would be provided for automobiles and truck trailers in the northern, eastern, southeastern, southern, southwestern, western, and central portions of the Project site. In total, the proposed Project would provide 98 acres of parking fields/drop lots. The instantaneous maximum sound levels generated by a car door slamming, engine starting up, and car pass-bys range from 53 to 61 dBA.[22] Noise levels associated with truck trailer movements at the drop lots would be similar to those described above for truck loading activities, and therefore are conservatively assumed to be approximately 64.4 dBA at 50 feet. 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.[23] Based on the car and truck reference noise levels identified above and the inverse square law of sound propagation, parking lot noise levels would reach approximately 42.7 dBA[24] at the closest residences approximately 410 feet to the east of the parking area for Building 3 at the Project site. It should be noted, however, that parking lot noise would be short in duration and would not occur on a frequent basis. Rather, parking lot noise from automobiles and trucks would occur intermittently and could see an increase during peak travel periods. Trucks would also be limited to five minutes of idling in compliance with State regulations, which would further reduce parking lot noise levels. As such, parking lot noise levels from the Project are expected to be lower than the estimates provided above when averaged over time and are not anticipated to exceed the County's noise standards for stationary sources.

It should also be noted that the Cherry Avenue overcrossing structure and a small industrial building are located between the nearest residence to the east and the Project site, which would act as noise buffers and further reduce Project-generated noise levels at the nearest residence to the east. Additionally, parking noise occurs under existing conditions at the Project site and surrounding properties; thus, the

[20] Loading dock reference noise level measurements conducted by Kimley-Horn on December 18, 2018 at the La Palma Neighborhood Walmart, approximately 50 feet from the Walmart loading dock area. Loading dock activities included trucks arriving at the docks, backing up, and loading/unloading using palette jacks.

[21] Assuming a 5 dBA reduction from the Cherry Avenue overcrossing structure and existing industrial building located between the Project site and nearest residence to the east; see Table 17.

[22] Kariel, H. G., *Noise in Rural Recreational Environments*, Canadian Acoustics 19(5), 3-10, 1991.

[23] Elliott H. Berger, Rick Neitzel, and Cynthia A. Kladden, *Noise Navigator Sound Level Database with Over 1700 Measurement Values*, June 26, 2015.

[24] This represents the combined automobile (61 dBA) and truck parking lot (64.4 dBA) noise levels at the nearest residences approximately 410 feet away, and assumes a 5 dBA reduction from the Cherry Avenue overcrossing structure and existing industrial building located between the Project site and nearest residence to the east.

Project would not introduce a new noise source to the Project area. Therefore, noise impacts associated with parking would be less than significant.

Combined Stationary Source Noise Levels

Noise levels associated with mechanical equipment, truck deliveries and loading activities, and parking areas were logarithmically combined to estimate the Project's composite operational noise level at the nearest sensitive receptor(s); see Table 17: Stationary Source Noise Levels. It should be noted that predicted noise levels in Table 17 are conservative estimates since it was assumed that all equipment and operational activity at the Project site would occur in a constant, simultaneous manner. In reality, it is anticipated that these noise sources would occur intermittently throughout the day and night (except for HVAC which could operate in a steady-state manner).

As shown in Table 17, the Project's combined stationary source noise levels would be approximately 44.3 dBA at the nearest residential use, which would not exceed the County's most stringent nighttime noise standard of 45 dBA for residential uses. It should be noted the noise levels in Table 17 conservatively assume the simultaneous, constant operation of all on-site stationary noise sources; in reality, these noise sources would operate intermittently throughout the day and night and not in a continuous manner. Thus, the Project's combined stationary noise levels are anticipated to be lower than those identified in Table 17. It is also noted that the County allows for a 10 dBA increase over the stationary noise standards in Table 5 for a cumulative period of five minutes or less in any hour (see San Bernardino County Code Section 83.01.080(c)(2)(C)). Trucks parking/idling at the Project site would idle for more than five minutes in compliance with State requirements, and thus, would not contribute to a temporary noise increase over five minutes in duration. Therefore, operational noise levels from the project's stationary sources would not exceed the County's applicable noise standards, and a less than significant impact would occur in this regard.

Table 17: Stationary Source Noise Levels

Nearest Land Use	Direction	Distance (feet)	Reference Noise Level at 50 ft (dBA)	Noise Level at Receiver (dBA)[1]	County Noise Standard (dBA L_{eq})[2]	Standard Exceeded?
Mechanical Equipment						
Residential	East	560	52.0[3]	36.0	45	No
Truck Delivery and Loading Dock Noise						
Residential	East	700	64.4[4]	36.5	45	No
Parking Noise						
Residential	East	410	66.0[5]	42.7	45	No
Combined Noise Level (Mechanical Equipment + Truck Delivery and Loading Dock Noise + Parking Noise)						
Residential	East	410	-	44.3[6]	45	No

Notes:
1. Assumes a 5 dBA reduction from the Cherry Avenue overcrossing structure and existing industrial building located between the Project site and nearest residence to the east.
2. The County's most stringent noise standard for stationary sources is 45 dBA L_{eq} (for residential uses during nighttime hours).
3. Elliott H. Berger, Rick Neitzel, and Cynthia A. Kladden, *Noise Navigator Sound Level Database with Over 1700 Measurement Values*, June 26, 2015.
4. Loading dock reference noise level measurements conducted by Kimley-Horn on December 18, 2018 at the La Palma Neighborhood Walmart, approximately 50 feet from the Walmart loading dock area. Loading dock activities included trucks arriving at the docks, backing up, and loading/unloading using palette jacks.

5. Parking lot noise level was calculated based on the logarithmic decibel scale and represents the combined automobile (61 dBA) and truck parking lot (64.4 dBA) noise levels discussed in the "Parking Noise" section above.
6. Calculated based on the logarithmic decibel scale and the calculated noise levels for mechanical equipment, truck delivery and loading dock noise, and parking area noise levels identified above.

Off-Site Traffic Noise

Implementation of the Project would generate increased traffic volumes along nearby roadway segments. Based on the Project's Transportation Impact Study, the proposed Project would result in approximately 43,549 daily trips at full buildout, including approximately 9,865 daily truck trips. It is noted that daily vehicle trips from the Project would incrementally increase from Opening Year to full buildout, as shown in the trip generation table in the Project's Transportation Impact Study. Off-site traffic noise levels were calculated using the FHWA Highway Noise Prediction Model (FHWA-RD-77-108) utilizing the Project fleet mix (i.e., the percentage of heavy trucks, medium trucks, and passenger vehicles) from the Project's Transportation Impact Study to estimate traffic noise levels by vehicle type and roadway segment. The Project fleet mix varies by roadway segment and is provided in the Project's Transportation Impact Study and the RD-77-108 modeling results in Appendix B.

Opening Year 2024 – Phase 1 Traffic Conditions

The Opening Year "2024 Without Project" and "2024 Plus Phase 1" scenarios are compared in Table 18: Opening Year 2024 and Opening Year 2024 Plus Phase 1 Traffic Noise Levels. As shown in Table 18, Opening Year 2024 Without Project traffic noise levels would range from 57.2 dBA CNEL to 73.4 dBA CNEL, and Opening Year 2024 Plus Phase 1 traffic noise Levels would range between 57.2 dBA CNEL and 73.9 dBA CNEL. Project generated traffic would result in a maximum increase of 3.8 dBA CNEL along Randall Avenue (from Cherry Avenue to Citrus Avenue). In general, a 3-dBA increase in traffic noise is barely perceptible to people, while a 5-dBA increase is readily noticeable. Table 18 shows that increases in traffic noise levels along Randall Avenue (from Cherry Avenue to Citrus Avenue) would exceed 3.0 dBA and would exceed the County's applicable noise standard of 60 dBA CNEL for residential uses.

The impacted roadway segments along Randall Avenue comprise approximately three miles and land uses along this stretch are primarily residential. Potential mitigation measures to reduce the Project's traffic noise impacts at the impacted residences would include the construction of sound walls, noise abatement design features (e.g., providing upgraded windows), and/or re-paving the impacted roadway segments with rubberized asphalt. However, there are several issues with the aforementioned measures that would make off-site mitigation for traffic noise impacts infeasible:

- The Project applicant (and the future Master Developer/Site Developers) does not have jurisdiction over the local roadways and/or existing residences to directly mitigate traffic noise impacts at the impacted receivers.

- Sound walls are not feasible at the impacted residences due to driveway access issues. The noise barriers would have gaps to allow for driveway access and would be ineffective.

- Sound walls could create safety issues for ingress/egress at the residential driveways.

- The cost of a sound wall and/or rubberized asphalt is not proportional to a barely perceptible increase (+3 dBA) for two roadway segments, while a barely perceptible increase would occur at the remaining segments.

- Individual residences may deny approval of sound walls or upgraded windows.

- Rubberized asphalt surface would not be consistent with the rest of the roadway(s) in the Project area. This could also cause logistical issues for the County Public Works Department and road maintenance contractors.

- Portions of Randall Avenue are not within the County's jurisdiction (i.e., from the mid-block of Elm Avenue and Poplar Avenue east to Citrus Avenue are within the City of Fontana).

For the reasons mentioned above, off-site mitigation to reduce mobile traffic noise impacts from the Project are not feasible for implementation. Therefore, because the Project would result in a substantial increase in traffic noise levels and would exceed the County's applicable noise standards under Opening year 2024 Plus Phase 1 conditions and there is no feasible mitigation for existing development, a significant and unavoidable impact would occur in this regard.

Table 18: Opening Year 2024 and Opening Year 2024 Plus Phase 1 Traffic Noise Levels

Roadway Segment		2024 Without Project		2024 Plus Phase 1		Change	Noise Threshold, (dBA CNEL)	Significant Impacts[1]
		ADT	dBA CNEL 100 Feet from Roadway Centerline	ADT	dBA CNEL 100 Feet from Roadway Centerline			
Highland Avenue	West of Beech Avenue	7,526	62.0	7,526	62.0	0.0	60	No
	Beech Avenue to Citrus Avenue	10,653	63.4	10,653	63.4	0.0	60	No
	Citrus Avenue to Sierra Avenue	15,232	65.1	15,232	65.1	0.0	60	No
Baseline Avenue	Etiwanda Avenue to I-15 SB Ramps	21,412	67.7	21,442	67.7	0.0	60	No
	I-15 SB Ramps to I-15 NB Ramps	25,398	69.2	25,618	69.2	0.1	60	No
	I-15 NB Ramps to Cherry Avenue	24,942	67.4	25,272	67.6	0.1	60	No
	Cherry Avenue to Beech Avenue	26,534	67.7	28,424	68.6	0.9	60	No
	Beech Avenue to Citrus Avenue	20,353	66.5	22,003	67.3	0.8	60	No
	Citrus Avenue to Sierra Avenue	17,597	65.9	18,567	66.5	0.6	60	No
Foothill Boulevard	I-15 SB Ramps to I-15 NB Ramps	41,147	70.7	41,727	71.1	0.4	60	No
	I-15 NB Ramps to Etiwanda Avenue	31,152	69.5	31,732	70.2	0.6	60	No
	Etiwanda Avenue to Beech Avenue	22,927	68.1	22,927	68.1	0.0	60	No
	Cherry Avenue to Beech Avenue	23,346	68.2	24,456	68.7	0.5	60	No
	Beech Avenue to Citrus Avenue	24,532	67.1	25,642	67.7	0.6	60	No
	Citrus Avenue to Sierra Avenue	21,563	66.6	22,433	67.0	0.5	60	No
Arrow Route	Milliken Avenue to Etiwanda Avenue	21,569	67.6	22,289	67.9	0.3	60	No
	Etiwanda Avenue to Cherry Avenue	15,624	65.0	16,974	65.4	0.4	60	No
	Cherry Avenue to Beech Avenue	16,783	65.4	17,783	66.0	0.7	60	No
	Beech Avenue to Citrus Avenue	15,116	64.9	16,176	65.7	0.8	60	No
	Citrus Avenue to Sierra Avenue	15,107	62.6	15,747	63.2	0.6	60	No
Merrill Avenue	Cherry Avenue to Beech Avenue	7,277	60.5	7,837	61.4	0.9	60	No
	Beech Avenue to Citrus Avenue	8,464	61.2	9,024	62.0	0.8	60	No
	Citrus Avenue to Sierra Avenue	11,631	62.6	12,381	63.8	1.2	60	No
Randall Avenue	Cherry Avenue to Beech Avenue	9,261	61.6	12,921	65.4	3.8	60	Yes
	Beech Avenue to Citrus Avenue	7,306	60.6	10,166	64.4	3.8	60	Yes
	Citrus Avenue to Sierra Avenue	8,162	61.1	9,982	63.6	2.4	60	No
	I-15 SB Ramps to I-15 NB Ramps	25,762	72.7	26,882	73.0	0.3	60	No

Table 18: Opening Year 2024 and Opening Year 2024 Plus Phase 1 Traffic Noise Levels

Roadway Segment		2024 Without Project		2024 Plus Phase 1		Change	Noise Threshold, (dBA CNEL)	Significant Impacts[1]
		ADT	dBA CNEL 100 Feet from Roadway Centerline	ADT	dBA CNEL 100 Feet from Roadway Centerline			
Fourth Street / San Bernardino Avenue	I-15 NB Ramps to Etiwanda Avenue	17,220	69.7	19,440	70.5	0.8	60	No
	Etiwanda Avenue to Commerce Drive	12,495	69.1	16,755	70.7	1.6	60	No
	Commerce Drive to Cherry Avenue	20,259	71.3	27,169	73.0	1.7	60	No
	Cherry Avenue to Beech Avenue	11,972	66.3	12,722	66.8	0.4	60	No
	Beech Avenue to Citrus Avenue	9,308	65.3	9,838	65.7	0.4	60	No
	Citrus Avenue to Sierra Avenue	11,572	66.2	12,122	66.6	0.4	60	No
Valley Boulevard	Commerce Drive / I-10 Ramps to Cherry Avenue	20,416	71.1	20,416	71.1	0.0	60	No
	Cherry Avenue to Beech Avenue	18,304	70.7	18,874	70.8	0.1	60	No
Etiwanda Avenue	Baseline Avenue to Foothill Boulevard	11,177	67.0	11,687	67.3	0.3	60	No
	Foothill Boulevard to Arrow Route	16,125	69.4	17,215	69.9	0.6	60	No
	Arrow Route to San Bernardino Avenue / Fourth Street	18,476	70.7	19,176	71.1	0.4	60	No
	San Bernardino Avenue / Fourth Street to Valley Boulevard	18,301	70.0	19,631	70.4	0.4	60	No
	Valley Boulevard to I-10 WB Ramps	24,565	71.5	25,895	71.8	0.3	60	No
	I-10 WB Ramps to I-10 EB Ramps	25,438	71.5	26,318	71.7	0.2	60	No
Cherry Avenue	SR-210 WB Ramps to SR-210 EB Ramps	16,917	69.4	18,857	70.0	0.6	60	No
	SR-210 EB Ramps to Baseline Avenue	21,102	69.8	24,732	70.6	0.9	60	No
	Baseline Avenue to Foothill Boulevard	24,435	70.6	30,515	71.9	1.3	60	No
	Foothill Boulevard to Arrow Route	23,826	69.6	31,016	71.1	1.5	60	No
	Arrow Route to Whittram Avenue	26,278	70.0	35,818	71.8	1.8	60	No
	Whittram Avenue to Merrill Avenue	29,171	70.2	38,711	71.8	1.6	60	No
	Merrill Avenue to Randall Avenue	28,359	72.0	38,459	73.7	1.7	60	No
	Randall Avenue to San Bernardino Avenue	29,323	72.3	34,673	73.3	1.1	60	No
	San Bernardino Avenue to Valley Boulevard	24,334	71.3	28,694	72.3	1.0	60	No
	Valley Boulevard to I-10 WB Ramps	35,254	73.3	39,044	73.9	0.7	60	No
	I-10 WB Ramps to I-10 EB Ramps	37,448	73.4	39,598	73.8	0.4	60	No
	I-10 EB Ramps to Slover Avenue	30,191	72.0	31,361	72.2	0.2	60	No
	South of Slover Avenue	20,267	69.8	21,197	70.1	0.3	60	No
Beech Avenue	Highland Avenue to Baseline Avenue	10,695	62.3	10,695	62.3	0.0	60	No
	Foothill Boulevard to Arrow Route	4,006	58.0	4,006	58.3	0.4	60	No
	Arrow Route to Merrill Avenue	8,349	61.1	8,409	61.5	0.3	60	No
	Merrill Avenue to Randall Avenue	5,679	59.5	5,739	59.9	0.5	60	No
	Randall Avenue to San Bernardino Avenue	4,624	58.6	4,884	59.1	0.5	60	No
	San Bernardino to Valley Boulevard	3,360	57.2	3,360	57.2	0.0	60	No
Citrus Avenue	SR-210 WB Ramps to SR-210 EB Ramps	25,661	70.4	26,021	70.6	0.2	60	No
	SR-210 EB Ramps to Baseline Avenue	24,724	66.0	25,204	66.3	0.3	60	No

Table 18: Opening Year 2024 and Opening Year 2024 Plus Phase 1 Traffic Noise Levels

Roadway Segment		2024 Without Project		2024 Plus Phase 1		Change	Noise Threshold, (dBA CNEL)	Significant Impacts[1]
		ADT	dBA CNEL 100 Feet from Roadway Centerline	ADT	dBA CNEL 100 Feet from Roadway Centerline			
	Baseline Avenue to Foothill Boulevard	18,547	64.7	18,577	64.9	0.2	60	No
	Foothill Boulevard to Arrow Route	20,190	65.0	20,220	65.2	0.2	60	No
	Arrow Route to Merrill Avenue	23,102	64.4	23,192	64.6	0.2	60	No
	Merrill Avenue to Randall Avenue	18,837	63.5	18,997	63.8	0.3	60	No
	Randall Avenue to San Bernardino Avenue	19,015	64.8	19,515	65.3	0.5	60	No
	San Bernardino Avenue to Valley Boulevard	20,575	66.3	20,815	66.5	0.2	60	No
	Valley Boulevard to I-10 WB Ramps	30,117	68.2	30,927	68.7	0.5	60	No
	I-10 WB Ramps to I-10 EB Ramps	25,119	67.4	25,559	67.8	0.4	60	No
Sierra Avenue	SR-210 WB Ramps to SR-210 EB Ramps	29,405	70.2	29,705	70.4	0.1	60	No
	SR-210 EB Ramps to Highland Avenue	38,477	70.5	38,827	70.6	0.1	60	No
	Highland Avenue to Baseline Avenue	26,735	68.8	27,335	69.0	0.3	60	No
	Baseline Avenue to Foothill Boulevard	20,316	65.1	20,666	65.4	0.3	60	No
	Foothill Boulevard to Arrow Route	19,693	62.8	19,863	63.4	0.5	60	No
	Arrow Route to Merrill Avenue	18,908	62.7	19,378	63.4	0.8	60	No
	Merrill Avenue to Randall Avenue	21,783	65.4	22,023	65.6	0.1	60	No
	Randall Avenue to San Bernardino Avenue	23,387	65.7	24,287	66.2	0.5	60	No
	San Bernardino Avenue to Valley Boulevard	31,772	67.2	32,502	67.6	0.3	60	No
	Valley Boulevard to I-10 Ramps	50,580	68.3	51,070	68.5	0.2	60	No

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

Notes:
1. In accordance with CEQA Guidelines Appendix G, Section XIII(a), a significant traffic noise impact would occur if the proposed Project would result in a substantial increase (i.e., 3.0 dBA) over ambient conditions AND exceeds the County's traffic noise standard of 60 dBA CNEL for residential uses. The County allows for traffic noise levels up to 65 dBA CNEL at residential uses provided exterior noise levels have been substantially mitigated through a reasonable application of the best available noise reduction technology, and interior noise exposure does not exceed 45 dB(A) (or CNEL) with windows and doors closed.

Source: Based on traffic data within the *Speedway Commerce Center II Specific Plan Project Traffic Impact Study*, prepared by Kimley-Horn, January 2022. Refer to Appendix B for traffic noise modeling assumptions and results.

Opening Year 2027 Plus Phases 1 & 2 Traffic Conditions[25]

The Opening Year "2027 Without Project" and "2027 Plus Phases 1 & 2" scenarios were also compared. As shown in Table 19: Opening Year 2027 and Opening Year 2027 Plus Phases 1 & 2 Traffic Noise Levels, roadway noise levels would range between 57.4 dBA CNEL and 73.7 dBA CNEL at 100 feet from the centerline without the Project and between 57.4 dBA CNEL and 74.3 dBA CNEL with Phases 1 & 2 under Opening Year 2027 conditions. The Project would result in a maximum increase of 4.5 dBA CNEL along Randall Avenue (from Beech Avenue to Citrus Avenue). Table 19 shows that increases in traffic noise levels along Randall Avenue (from Cherry Avenue to Citrus Avenue) would exceed 3.0 dBA and would exceed the County's applicable noise standard of 60 dBA CNEL for residential uses along Randall Avenue. As discussed above in the "Opening Year 2024 – Phase 1 Traffic Conditions" traffic noise analysis, there is no

[25] Traffic from the commercial development is included in Phase 2 and is consistent with the Trip Generation table in the Project's Transportation Impact Study (Kimley-Horn, January 2022).

feasible mitigation to reduce off-site traffic noise impacts at the existing residential development along Randall Avenue. Therefore, implementation of the Project would result in a substantial increase in traffic noise levels and would exceed the County's applicable noise standards under Opening Year 2027 Plus Phases 1 & 2 conditions, and there is no feasible mitigation for existing development. A significant and unavoidable impact would occur in this regard.

Table 19: Opening Year 2027 and Opening Year 2027 Plus Phases 1 & 2 Traffic Noise Levels

Roadway Segment		2027 Without Project		2027 Plus Phases 1 & 2		Change	Noise Threshold (dBA CNEL)	Significant Impacts
		ADT	dBA CNEL 100 Feet from Roadway Centerline	ADT	dBA CNEL 100 Feet from Roadway Centerline			
Highland Avenue	West of Beech Avenue	7,952	62.2	7,952	62.2	0.0	60	No
	Beech Avenue to Citrus Avenue	11,256	63.6	11,256	63.6	0.0	60	No
	Citrus Avenue to Sierra Avenue	16,094	65.3	16,094	65.3	0.0	60	No
Baseline Avenue	Etiwanda Avenue to I-15 SB Ramps	22,624	67.9	22,624	67.9	0.0	60	No
	I-15 SB Ramps to I-15 NB Ramps	26,835	69.4	26,975	69.5	0.1	60	No
	I-15 NB Ramps to Cherry Avenue	26,354	67.7	26,624	67.7	0.1	60	No
	Cherry Avenue to Beech Avenue	27,978	67.9	30,218	68.7	0.9	60	No
	Beech Avenue to Citrus Avenue	21,456	66.7	23,126	67.4	0.8	60	No
	Citrus Avenue to Sierra Avenue	18,564	66.1	19,874	66.6	0.7	60	No
Foothill Boulevard	I-15 SB Ramps to I-15 NB Ramps	43,434	71.0	45,194	62.2	0.5	60	No
	I-15 NB Ramps to Etiwanda Avenue	32,853	69.8	35,503	63.6	0.9	60	No
	Etiwanda Avenue to Beech Avenue	24,224	68.3	24,264	65.3	0.0	60	No
	Cherry Avenue to Beech Avenue	24,633	68.4	25,773	67.9	0.5	60	No
	Beech Avenue to Citrus Avenue	25,885	67.3	27,355	69.5	0.7	60	No
	Citrus Avenue to Sierra Avenue	22,756	66.8	23,656	67.8	0.5	60	No
Arrow Route	Milliken Avenue to Etiwanda Avenue	22,768	67.9	23,488	68.8	0.3	60	No
	Etiwanda Avenue to Cherry Avenue	16,509	65.3	16,509	67.5	0.0	60	No
	Cherry Avenue to Beech Avenue	17,706	65.6	18,706	66.8	0.7	60	No
	Beech Avenue to Citrus Avenue	15,941	65.1	17,001	71.5	0.8	60	No
	Citrus Avenue to Sierra Avenue	15,944	62.8	16,584	70.7	0.6	60	No
Merrill Avenue	Cherry Avenue to Beech Avenue	7,673	60.8	8,233	68.3	0.9	60	No
	Beech Avenue to Citrus Avenue	8,928	61.4	9,488	68.9	0.8	60	No
	Citrus Avenue to Sierra Avenue	12,262	62.9	13,672	68.0	1.4	60	No
Randall Avenue	Cherry Avenue to Beech Avenue	9,602	61.8	15,572	67.3	4.4	60	Yes
	Beech Avenue to Citrus Avenue	7,561	60.7	12,401	68.2	4.5	60	Yes
	Citrus Avenue to Sierra Avenue	8,555	61.3	10,705	65.3	2.5	60	No
Fourth Street / San Bernardino Avenue	I-15 SB Ramps to I-15 NB Ramps	27,184	72.9	29,014	66.3	0.4	60	No
	I-15 NB Ramps to Etiwanda Avenue	18,129	70.0	21,619	65.9	1.0	60	No
	Etiwanda Avenue to Commerce Drive	13,130	69.3	16,840	63.4	1.4	60	No
	Commerce Drive to Cherry Avenue	21,267	71.5	28,927	61.6	1.8	60	No
	Cherry Avenue to Beech Avenue	12,634	66.6	13,804	62.3	0.5	60	No
	Beech Avenue to Citrus Avenue	9,826	65.5	10,776	64.3	0.6	60	No
	Citrus Avenue to Sierra Avenue	12,214	66.5	13,184	66.2	0.5	60	No
Valley Boulevard	Commerce Drive / I-10 Ramps to Cherry Avenue	21,571	71.4	21,571	65.2	0.0	60	No
	Cherry Avenue to Beech Avenue	19,339	70.9	20,609	63.9	0.3	60	No
Etiwanda Avenue	Baseline Avenue to Foothill Boulevard	11,795	67.2	12,315	73.3	0.3	60	No
	Foothill Boulevard to Arrow Route	16,960	69.6	20,170	71.0	1.0	60	No
	Arrow Route to San Bernardino Avenue / Fourth Street	19,422	70.9	23,352	70.8	1.1	60	No
	San Bernardino Avenue / Fourth Street to Valley Boulevard	19,321	70.3	20,771	73.2	0.4	60	No
	Valley Boulevard to I-10 WB Ramps	25,940	71.8	27,390	67.1	0.3	60	No
	I-10 WB Ramps to I-10 EB Ramps	26,866	71.8	27,806	66.1	0.2	60	No
Cherry Avenue	SR-210 WB Ramps to SR-210 EB Ramps	17,844	69.7	19,224	66.9	0.5	60	No

Table 19: Opening Year 2027 and Opening Year 2027 Plus Phases 1 & 2 Traffic Noise Levels

Roadway Segment		2027 Without Project		2027 Plus Phases 1 & 2		Change	Noise Threshold (dBA CNEL)	Significant Impacts
		ADT	dBA CNEL 100 Feet from Roadway Centerline	ADT	dBA CNEL 100 Feet from Roadway Centerline			
	SR-210 EB Ramps to Baseline Avenue	22,245	70.0	24,735	71.4	0.7	60	No
	Baseline Avenue to Foothill Boulevard	25,701	70.9	31,231	71.2	1.2	60	No
	Foothill Boulevard to Arrow Route	25,023	69.8	31,653	67.5	1.4	60	No
	Arrow Route to Whittram Avenue	27,586	70.3	35,216	70.6	1.5	60	No
	Whittram Avenue to Merrill Avenue	30,641	70.4	38,271	72.0	1.3	60	No
	Merrill Avenue to Randall Avenue	29,769	72.2	37,959	70.7	1.4	60	No
	Randall Avenue to San Bernardino Avenue	30,757	72.5	38,577	72.1	1.3	60	No
	San Bernardino Avenue to Valley Boulevard	25,548	71.5	31,938	72.8	1.3	60	No
	Valley Boulevard to I-10 WB Ramps	37,087	73.5	42,207	74.3	0.8	60	No
	I-10 WB Ramps to I-10 EB Ramps	39,456	73.7	42,596	74.1	0.5	60	No
	I-10 EB Ramps to Slover Avenue	31,862	72.2	33,062	72.4	0.2	60	No
	South of Slover Avenue	21,383	70.0	22,343	70.3	0.3	60	No
Beech Avenue	Highland Avenue to Baseline Avenue	11,301	62.5	11,301	62.5	0.0	60	No
	Foothill Boulevard to Arrow Route	4,231	58.2	4,561	58.9	0.7	60	No
	Arrow Route to Merrill Avenue	8,817	61.4	9,207	61.9	0.5	60	No
	Merrill Avenue to Randall Avenue	5,997	59.7	6,387	60.4	0.7	60	No
	Randall Avenue to San Bernardino Avenue	4,878	58.8	5,138	59.3	0.5	60	No
	San Bernardino to Valley Boulevard	3,550	57.4	3,550	57.4	0.0	60	No
Citrus Avenue	SR-210 WB Ramps to SR-210 EB Ramps	27,102	70.6	27,462	70.8	0.2	60	No
	SR-210 EB Ramps to Baseline Avenue	26,108	66.2	26,598	66.5	0.3	60	No
	Baseline Avenue to Foothill Boulevard	19,594	64.9	19,954	65.2	0.3	60	No
	Foothill Boulevard to Arrow Route	21,330	65.3	21,690	65.5	0.2	60	No
	Arrow Route to Merrill Avenue	24,404	64.6	24,824	64.9	0.3	60	No
	Merrill Avenue to Randall Avenue	19,894	63.7	20,334	64.0	0.3	60	No
	Randall Avenue to San Bernardino Avenue	20,029	65.0	20,859	65.6	0.6	60	No
	San Bernardino Avenue to Valley Boulevard	21,691	66.5	21,931	66.7	0.1	60	No
	Valley Boulevard to I-10 WB Ramps	31,774	68.4	33,284	69.0	0.6	60	No
	I-10 WB Ramps to I-10 EB Ramps	26,508	67.6	27,398	68.1	0.4	60	No
Sierra Avenue	SR-210 WB Ramps to SR-210 EB Ramps	31,060	70.5	31,370	70.6	0.1	60	No
	SR-210 EB Ramps to Highland Avenue	40,643	70.7	41,013	70.8	0.1	60	No
	Highland Avenue to Baseline Avenue	28,229	69.0	28,839	69.3	0.2	60	No
	Baseline Avenue to Foothill Boulevard	21,452	65.3	22,132	65.7	0.4	60	No
	Foothill Boulevard to Arrow Route	20,796	63.1	21,626	63.7	0.7	60	No
	Arrow Route to Merrill Avenue	19,956	62.9	21,086	63.8	0.9	60	No
	Merrill Avenue to Randall Avenue	23,007	65.7	23,247	65.8	0.1	60	No
	Randall Avenue to San Bernardino Avenue	24,674	66.0	25,574	66.5	0.5	60	No
	San Bernardino Avenue to Valley Boulevard	33,544	67.5	34,364	67.8	0.4	60	No
	Valley Boulevard to I-10 Ramps	53,421	68.5	54,001	68.7	0.2	60	No

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

Notes:

Table 19: Opening Year 2027 and Opening Year 2027 Plus Phases 1 & 2 Traffic Noise Levels

Roadway Segment	2027 Without Project		2027 Plus Phases 1 & 2		Change	Noise Threshold (dBA CNEL)	Significant Impacts
	ADT	dBA CNEL 100 Feet from Roadway Centerline	ADT	dBA CNEL 100 Feet from Roadway Centerline			

1. In accordance with CEQA Guidelines Appendix G, Section XIII(a), a significant traffic noise impact would occur if the proposed Project would result in a substantial increase (i.e., 3.0 dBA) over ambient conditions AND exceeds the County's traffic noise standard of 60 dBA CNEL for residential uses. The County allows for traffic noise levels up to 65 dBA CNEL at residential uses provided exterior noise levels have been substantially mitigated through a reasonable application of the best available noise reduction technology, and interior noise exposure does not exceed 45 dB(A) (or CNEL) with windows and doors closed.

Source: Based on traffic data within the *Speedway Commerce Center II Specific Plan Project Traffic Impact Study*, prepared by Kimley-Horn, January 2022. Refer to Appendix B for traffic noise modeling assumptions and results.

Horizon Year 2040 Plus Phases 1 & 2 Traffic Conditions

The Horizon Year "2040 Without Project" and "2040 Plus Phases 1 & 2" scenarios were also compared. As shown in Table 20: Horizon Year 2040 and Opening Year 2040 Plus Phases 1 & 2 Traffic Noise Levels, roadway noise levels would range between 61.3 dBA CNEL and 74.2 dBA CNEL at 100 feet from the centerline without the Project and between 61.8 dBA CNEL and 74.9 dBA CNEL with Phases 1 & 2 under Horizon Year 2040 conditions. The Project would result in a maximum increase of 3.8 dBA CNEL along Randall Avenue (from Beech Avenue to Citrus Avenue). Table 20 shows that increases in traffic noise levels along Randall Avenue (from Cherry Avenue to Citrus Avenue) would exceed 3.0 dBA and would exceed the County's applicable noise standard of 60 dBA CNEL for residential uses along Randall Avenue. As discussed above, there is no feasible mitigation for existing residential development along local roadways in the Project vicinity. Therefore, implementation of the Project would result in a substantial increase in traffic noise levels and would exceed the County's applicable noise standards under Horizon Year 2040 Plus Phases 1 & 2 conditions, and there is no feasible mitigation for existing development. A significant and unavoidable impact would occur in this regard.

Table 20: Horizon Year 2040 and Horizon Year 2040 Plus Phases 1 & 2 Traffic Noise Levels

Roadway Segment		2040 Without Project		2040 Plus Phases 1 & 2		Change	Noise Threshold (dBA CNEL)	Significant Impacts[1]
		ADT	dBA CNEL 100 Feet from Roadway Centerline	ADT	dBA CNEL 100 Feet from Roadway Centerline			
Highland Avenue	West of Beech Avenue	10,480	63.4	10,480	63.4	0.0	60	No
	Beech Avenue to Citrus Avenue	14,280	64.7	14,280	64.7	0.0	60	No
	Citrus Avenue to Sierra Avenue	20,640	66.4	20,640	66.4	0.0	60	No
Baseline Avenue	Etiwanda Avenue to I-15 SB Ramps	30,660	69.3	30,660	69.3	0.0	60	No
	I-15 SB Ramps to I-15 NB Ramps	31,770	70.1	31,910	70.2	0.1	60	No
	I-15 NB Ramps to Cherry Avenue	32,240	68.5	32,510	68.6	0.1	60	No
	Cherry Avenue to Beech Avenue	31,250	68.4	33,490	69.3	0.9	60	No
	Beech Avenue to Citrus Avenue	30,560	68.3	32,230	69.0	0.7	60	No
	Citrus Avenue to Sierra Avenue	28,580	68.0	29,890	68.6	0.6	60	No
Foothill Boulevard	I-15 SB Ramps to I-15 NB Ramps	45,090	71.1	46,850	71.6	0.5	60	No
	I-15 NB Ramps to Etiwanda Avenue	36,570	70.2	39,220	71.1	0.9	60	No
	Etiwanda Avenue to Beech Avenue	28,920	69.1	28,960	69.1	0.0	60	No
	Cherry Avenue to Beech Avenue	28,900	69.1	30,040	69.6	0.5	60	No
	Beech Avenue to Citrus Avenue	28,580	67.7	30,050	68.4	0.7	60	No
	Citrus Avenue to Sierra Avenue	27,060	67.5	27,960	68.0	0.4	60	No
Arrow Route	Milliken Avenue to Etiwanda Avenue	38,850	70.2	39,570	70.4	0.2	60	No
	Etiwanda Avenue to Cherry Avenue	34,960	68.5	34,960	68.5	0.0	60	No
	Cherry Avenue to Beech Avenue	19,800	66.1	20,800	66.7	0.7	60	No

Table 20: Horizon Year 2040 and Horizon Year 2040 Plus Phases 1 & 2 Traffic Noise Levels

Roadway Segment		2040 Without Project		2040 Plus Phases 1 & 2		Change	Noise Threshold (dBA CNEL)	Significant Impacts[1]
		ADT	dBA CNEL 100 Feet from Roadway Centerline	ADT	dBA CNEL 100 Feet from Roadway Centerline			
	Beech Avenue to Citrus Avenue	18,540	65.8	19,600	66.5	0.7	60	No
	Citrus Avenue to Sierra Avenue	17,660	63.2	18,300	63.8	0.6	60	No
Merrill Avenue	Cherry Avenue to Beech Avenue	10,020	61.9	10,580	62.7	0.8	60	No
	Beech Avenue to Citrus Avenue	9,940	61.9	10,500	62.7	0.8	60	No
	Citrus Avenue to Sierra Avenue	13,680	63.4	15,090	64.7	1.4	60	No
Randall Avenue	Cherry Avenue to Beech Avenue	15,570	63.9	21,540	67.6	3.7	60	Yes
	Beech Avenue to Citrus Avenue	12,100	62.8	16,940	66.6	3.8	60	Yes
	Citrus Avenue to Sierra Avenue	10,440	62.2	12,590	64.6	2.4	60	No
Fourth Street / San Bernardino Avenue	I-15 SB Ramps to I-15 NB Ramps	30,550	73.4	32,380	73.8	0.4	60	No
	I-15 NB Ramps to Etiwanda Avenue	21,800	70.8	25,290	71.7	0.9	60	No
	Etiwanda Avenue to Commerce Drive	17,000	70.5	20,710	71.7	1.2	60	No
	Commerce Drive to Cherry Avenue	27,150	72.5	34,810	74.0	1.5	60	No
	Cherry Avenue to Beech Avenue	15,710	67.5	16,880	68.0	0.5	60	No
	Beech Avenue to Citrus Avenue	11,530	66.2	12,480	66.7	0.5	60	No
	Citrus Avenue to Sierra Avenue	13,090	66.8	14,060	67.2	0.5	60	No
Valley Boulevard	Commerce Drive / I-10 Ramps to Cherry Avenue	21,570	71.4	21,570	71.4	0.0	60	No
	Cherry Avenue to Beech Avenue	28,460	72.6	29,730	72.8	0.2	60	No
Etiwanda Avenue	Baseline Avenue to Foothill Boulevard	12,340	67.4	12,860	67.7	0.3	60	No
	Foothill Boulevard to Arrow Route	20,850	70.5	24,060	71.4	0.9	60	No
	Arrow Route to San Bernardino Avenue / Fourth Street	22,800	71.6	26,730	72.6	1.0	60	No
	San Bernardino Avenue / Fourth Street to Valley Boulevard	24,750	71.3	26,200	71.7	0.4	60	No
	Valley Boulevard to I-10 WB Ramps	34,270	73.0	35,720	73.2	0.3	60	No
	I-10 WB Ramps to I-10 EB Ramps	33,070	72.7	34,010	72.8	0.2	60	No
Cherry Avenue	SR-210 WB Ramps to SR-210 EB Ramps	22,330	70.6	23,710	71.0	0.4	60	No
	SR-210 EB Ramps to Baseline Avenue	24,930	70.5	27,420	71.1	0.6	60	No
	Baseline Avenue to Foothill Boulevard	31,400	71.7	36,930	72.7	1.0	60	No
	Foothill Boulevard to Arrow Route	34,470	71.2	41,100	72.4	1.1	60	No
	Arrow Route to Whittram Avenue	35,450	71.3	43,080	72.6	1.3	60	No
	Whittram Avenue to Merrill Avenue	39,840	71.6	47,470	72.7	1.1	60	No
	Merrill Avenue to Randall Avenue	37,530	73.2	45,720	74.4	1.2	60	No
	Randall Avenue to San Bernardino Avenue	38,580	73.4	46,400	74.6	1.1	60	No
	San Bernardino Avenue to Valley Boulevard	32,750	72.6	39,140	73.7	1.1	60	No
	Valley Boulevard to I-10 WB Ramps	43,730	74.2	48,850	74.9	0.7	60	No
	I-10 WB Ramps to I-10 EB Ramps	43,590	74.1	46,730	74.5	0.4	60	No
	I-10 EB Ramps to Slover Avenue	41,880	73.4	43,080	73.6	0.2	60	No
	South of Slover Avenue	26,820	71.0	27,780	71.2	0.2	60	No
Beech Avenue	Highland Avenue to Baseline Avenue	16,190	64.1	16,190	64.1	0.0	60	No
	Foothill Boulevard to Arrow Route	9,040	61.5	9,370	62.0	0.5	60	No
	Arrow Route to Merrill Avenue	13,920	63.4	14,310	63.8	0.4	60	No
	Merrill Avenue to Randall Avenue	9,390	61.7	9,780	62.3	0.6	60	No
	Randall Avenue to San Bernardino Avenue	8,710	61.3	8,970	61.8	0.4	60	No
	San Bernardino to Valley Boulevard	12,610	62.9	12,610	62.9	0.0	60	No
Citrus Avenue	SR-210 WB Ramps to SR-210 EB Ramps	28,280	70.8	28,640	71.0	0.2	60	No
	SR-210 EB Ramps to Baseline Avenue	26,600	66.3	27,090	66.6	0.3	60	No
	Baseline Avenue to Foothill Boulevard	20,590	65.1	20,950	65.4	0.3	60	No
	Foothill Boulevard to Arrow Route	22,980	65.6	23,340	65.8	0.2	60	No
	Arrow Route to Merrill Avenue	25,580	64.9	26,000	65.1	0.3	60	No
	Merrill Avenue to Randall Avenue	21,280	64.0	21,720	64.3	0.3	60	No

Table 20: Horizon Year 2040 and Horizon Year 2040 Plus Phases 1 & 2 Traffic Noise Levels

Roadway Segment		2040 Without Project		2040 Plus Phases 1 & 2		Change	Noise Threshold (dBA CNEL)	Significant Impacts[1]
		ADT	dBA CNEL 100 Feet from Roadway Centerline	ADT	dBA CNEL 100 Feet from Roadway Centerline			
	Randall Avenue to San Bernardino Avenue	21,140	65.2	21,970	65.8	0.6	60	No
	San Bernardino Avenue to Valley Boulevard	22,420	66.7	22,660	66.8	0.1	60	No
	Valley Boulevard to I-10 WB Ramps	33,560	68.7	35,070	69.3	0.6	60	No
	I-10 WB Ramps to I-10 EB Ramps	27,410	67.8	28,300	68.2	0.4	60	No
Sierra Avenue	SR-210 WB Ramps to SR-210 EB Ramps	33,530	70.8	33,840	70.9	0.1	60	No
	SR-210 EB Ramps to Highland Avenue	46,760	71.3	47,130	71.4	0.1	60	No
	Highland Avenue to Baseline Avenue	32,460	69.6	33,070	69.9	0.2	60	No
	Baseline Avenue to Foothill Boulevard	26,120	66.2	26,800	66.5	0.4	60	No
	Foothill Boulevard to Arrow Route	27,020	64.2	27,850	64.8	0.6	60	No
	Arrow Route to Merrill Avenue	25,240	63.9	26,370	64.8	0.9	60	No
	Merrill Avenue to Randall Avenue	26,680	66.3	26,920	66.5	0.1	60	No
	Randall Avenue to San Bernardino Avenue	28,700	66.6	29,600	67.1	0.5	60	No
	San Bernardino Avenue to Valley Boulevard	34,770	67.6	35,590	68.0	0.3	60	No
	Valley Boulevard to I-10 Ramps	54,870	68.7	55,450	68.8	0.2	60	No

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

Notes:

1. In accordance with CEQA Guidelines Appendix G, Section XIII(a), a significant traffic noise impact would occur if the proposed Project would result in a substantial increase (i.e., 3.0 dBA) over ambient conditions AND exceeds the County's traffic noise standard of 60 dBA CNEL for residential uses. The County allows for traffic noise levels up to 65 dBA CNEL at residential uses provided exterior noise levels have been substantially mitigated through a reasonable application of the best available noise reduction technology, and interior noise exposure does not exceed 45 dB(A) (or CNEL) with windows and doors closed.

Source: Based on traffic data within the *Speedway Commerce Center II Specific Plan Project Traffic Impact Study*, prepared by Kimley-Horn, January 2022. Refer to Appendix B for traffic noise modeling assumptions and results.

As shown in Table 18, Table 19, and Table 20, the amount of traffic generated by the Project would result in a substantial increase in traffic noise in exceedance of the County's noise standards under Opening Year 2024 Plus Phase 1, Opening Year 2027 Plus Phases 1 & 2, and Opening Year 2040 Plus Phases 1 & 2 conditions, and there is no feasible mitigation to reduce these impacts. It should be noted, however, that as electric trucks and passenger vehicles become more commercially available in accordance with California's Advanced Clean Truck (ACT) and zero emission vehicle (ZEV) rules, the truck fleets and passenger vehicles accessing the Project site would generate lower traffic noise levels compared to a business-as-usual scenario. Nonetheless, off-site traffic noise impacts from the Project would be significant and unavoidable.

Standard Conditions and Requirements:

SC NOI-1 Prior to Grading Permit issuance, the Master Developer and/or Site Developer, as applicable, shall demonstrate, to the satisfaction of the County Engineer that the Project complies with the following:

- Construction contracts specify that all construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers and other State required noise attenuation devices.

- A sign, legible at 50 feet shall be posted at the Project construction site. The sign(s) shall be reviewed and approved by the Building Official and City Planning Department, prior to posting and shall indicate the dates and duration of construction activities, as well as provide a contact name and a telephone number where residents can inquire about the construction process and register complaints.

- Prior to issuance of any Grading or Building Permit, the Contractor shall provide evidence that a construction staff member will be designated as a Noise Disturbance Coordinator and will be present on-site during construction activities. The Noise Disturbance Coordinator is responsible for responding to local complaints about construction noise. When a complaint is received, the Noise Disturbance Coordinator shall notify the County within 24-hours of the complaint, determine the cause (e.g., starting too early, bad muffler, etc.), and implement reasonable measures to resolve the complaint as deemed acceptable by the Public Works Department.

- Prior to issuance of any Grading or Building Permit, the Master Developer and/or Site Developer, as applicable, shall demonstrate to the satisfaction of the County Engineer that construction noise reduction methods shall be used where feasible. These reduction methods include shutting off idling equipment, installing temporary acoustic barriers around stationary construction noise sources, maximizing the distance between construction equipment staging areas and occupied residential areas, and electric air compressors and similar power tools.

- Construction haul routes shall be designed to avoid noise-sensitive uses (e.g., residences, convalescent homes, etc.) to the extent feasible.

- During construction, stationary construction equipment shall be placed such that emitted noise is directed away from sensitive noise receivers.

- Unless otherwise approved by the County, Project construction activities that generate noise shall be limited to the hours between 7:00 a.m. and 7:00 p.m., except for Sundays and Federal holidays in compliance with San Bernardino County Code Section 83.01.080(g)(3).

Mitigation Measures: There are no feasible mitigation to reduce the traffic noise impacts identified above.

Level of Significance: Significant and unavoidable impact.

Construction and Operational Noise Mitigation & Residual Impacts: On-site operational noise impacts would be less than significant and no mitigation is required. However, off-site traffic noise levels would result in a significant and unavoidable impact. Potential mitigation measures would include the construction of sound walls, noise abatement design features at the existing sensitive residences, and/or pre-paving the impacted roadway segments with rubberized. However, the Project applicant (and the future Master Developer/Site Developers) does not have jurisdiction over the local roadways and/or existing residences to properly mitigate traffic noise impacts at the impacted receivers. No additional

feasible mitigation measures are available that can reduce off-site mobile traffic noise impacts to a less than significant level.

Threshold 6.2 Would the Project generate excessive groundborne vibration or groundborne noise levels?

Construction Vibration

Construction can generate varying degrees of ground vibration, depending on the construction procedures and equipment. Operation of construction equipment generates vibrations that spread through the ground and diminish with distance from the source. Construction on the Project site would have the potential to result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used and the operations involved.

The 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 PPV) 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.[26] 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 21: Typical Construction Equipment Vibration Levels, lists vibration levels at 25 feet for typical construction equipment. Vibration levels at 40 feet (the distance from the Project boundary to the nearest existing structure) is also included in Table 21. Groundborne vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. As indicated in Table 21, 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.

The nearest off-site structure is located approximately 40 feet from the Project site boundary. As indicated in Table 21, vibration velocities from construction equipment at 40 feet would not exceed 0.0440 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 Project construction would be less than significant.

[26] Based on construction vibration reference levels provided in the FTA *Transit Noise and Vibration Impact Assessment Manual*, September 2018.

Table 21: Typical Construction Equipment Vibration Levels		
Equipment	**Peak Particle Velocity at 25 Feet (in/sec)**	**Peak Particle Velocity at 40 Feet (in/sec)[1]**
Large Bulldozer	0.089	0.0440
Caisson Drilling	0.089	0.0440
Loaded Trucks	0.076	0.0376
Jackhammer	0.035	0.0173
Small Bulldozer/Tractors	0.003	0.0015
Notes: 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.		

Operational Vibration

The Project would include truck movement activity at the Project site. These movements would generally be low-speed (i.e., less than 15 miles per hour) and would occur over new, smooth surfaces. For perspective, Caltrans has studied the effects of propagation of vehicle vibration on sensitive land uses and notes that "heavy trucks, and quite frequently buses, generate the highest earthborn vibrations of normal traffic."[27] Caltrans further notes that the highest traffic-generated vibrations are along freeways and state routes. Their study finds that "vibrations measured on freeway shoulders (five meters from the centerline of the nearest lane) have never exceeded 0.08 inches per second, with the worst combinations of heavy trucks and poor roadway conditions (while such trucks were moving at freeway speeds). This level coincides with the maximum recommended safe level for ruins and ancient monuments (and historic buildings)".[28] Since the Project's truck movements would be at low speed (not at freeway speeds) and would be over smooth surfaces (not under poor roadway conditions), Project-related vibration associated with truck activity would not result in excessive groundborne vibrations; no vehicle-generated vibration impacts would occur. In addition, there are no sources of substantial groundborne vibration associated with operation of the Project, such as rail or subways. The Project would not create or cause any vibration impacts due to operations.

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?

The closest airport to the Project site is the Ontario International Airport located approximately four miles to the southwest. 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

[27] California Department of Transportation, *Transportation Related Earthborne Vibrations*, February 20, 2002.
[28] California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol ("TeNS")*, September 2013.

not expose people 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

The Project's construction activities would not result in a substantial temporary increase in ambient noise levels. Construction noise would be periodic and temporary, and would cease upon completion of construction activities. Further, based on the noise analysis above, the Project's construction-related noise impacts would be less than significant under the San Bernardino County Code and FTA methodology, and in compliance with SC NOI-1.

There are several cumulative development projects within the immediate vicinity of the Project site. The Project would contribute to other proximate construction project noise impacts if construction activities were conducted concurrently. However, construction activities at other planned and approved projects near the Project site would, be required to comply with applicable County rules related to noise including limiting construction to daytime hours with no construction on Sundays or Federal holidays. Further, projects requiring County discretionary approvals would be required to evaluate construction noise impacts, comply with the County's standard conditions of approval, and implement mitigation, if necessary, to minimize noise impacts. Construction noise impacts are by nature localized. As discussed above, the Project's construction impacts were determined to be less than significant. Therefore, Project construction would not result in a cumulatively considerable contribution to a significant cumulative impact related to construction noise.

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 Horizon Year Without Project scenarios to the Horizon Year 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. To analyze the Project's cumulative contribution to traffic noise levels in the Project area and in accordance with the *King and Gardiner Farms, LLC v. County of Kern et al*. (2020) court decision mandating absolute noise thresholds for CEQA analyses, 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 ("Horizon Year 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 "Horizon Year With Project" causes a 1.0 dBA increase in noise over the "Horizon Year 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 22: Cumulative Traffic Noise Levels identifies the traffic noise effects along roadway segments in the Project vicinity for "Existing," "Horizon Year 2040 Without Project," and "Horizon Year 2040 With Phases 1&2," conditions, including incremental and net cumulative impacts.

Table 22: Cumulative Traffic Noise Levels

Roadway Segment		Existing	Horizon Year 2040 Without Project	Horizon Year 2040 With Phases 1&2	Combined Effects	Incremental Effects	Cumulatively Significant Impact?
					Difference In dBA Between Existing and Horizon Year With Phases 1&2	Difference In dBA Between Horizon Year 2040 Without Project and Horizon Year 2040 With Phases 1&2	
Highland Avenue	West of Beech Avenue	61.7	63.4	63.4	1.7	0.0	No
	Beech Avenue to Citrus Avenue	63.1	64.7	64.7	1.5	0.0	No
	Citrus Avenue to Sierra Avenue	64.8	66.4	66.4	1.6	0.0	No
Baseline Avenue	Etiwanda Avenue to I-15 SB Ramps	67.4	69.3	69.3	1.8	0.0	No
	I-15 SB Ramps to I-15 NB Ramps	68.9	70.1	70.2	1.3	0.1	No
	I-15 NB Ramps to Cherry Avenue	67.2	68.5	68.6	1.5	0.1	No
	Cherry Avenue to Beech Avenue	67.2	68.4	69.3	2.0	0.9	No
	Beech Avenue to Citrus Avenue	66.1	68.3	69.0	2.9	0.7	No
	Citrus Avenue to Sierra Avenue	65.5	68.0	68.6	3.1	0.6	No
Foothill Boulevard	I-15 SB Ramps to I-15 NB Ramps	70.4	71.1	71.6	1.2	0.5	No
	I-15 NB Ramps to Etiwanda Avenue	69.1	70.2	71.1	2.0	0.9	No
	Etiwanda Avenue to Beech Avenue	67.8	69.1	69.1	1.3	0.0	No
	Cherry Avenue to Beech Avenue	67.8	69.1	69.6	1.8	0.5	No
	Beech Avenue to Citrus Avenue	66.7	67.7	68.4	1.7	0.7	No
	Citrus Avenue to Sierra Avenue	66.2	67.5	68.0	1.8	0.4	No
Arrow Route	Milliken Avenue to Etiwanda Avenue	67.3	70.2	70.4	3.1	0.2	No
	Etiwanda Avenue to Cherry Avenue	64.8	68.5	68.5	3.8	0.0	No
	Cherry Avenue to Beech Avenue	65.0	66.1	66.7	1.8	0.7	No
	Beech Avenue to Citrus Avenue	64.5	65.8	66.5	2.0	0.7	No
	Citrus Avenue to Sierra Avenue	62.2	63.2	63.8	1.6	0.6	No
Merrill Avenue	Cherry Avenue to Beech Avenue	60.1	61.9	62.7	2.6	0.8	No
	Beech Avenue to Citrus Avenue	60.8	61.9	62.7	1.9	0.8	No
	Citrus Avenue to Sierra Avenue	62.2	63.4	64.7	2.5	1.4	No
Randall Avenue	Cherry Avenue to Beech Avenue	59.5	63.9	67.6	8.1	3.7	Yes
	Beech Avenue to Citrus Avenue	58.2	62.8	66.6	8.4	3.8	Yes
	Citrus Avenue to Sierra Avenue	60.1	62.2	64.6	4.4	2.4	Yes
	I-15 SB Ramps to I-15 NB Ramps	72.3	73.4	73.8	1.5	0.4	No

Table 22: Cumulative Traffic Noise Levels

Roadway Segment		Existing	Horizon Year 2040 Without Project	Horizon Year 2040 With Phases 1&2	Combined Effects	Incremental Effects	Cumulatively Significant Impact?
					Difference In dBA Between Existing and Horizon Year With Phases 1&2	Difference In dBA Between Horizon Year 2040 Without Project and Horizon Year 2040 With Phases 1&2	
Fourth Street / San Bernardino Avenue	I-15 NB Ramps to Etiwanda Avenue	69.2	70.8	71.7	2.5	0.9	No
	Etiwanda Avenue to Commerce Drive	68.4	70.5	71.7	3.3	1.2	Yes
	Commerce Drive to Cherry Avenue	70.5	72.5	74.0	3.6	1.5	Yes
	Cherry Avenue to Beech Avenue	66.0	67.5	68.0	2.0	0.5	No
	Beech Avenue to Citrus Avenue	64.9	66.2	66.7	1.8	0.5	No
	Citrus Avenue to Sierra Avenue	65.9	66.8	67.2	1.3	0.5	No
Valley Boulevard	Commerce Drive / I-10 Ramps to Cherry Avenue	70.9	71.4	71.4	0.5	0.0	No
	Cherry Avenue to Beech Avenue	70.4	72.6	72.8	2.4	0.2	No
Etiwanda Avenue	Baseline Avenue to Foothill Boulevard	66.6	67.4	67.7	1.1	0.3	No
	Foothill Boulevard to Arrow Route	68.7	70.5	71.4	2.6	0.9	No
	Arrow Route to San Bernardino Avenue / Fourth Street	70.0	71.6	72.6	2.6	1.0	No
	San Bernardino Avenue / Fourth Street to Valley Boulevard	69.7	71.3	71.7	2.0	0.4	No
	Valley Boulevard to I-10 WB Ramps	71.2	73.0	73.2	2.0	0.3	No
	I-10 WB Ramps to I-10 EB Ramps	71.2	72.7	72.8	1.6	0.2	No
Cherry Avenue	SR-210 WB Ramps to SR-210 EB Ramps	69.0	70.6	71.0	2.0	0.4	No
	SR-210 EB Ramps to Baseline Avenue	69.3	70.5	71.1	1.8	0.6	No
	Baseline Avenue to Foothill Boulevard	70.0	71.7	72.7	2.8	1.0	No
	Foothill Boulevard to Arrow Route	68.8	71.2	72.4	3.5	1.1	Yes
	Arrow Route to Whittram Avenue	69.2	71.3	72.6	3.4	1.3	Yes
	Whittram Avenue to Merrill Avenue	69.5	71.6	72.7	3.2	1.1	Yes
	Merrill Avenue to Randall Avenue	71.2	73.2	74.4	3.3	1.2	Yes
	Randall Avenue to San Bernardino Avenue	71.4	73.4	74.6	3.2	1.1	Yes
	San Bernardino Avenue to Valley Boulevard	70.5	72.6	73.7	3.2	1.1	Yes
	Valley Boulevard to I-10 WB Ramps	72.7	74.2	74.9	2.3	0.7	No
	I-10 WB Ramps to I-10 EB Ramps	72.9	74.1	74.5	1.6	0.4	No
	I-10 EB Ramps to Slover Avenue	71.6	73.4	73.6	2.0	0.2	No
	South of Slover Avenue	69.4	71.0	71.2	1.8	0.2	No
Beech Avenue	Highland Avenue to Baseline Avenue	62.1	64.1	64.1	2.1	0.0	No
	Foothill Boulevard to Arrow Route	57.7	61.5	62.0	4.3	0.5	No
	Arrow Route to Merrill Avenue	60.9	63.4	63.8	2.9	0.4	No
	Merrill Avenue to Randall Avenue	59.2	61.7	62.3	3.1	0.6	No
	Randall Avenue to San Bernardino Avenue	58.2	61.3	61.8	3.6	0.4	No
	San Bernardino to Valley Boulevard	56.9	62.9	62.9	6.0	0.0	No
Citrus Avenue	SR-210 WB Ramps to SR-210 EB Ramps	70.1	70.8	71.0	0.9	0.2	No
	SR-210 EB Ramps to Baseline Avenue	65.7	66.3	66.6	0.9	0.3	No
	Baseline Avenue to Foothill Boulevard	64.4	65.1	65.4	1.0	0.3	No
	Foothill Boulevard to Arrow Route	64.8	65.6	65.8	1.1	0.2	No
	Arrow Route to Merrill Avenue	64.1	64.9	65.1	1.0	0.3	No
	Merrill Avenue to Randall Avenue	63.2	64.0	64.3	1.2	0.3	No
	Randall Avenue to San Bernardino Avenue	64.3	65.2	65.8	1.5	0.6	No
	San Bernardino Avenue to Valley Boulevard	65.9	66.7	66.8	1.0	0.1	No
	Valley Boulevard to I-10 WB Ramps	67.8	68.7	69.3	1.4	0.6	No
	I-10 WB Ramps to I-10 EB Ramps	67.0	67.8	68.2	1.2	0.4	No
Sierra Avenue	SR-210 WB Ramps to SR-210 EB Ramps	70.0	70.8	70.9	1.0	0.1	No
	SR-210 EB Ramps to Highland Avenue	70.2	71.3	71.4	1.2	0.1	No
	Highland Avenue to Baseline Avenue	68.5	69.6	69.9	1.4	0.2	No
	Baseline Avenue to Foothill Boulevard	64.8	66.2	66.5	1.8	0.4	No

Table 22: Cumulative Traffic Noise Levels

Roadway Segment		Existing	Horizon Year 2040 Without Project	Horizon Year 2040 With Phases 1&2	Combined Effects	Incremental Effects	Cumulatively Significant Impact?
					Difference In dBA Between Existing and Horizon Year With Phases 1&2	Difference In dBA Between Horizon Year 2040 Without Project and Horizon Year 2040 With Phases 1&2	
	Foothill Boulevard to Arrow Route	62.5	64.2	64.8	2.3	0.6	No
	Arrow Route to Merrill Avenue	62.3	63.9	64.8	2.5	0.9	No
	Merrill Avenue to Randall Avenue	65.2	66.3	66.5	1.3	0.1	No
	Randall Avenue to San Bernardino Avenue	65.4	66.6	67.1	1.7	0.5	No
	San Bernardino Avenue to Valley Boulevard	66.9	67.6	68.0	1.1	0.3	No
	Valley Boulevard to I-10 Ramps	68.0	68.7	68.8	0.8	0.2	No

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

Source: Based on traffic data within the *Speedway Commerce Center II Specific Plan Project Traffic Impact Study*, prepared by Kimley-Horn, January 2022. Refer to Appendix B for traffic noise modeling assumptions and results.

Table 22 shows the volume of traffic generated by the Project would potentially meet the criteria for cumulative noise increases along several road segments. The noise levels along the following roadway segments result in combined effects and incremental effects:

- Randall Avenue from Cherry Avenue to Beech Avenue. Noise levels would be 67.6 dBA CNEL and would exceed the County's 60 dBA CNEL noise standard for residential uses. There are numerous residences located along this segment of Randall Avenue that would be impacted. However, due to jurisdictional and access limitations, safety and maintenance issues, and cost, there are no feasible mitigation measures to reduce cumulative traffic noise impacts along this roadway segment. Impacts would be significant and unavoidable.

- Randall Avenue from Beech Avenue to Citrus Avenue. Noise levels would be 66.6 dBA CNEL and would exceed the County's 60 dBA CNEL noise standard for residential uses. There are numerous residences located along this segment of Randall Avenue that would be impacted. However, due to jurisdictional and access limitations, safety and maintenance issues, and cost, there are no feasible mitigation measures to reduce cumulative traffic noise impacts along this roadway segment. Impacts would be significant and unavoidable.

- Randall Avenue from Citrus Avenue to Sierra Avenue. Noise levels would be 64.6 dBA CNEL and would exceed the County's 60 dBA CNEL noise standard for residential uses. There are numerous residences located along this segment of Randall Avenue that would be impacted. However, due to jurisdictional and access limitations, safety and maintenance issues, and cost, there are no feasible mitigation measures to reduce cumulative traffic noise impacts along this roadway segment. Impacts would be significant and unavoidable.

- San Bernardino Avenue from Etiwanda Avenue to Commerce Drive. Noise levels would be 71.7 dBA CNEL; however, only industrial uses are located along this segment and the County does not employ traffic noise standards for industrial uses. Therefore, although traffic noise is anticipated to substantially increase along this roadway segment under Horizon Year 2040 With Phases 1&2

conditions, traffic noise levels would not exceed any applicable standards. Impacts along this segment would be less than significant.

- San Bernardino Avenue from Commerce Drive to Cherry Avenue. Noise levels would be 74.0 dBA CNEL; however, only industrial uses are located along this segment and the County does not employ traffic noise standards for industrial uses. Therefore, although traffic noise is anticipated to substantially increase along this roadway segment under Horizon Year 2040 With Phases 1&2 conditions, traffic noise levels would not exceed any applicable standards. Impacts along this segment would be less than significant.

- Cherry Avenue from Foothill Boulevard to Arrow Route. Noise levels would be 72.4 dBA CNEL and would exceed the County's 60 dBA CNEL noise standard for residential uses. There are numerous residences located along this segment of Cherry Avenue that would be impacted. However, due to jurisdictional and access limitations, safety and maintenance issues, and cost, there are no feasible mitigation measures to reduce cumulative traffic noise impacts along this roadway segment. Impacts would be significant and unavoidable.

- Cherry Avenue from Arrow Route to Whittram Avenue. Noise levels would be 72.6 dBA CNEL; however, only industrial uses are located along this segment and the County does not employ traffic noise standards for industrial uses. Therefore, although traffic noise is anticipated to substantially increase along this roadway segment under Horizon Year 2040 With Phases 1&2 conditions, traffic noise levels would not exceed any applicable standards. Impacts along this segment would be less than significant.

- Cherry Avenue from Whittram Avenue to Merrill Avenue. Noise levels would be 72.7 dBA CNEL and would exceed the County's 60 dBA CNEL noise standard for residential uses (there is one residence located at the northeast corner of Cherry Avenue and Merrill Avenue, while the remaining land uses consist of industrial and vacant land that do not have mobile traffic noise standards). However, due to jurisdictional and access limitations, safety and maintenance issues, and cost, there are no feasible mitigation measures to reduce cumulative traffic noise impacts along this roadway segment. Impacts would be significant and unavoidable.

- Cherry Avenue from Merrill Avenue to Randall Avenue. Noise levels would be 74.4 dBA CNEL; however, only industrial uses are located along this segment and the County does not employ traffic noise standards for industrial uses. Therefore, although traffic noise is anticipated to substantially increase along this roadway segment under Horizon Year 2040 With Phases 1&2 conditions, traffic noise levels would not exceed any applicable standards. Impacts along this segment would be less than significant.

- Cherry Avenue from Randall Avenue to San Bernardino Avenue. Noise levels would be 74.6 dBA CNEL and would exceed the County's 65 dBA CNEL noise standard for institutional/public uses (there is an Industrial Technical Learning Center [InTech]) to the west of Cherry Avenue along this segment), while the remaining land uses consist of industrial development that do not have mobile traffic noise standards). However, due to jurisdictional and access limitations, safety and maintenance issues, and cost, there are no feasible mitigation measures to reduce cumulative traffic noise impacts along this roadway segment. Impacts would be significant and unavoidable.

- Cherry Avenue from San Bernardino Avenue to Valley Boulevard. Noise levels would be 73.7 dBA CNEL and would exceed the County's 60 dBA CNEL noise standard for residential uses (there are several residences to the east of Cherry Avenue along this segment, while the remaining land uses consist of industrial and commercial development that do not have mobile traffic noise standards). However, due to jurisdictional and access limitations, safety and maintenance issues, and cost, there are no feasible mitigation measures to reduce cumulative traffic noise impacts along this roadway segment. Impacts would be significant and unavoidable.

As discussed above, the Project would result in a cumulatively considerable contribution to a cumulatively significant operational traffic noise impact at several roadway segments in the Project area. There are no feasible mitigation measures to reduce off-site mobile traffic noise impacts. Therefore, a significant and unavoidable impact would occur in this regard.

Cumulative Stationary Noise

Stationary noise sources from the proposed Project would result in an incremental increase in non-transportation noise sources in the Project vicinity. However, as discussed above, operational noise from stationary sources caused by the proposed Project would be less than significant as operational noise would be within the County's standards. As stationary noise sources are generally localized, there is a limited potential for other projects to contribute to cumulative noise impacts in the Project vicinity 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.

Similar to the proposed Project, other planned and approved projects would also be required to mitigate for any potentially significant stationary noise impacts at nearby sensitive receptors, if necessary, and comply with applicable County 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.

Mitigation Measures: There are no feasible mitigation to reduce the cumulative traffic noise impacts identified above.

Level of Significance: Significant and unavoidable impact.

Cumulative Construction and Operational Noise Mitigation & Residual Impacts: Cumulative construction and on-site operational noise impacts would be less than significant and no mitigation is required. However, cumulative off-site traffic noise levels would result in a significant and unavoidable impact. Feasible mitigation measures would include the construction of noise barriers and/or noise abatement design features at the existing sensitive residences. However, the Project applicant (and the future Master Developer/Site Developers) does not have jurisdiction over the local roadways and/or existing residences to properly mitigate cumulative traffic noise impacts at the impacted receivers. No additional feasible mitigation measures are available that can reduce cumulative off-site mobile traffic noise impacts to a less than significant level.

7 REFERENCES

1. California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, 2013.
2. California Department of Transportation, *Traffic Noise Analysis Protocol*, 2011.
3. California Department of Transportation, *Transportation and Construction Vibration Guidance Manual*, 2020.
4. California Department of Transportation, *Transportation Related Earthborne Vibrations*, February 20, 2002.
5. County of San Bernardino, *San Bernardino County, CA Code of Ordinances*, current through Ord. 4424, passed December 14, 2021.
6. County of San Bernardino, *Countywide Policy Plan*, October 2020.
7. Elliott H. Berger, Rick Neitzel, and Cynthia A. Kladden, Noise Navigator Sound Level Database with Over 1700 Measurement Values, June 26, 2015.
8. Federal Highway Administration, *Roadway Construction Noise Model*, 2006.
9. Federal Interagency Committee on Noise, *Federal Agency Review of Selected Airport Noise Analysis Issues*, 1992.
10. Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, 2018.
11. Kariel, H. G., *Noise in Rural Recreational Environments*, Canadian Acoustics 19(5), 3-10, 1991.
12. Kimley-Horn and Associates, *Speedway Commerce Center II Specific Plan*, 2021.
13. Kimley-Horn and Associates, *Speedway Commerce Center II Specific Plan Air Quality Assessment*, 2022.
14. Kimley-Horn and Associates, *Speedway Commerce Center II Specific Plan Project Traffic Impact Study*, December 2021.

Appendix A

Existing Ambient Noise Measurements

Noise Measurement Field Data

Project:	Hillwood Next Gen Speedway Commerce Center	**Job Number:**	95996114
Site No.:	1	**Date:**	12/1/2021
Analyst:	Jackie Tran and Serena Lin	**Time:**	9:08 - 9:18 AM
Location:	Along Arrow Route, near Gallup Court		
Noise Sources:	Cars, construction, large trucks		

Results (dBA):

Leq:	Lmin:	Lmax:	Peak:
73.4	53.4	86.9	104.5

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

Weather	
Temp. (degrees F):	73
Wind (mph):	< 5
Sky:	Clear
Bar. Pressure:	30.10 inHg
Humidity:	19%

Photo:

Kimley»Horn

Measurement Report

Report Summary

Meter's File Name	CMW3.008.s	Computer's File Name	LxTse_0005586-20211201 090858-CMW3.008.ldbin
Meter	LxT SE 0005586		
Firmware	2.404		
User		Location	
Job Description			
Note			
Start Time	2021-12-01 09:08:58	Duration	0:10:00.0
End Time	2021-12-01 09:18:58	Run Time	0:10:00.0
Pause Time	0:00:00.0		

Results

Overall Metrics

LA_{eq}	73.4 dB		
LAE	101.2 dB	SEA	--- dB
EA	1.5 mPa²h		
LA_{peak}	104.5 dB	2021-12-01 09:18:00	
LAS_{max}	86.9 dB	2021-12-01 09:18:00	
LAS_{min}	53.4 dB	2021-12-01 09:18:44	
LA_{eq}	73.4 dB		
LC_{eq}	79.5 dB	LC_{eq} - LA_{eq}	6.0 dB
LAI_{eq}	76.1 dB	LAI_{eq} - LA_{eq}	2.6 dB

Exceedances

	Count	Duration
LAS > 85.0 dB	1	0:00:02.4
LAS > 115.0 dB	0	0:00:00.0
LApeak > 135.0 dB	0	0:00:00.0
LApeak > 137.0 dB	0	0:00:00.0
LApeak > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight
73.4 dB	73.4 dB	0.0 dB

LDEN	LDay	LEve	LNight
73.4 dB	73.4 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	73.4 dB		79.5 dB		--- dB	
$Ls_{(max)}$	86.9 dB	2021-12-01 09:18:00	--- dB		--- dB	
$LS_{(min)}$	53.4 dB	2021-12-01 09:18:44	--- dB		--- dB	
$L_{Peak(max)}$	104.5 dB	2021-12-01 09:18:00	--- dB		--- dB	

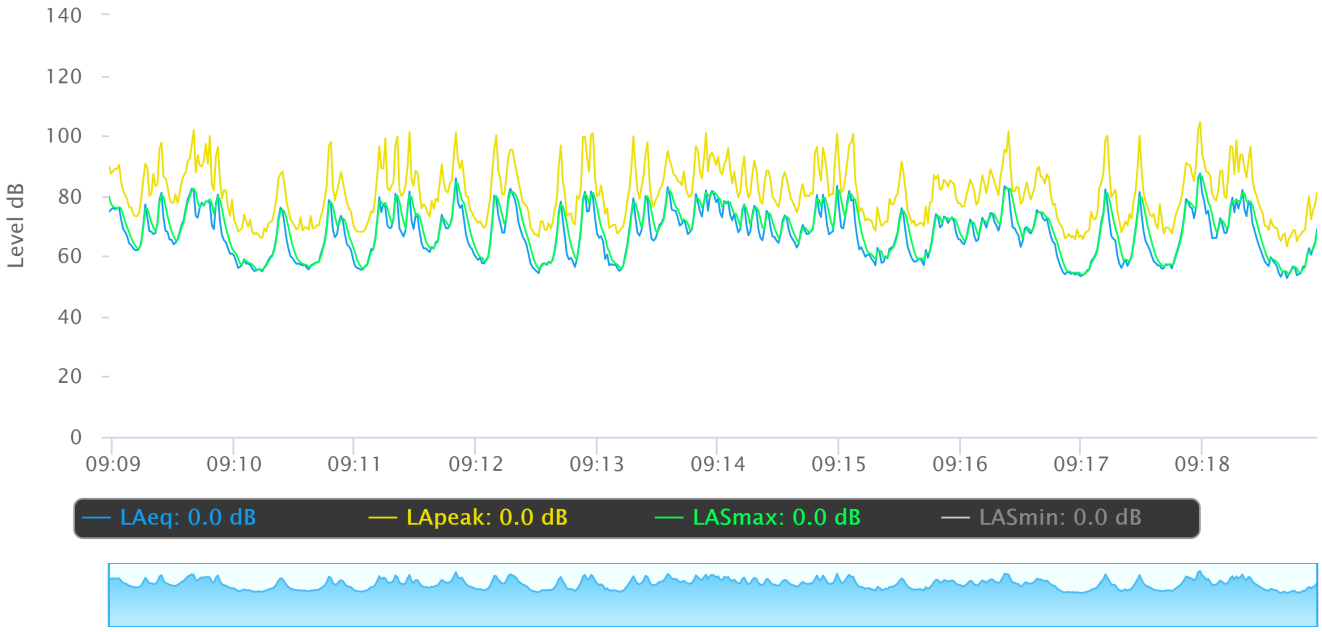
Overloads

Count	Duration	OBA Count	OBA Duration
0	0:00:00.0	0	0:00:00.0

Statistics

LAS 5.0	79.6 dB
LAS 10.0	77.9 dB
LAS 33.3	72.3 dB
LAS 50.0	68.9 dB
LAS 66.6	64.0 dB
LAS 90.0	57.0 dB

Time History



Noise Measurement Field Data

Project:	Hillwood Next Gen Speedway Commerce Center	**Job Number:**	95996114
Site No.:	2	**Date:**	12/1/2021
Analyst:	Jackie Tran and Serena Lin	**Time:**	9:28 - 9:38 AM
Location:	Calabash Avenue/near Whittram		
Noise Sources:	Birds, dogs, construction, residents, large trucks		

Results (dBA):

Leq:	Lmin:	Lmax:	Peak:
60.4	45.4	82.0	95.8

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

Weather	
Temp. (degrees F):	76
Wind (mph):	< 5
Sky:	Clear
Bar. Pressure:	30.09 inHg
Humidity:	18%

Photo:

Kimley»Horn

Measurement Report

Report Summary

Meter's File Name	CMW3.009.s	Computer's File Name	LxTse_0005586-20211201 092809-CMW3.009.ldbin
Meter	LxT SE 0005586		
Firmware	2.404		
User		Location	
Job Description			
Note			
Start Time	2021-12-01 09:28:09	Duration	0:10:00.0
End Time	2021-12-01 09:38:09	Run Time	0:10:00.0
Pause Time	0:00:00.0		

Results

Overall Metrics

LA_{eq}	60.4 dB		
LAE	88.1 dB	SEA	--- dB
EA	72.5 µPa²h		
LA_{peak}	95.8 dB	2021-12-01 09:32:50	
LAS_{max}	82.0 dB	2021-12-01 09:32:51	
LAS_{min}	45.4 dB	2021-12-01 09:30:51	
LA_{eq}	60.4 dB		
LC_{eq}	69.0 dB	LC_{eq} - LA_{eq}	8.6 dB
LAI_{eq}	63.3 dB	LAI_{eq} - LA_{eq}	3.0 dB

Exceedances

	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LApeak > 135.0 dB	0	0:00:00.0
LApeak > 137.0 dB	0	0:00:00.0
LApeak > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight
60.4 dB	60.4 dB	0.0 dB

LDEN	LDay	LEve	LNight
60.4 dB	60.4 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	60.4 dB		69.0 dB		--- dB	
$Ls_{(max)}$	82.0 dB	2021-12-01 09:32:51	--- dB		--- dB	
$LS_{(min)}$	45.4 dB	2021-12-01 09:30:51	--- dB		--- dB	
$L_{Peak(max)}$	95.8 dB	2021-12-01 09:32:50	--- dB		--- dB	

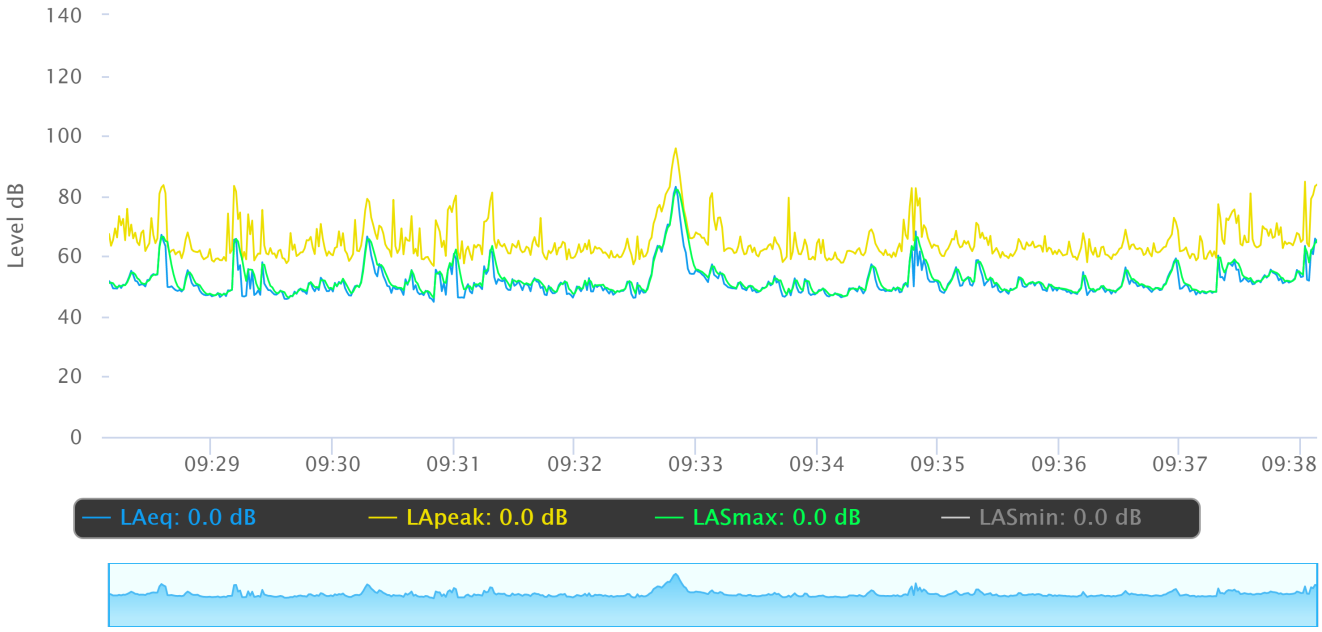
Overloads

Count	Duration	OBA Count	OBA Duration
0	0:00:00.0	0	0:00:00.0

Statistics

LAS 5.0	61.9 dB
LAS 10.0	57.0 dB
LAS 33.3	51.7 dB
LAS 50.0	50.3 dB
LAS 66.6	49.1 dB
LAS 90.0	47.9 dB

Time History



Noise Measurement Field Data

Project:	Hillwood Next Gen Speedway Commerce Center	**Job Number:**	95996114
Site No.:	3	**Date:**	12/1/2021
Analyst:	Jackie Tran and Serena Lin	**Time:**	9:45 - 9:55 PM
Location:	Intersection of Arrow Route and Almond Avenue		
Noise Sources:	Cars, dog, motorcycles/trucks		

Results (dBA):

Leq:	Lmin:	Lmax:	Peak:
73.4	53.9	94.5	111.5

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

Weather	
Temp. (degrees F):	79
Wind (mph):	< 5
Sky:	Clear
Bar. Pressure:	30.09 inHg
Humidity:	15%

Photo:

Kimley»Horn

Measurement Report

Report Summary

Meter's File Name	CMW3.010.s	Computer's File Name	LxTse_0005586-20211201 094506-CMW3.010.ldbin
Meter	LxT SE 0005586		
Firmware	2.404		
User		Location	
Job Description			
Note			
Start Time	2021-12-01 09:45:06	Duration	0:10:00.0
End Time	2021-12-01 09:55:06	Run Time	0:10:00.0
Pause Time	0:00:00.0		

Results

Overall Metrics

LA_{eq}	73.4 dB		
LAE	101.2 dB	SEA	--- dB
EA	1.5 mPa²h		
LA_{peak}	111.5 dB	2021-12-01 09:51:04	
LAS_{max}	94.5 dB	2021-12-01 09:51:04	
LAS_{min}	53.9 dB	2021-12-01 09:49:24	
LA_{eq}	73.4 dB		
LC_{eq}	78.7 dB	LC_{eq} - LA_{eq}	5.3 dB
LAI_{eq}	78.4 dB	LAI_{eq} - LA_{eq}	5.0 dB

Exceedances

	Count	Duration
LAS > 85.0 dB	1	0:00:03.3
LAS > 115.0 dB	0	0:00:00.0
LApeak > 135.0 dB	0	0:00:00.0
LApeak > 137.0 dB	0	0:00:00.0
LApeak > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight
73.4 dB	73.4 dB	0.0 dB

LDEN	LDay	LEve	LNight
73.4 dB	73.4 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	73.4 dB		78.7 dB		--- dB	
$Ls_{(max)}$	94.5 dB	2021-12-01 09:51:04	--- dB		--- dB	
$LS_{(min)}$	53.9 dB	2021-12-01 09:49:24	--- dB		--- dB	
$L_{Peak(max)}$	111.5 dB	2021-12-01 09:51:04	--- dB		--- dB	

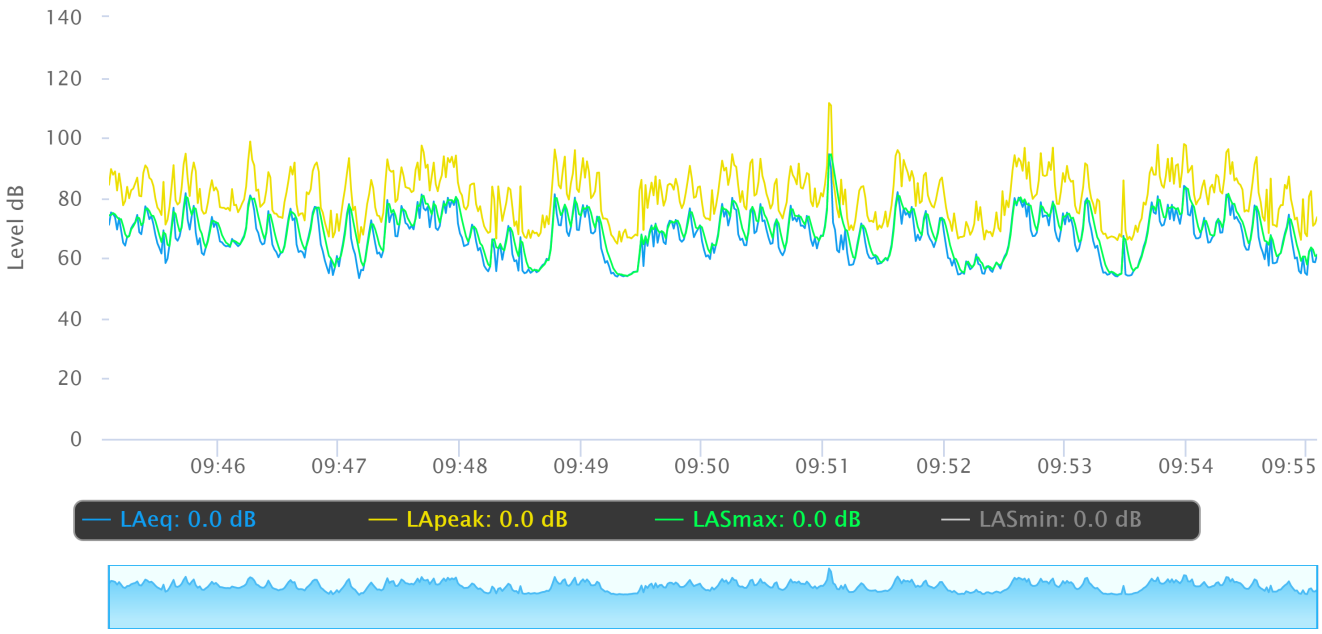
Overloads

Count	Duration	OBA Count	OBA Duration
0	0:00:00.0	0	0:00:00.0

Statistics

LAS 5.0	78.0 dB
LAS 10.0	76.4 dB
LAS 33.3	71.8 dB
LAS 50.0	68.6 dB
LAS 66.6	65.1 dB
LAS 90.0	57.4 dB

Time History



Noise Measurement Field Data

Project:	Hillwood Next Gen Speedway Commerce Center	**Job Number:**	95996114
Site No.:	4	**Date:**	12/1/2021
Analyst:	Jackie Tran and Serena Lin	**Time:**	10:06 - 10:17 AM
Location:	Eastern side of Redwood Avenue		
Noise Sources:	Roosters, cars, dog		

Results (dBA):

Leq:	Lmin:	Lmax:	Peak:
62.4	44.4	79.9	94.5

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

Weather	
Temp. (degrees F):	81
Wind (mph):	< 5
Sky:	Clear
Bar. Pressure:	30.09 inHg
Humidity:	13%

Photo:

Kimley»Horn

Measurement Report

Report Summary

Meter's File Name	CMW3.011.s	Computer's File Name	LxTse_0005586-20211201 100644-CMW3.011.ldbin
Meter	LxT SE 0005586		
Firmware	2.404		
User		Location	
Job Description			
Note			
Start Time	2021-12-01 10:06:44	Duration	0:10:10.6
End Time	2021-12-01 10:17:45	Run Time	0:10:07.0
Pause Time	0:00:03.6		

Results

Overall Metrics

LA_{eq}	62.4 dB		
LAE	90.3 dB	SEA	--- dB
EA	118.4 µPa²h		
LA_{peak}	94.5 dB	2021-12-01 10:07:39	
LAS_{max}	79.9 dB	2021-12-01 10:07:39	
LAS_{min}	44.4 dB	2021-12-01 10:12:55	
LA_{eq}	62.4 dB		
LC_{eq}	69.4 dB	LC_{eq} - LA_{eq}	7.0 dB
LAI_{eq}	65.3 dB	LAI_{eq} - LA_{eq}	2.8 dB

Exceedances

	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LApeak > 135.0 dB	0	0:00:00.0
LApeak > 137.0 dB	0	0:00:00.0
LApeak > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight
62.4 dB	62.4 dB	0.0 dB

LDEN	LDay	LEve	LNight
62.4 dB	62.4 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	62.4 dB		69.4 dB		--- dB	
$Ls_{(max)}$	79.9 dB	2021-12-01 10:07:39	--- dB		--- dB	
$LS_{(min)}$	44.4 dB	2021-12-01 10:12:55	--- dB		--- dB	
$L_{Peak(max)}$	94.5 dB	2021-12-01 10:07:39	--- dB		--- dB	

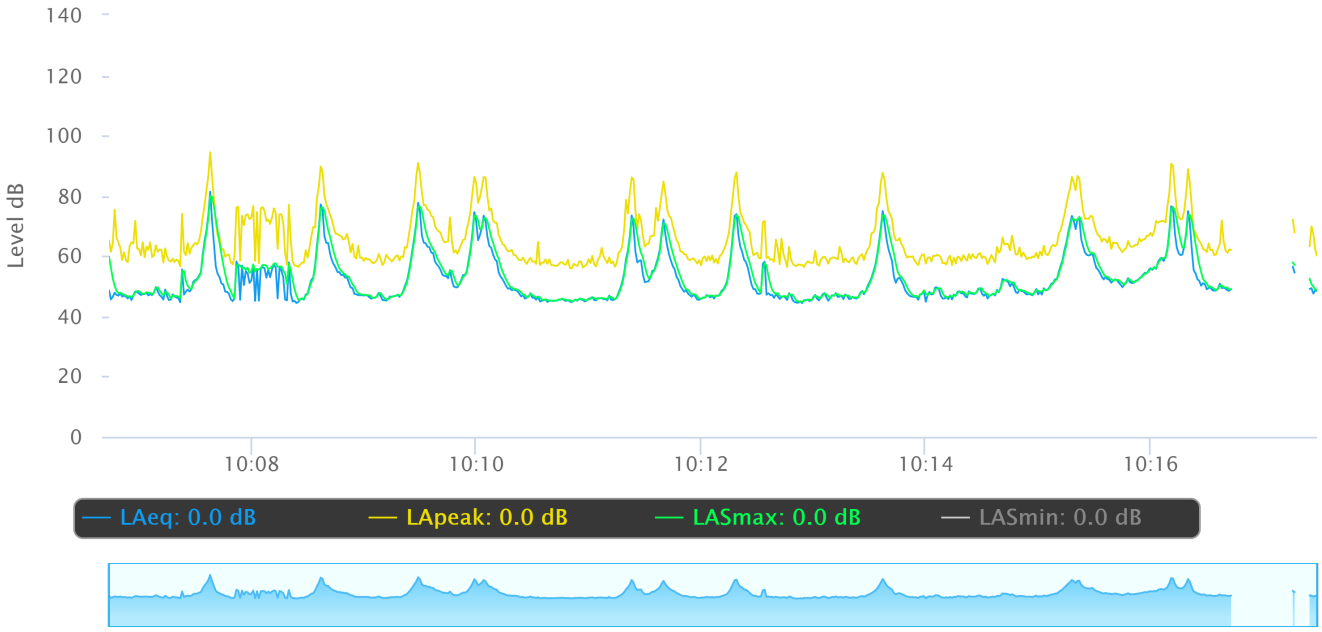
Overloads

Count	Duration	OBA Count	OBA Duration
0	0:00:00.0	0	0:00:00.0

Statistics

LAS 5.0	70.4 dB
LAS 10.0	65.7 dB
LAS 33.3	53.5 dB
LAS 50.0	49.7 dB
LAS 66.6	47.5 dB
LAS 90.0	45.8 dB

Time History



Noise Measurement Field Data

Project:	Hillwood Next Gen Speedway Commerce Center	**Job Number:**	95996114
Site No.:	5	**Date:**	12/1/2021
Analyst:	Jackie Tran and Serena Lin	**Time:**	10:24 - 10:34 AM
Location:	Live Oak Avenue and Manzanita Drive		
Noise Sources:	Cars, school		

Results (dBA):

Leq:	Lmin:	Lmax:	Peak:
61.9	45.1	74.5	90.5

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

Weather	
Temp. (degrees F):	82
Wind (mph):	< 5
Sky:	Clear
Bar. Pressure:	30.08
Humidity:	12%

Photo:

Kimley»Horn

Measurement Report

Report Summary

Meter's File Name	CMW3.012.s	Computer's File Name	LxTse_0005586-20211201 102432-CMW3.012.ldbin
Meter	LxT SE 0005586		
Firmware	2.404		
User		Location	
Job Description			
Note			
Start Time	2021-12-01 10:24:32	Duration	0:10:00.0
End Time	2021-12-01 10:34:32	Run Time	0:10:00.0
Pause Time	0:00:00.0		

Results

Overall Metrics

LA_{eq}	61.9 dB		
LAE	89.7 dB	SEA	--- dB
EA	104.1 µPa²h		
LA_{peak}	90.5 dB	2021-12-01 10:25:51	
LAS_{max}	74.5 dB	2021-12-01 10:29:25	
LAS_{min}	45.1 dB	2021-12-01 10:28:23	
LA_{eq}	61.9 dB		
LC_{eq}	67.9 dB	LC_{eq} - LA_{eq}	5.9 dB
LAI_{eq}	63.5 dB	LAI_{eq} - LA_{eq}	1.5 dB

Exceedances

	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LApeak > 135.0 dB	0	0:00:00.0
LApeak > 137.0 dB	0	0:00:00.0
LApeak > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight
61.9 dB	61.9 dB	0.0 dB

LDEN	LDay	LEve	LNight
61.9 dB	61.9 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	61.9 dB		67.9 dB		--- dB	
$Ls_{(max)}$	74.5 dB	2021-12-01 10:29:25	--- dB		--- dB	
$LS_{(min)}$	45.1 dB	2021-12-01 10:28:23	--- dB		--- dB	
$L_{Peak(max)}$	90.5 dB	2021-12-01 10:25:51	--- dB		--- dB	

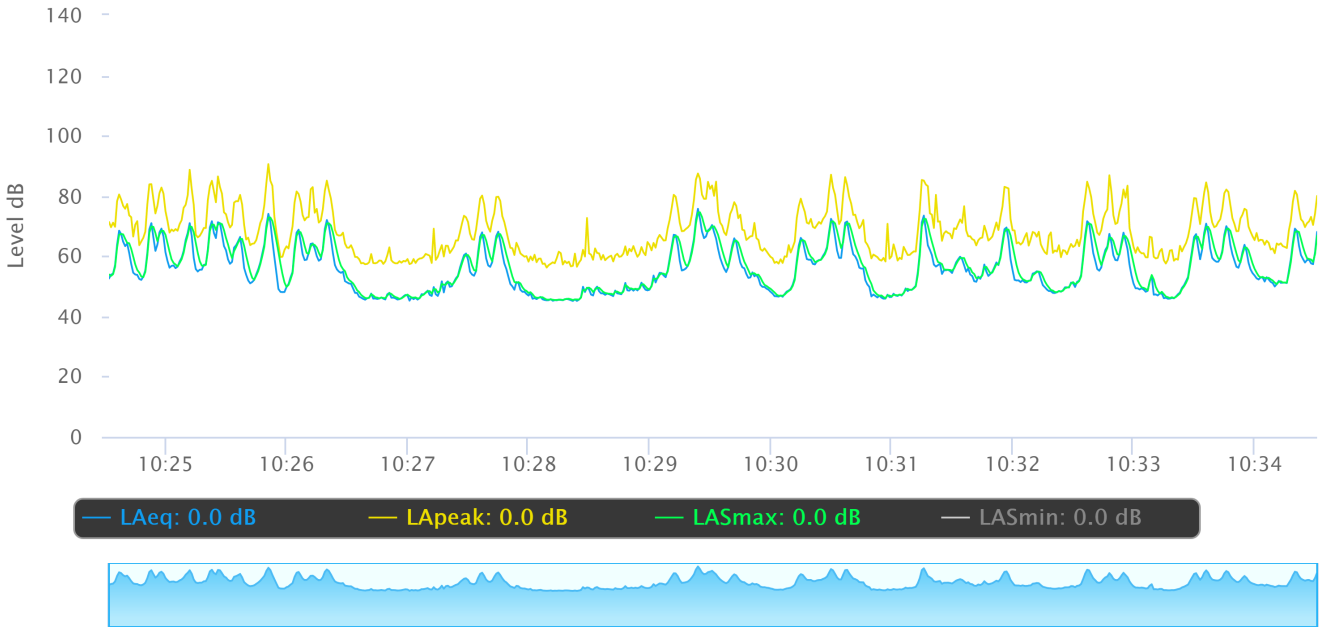
Overloads

Count	Duration	OBA Count	OBA Duration
0	0:00:00.0	0	0:00:00.0

Statistics

LAS 5.0	68.8 dB
LAS 10.0	66.8 dB
LAS 33.3	59.4 dB
LAS 50.0	55.1 dB
LAS 66.6	50.9 dB
LAS 90.0	46.6 dB

Time History



Noise Measurement Field Data

Project:	Hillwood Next Gen Speedway Commerce Center	**Job Number:**	95996114
Site No.:	6	**Date:**	12/1/2021
Analyst:	Jackie Tran and Serena Lin	**Time:**	10:46 - 10:56 AM
Location:	Northern side of El Molino Street		
Noise Sources:	Heavy trucks, cars, warehouse workers		

Results (dBA):

Leq:	Lmin:	Lmax:	Peak:
60.1	53.9	80.3	94.1

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

Weather	
Temp. (degrees F):	83
Wind (mph):	< 5
Sky:	Clear
Bar. Pressure:	30.07
Humidity:	12%

Photo:

Kimley»Horn

Measurement Report

Report Summary

Meter's File Name	CMW3.013.s	Computer's File Name	LxTse_0005586-20211201 104605-CMW3.013.ldbin
Meter	LxT SE 0005586		
Firmware	2.404		
User		Location	
Job Description			
Note			
Start Time	2021-12-01 10:46:05	Duration	0:10:00.0
End Time	2021-12-01 10:56:05	Run Time	0:10:00.0
Pause Time	0:00:00.0		

Results

Overall Metrics

LA_{eq}	60.1 dB		
LAE	87.9 dB	SEA	--- dB
EA	68.0 µPa²h		
LA_{peak}	94.1 dB	2021-12-01 10:47:09	
LAS_{max}	80.3 dB	2021-12-01 10:47:09	
LAS_{min}	53.9 dB	2021-12-01 10:46:19	
LA_{eq}	60.1 dB		
LC_{eq}	70.8 dB	LC_{eq} - LA_{eq}	10.7 dB
LAI_{eq}	64.1 dB	LAI_{eq} - LA_{eq}	4.0 dB

Exceedances

	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LApeak > 135.0 dB	0	0:00:00.0
LApeak > 137.0 dB	0	0:00:00.0
LApeak > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight
60.1 dB	60.1 dB	0.0 dB

LDEN	LDay	LEve	LNight
60.1 dB	60.1 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	60.1 dB		70.8 dB		--- dB	
$Ls_{(max)}$	80.3 dB	2021-12-01 10:47:09	--- dB		--- dB	
$LS_{(min)}$	53.9 dB	2021-12-01 10:46:19	--- dB		--- dB	
$L_{Peak(max)}$	94.1 dB	2021-12-01 10:47:09	--- dB		--- dB	

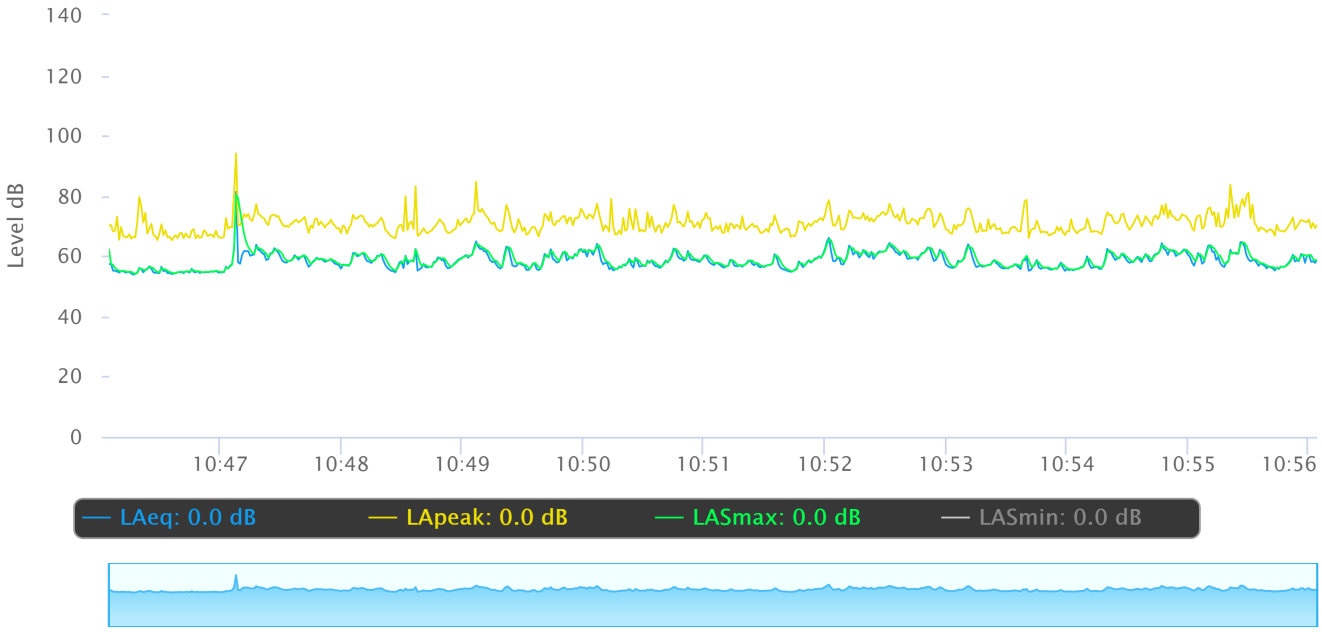
Overloads

Count	Duration	OBA Count	OBA Duration
0	0:00:00.0	0	0:00:00.0

Statistics

LAS 5.0	62.6 dB
LAS 10.0	61.6 dB
LAS 33.3	59.4 dB
LAS 50.0	58.3 dB
LAS 66.6	57.1 dB
LAS 90.0	55.5 dB

Time History



Noise Measurement Field Data

Project:	Hillwood Next Gen Speedway Commerce Center	**Job Number:**	95996114
Site No.:	7	**Date:**	12/1/2021
Analyst:	Jackie Tran and Serena Lin	**Time:**	11:05 - 11:15 AM
Location:	San Bernardino Avenue and Calabash Avenue		
Noise Sources:	Cars, large trucks, workers		

Results (dBA):

Leq:	Lmin:	Lmax:	Peak:
61.5	51.9	73.7	91.5

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

Weather	
Temp. (degrees F):	86
Wind (mph):	< 5
Sky:	Clear
Bar. Pressure:	30.07
Humidity:	9%

Photo:

Kimley»Horn

Measurement Report

Report Summary

Meter's File Name	CMW3.014.s	Computer's File Name	LxTse_0005586-20211201 110530-CMW3.014.ldbin
Meter	LxT SE 0005586		
Firmware	2.404		
User		Location	
Job Description			
Note			
Start Time	2021-12-01 11:05:30	Duration	0:10:00.0
End Time	2021-12-01 11:15:30	Run Time	0:10:00.0
Pause Time	0:00:00.0		

Results

Overall Metrics

LA_{eq}	61.5 dB		
LAE	89.3 dB	SEA	--- dB
EA	95.0 µPa²h		
LA_{peak}	91.5 dB	2021-12-01 11:07:15	
LAS_{max}	73.7 dB	2021-12-01 11:09:33	
LAS_{min}	51.9 dB	2021-12-01 11:12:00	
LA_{eq}	61.5 dB		
LC_{eq}	73.4 dB	LC_{eq} - LA_{eq}	11.8 dB
LAI_{eq}	63.5 dB	LAI_{eq} - LA_{eq}	1.9 dB

Exceedances

	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LApeak > 135.0 dB	0	0:00:00.0
LApeak > 137.0 dB	0	0:00:00.0
LApeak > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight
61.5 dB	61.5 dB	0.0 dB

LDEN	LDay	LEve	LNight
61.5 dB	61.5 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	61.5 dB		73.4 dB		--- dB	
$Ls_{(max)}$	73.7 dB	2021-12-01 11:09:33	--- dB		--- dB	
$LS_{(min)}$	51.9 dB	2021-12-01 11:12:00	--- dB		--- dB	
$L_{Peak(max)}$	91.5 dB	2021-12-01 11:07:15	--- dB		--- dB	

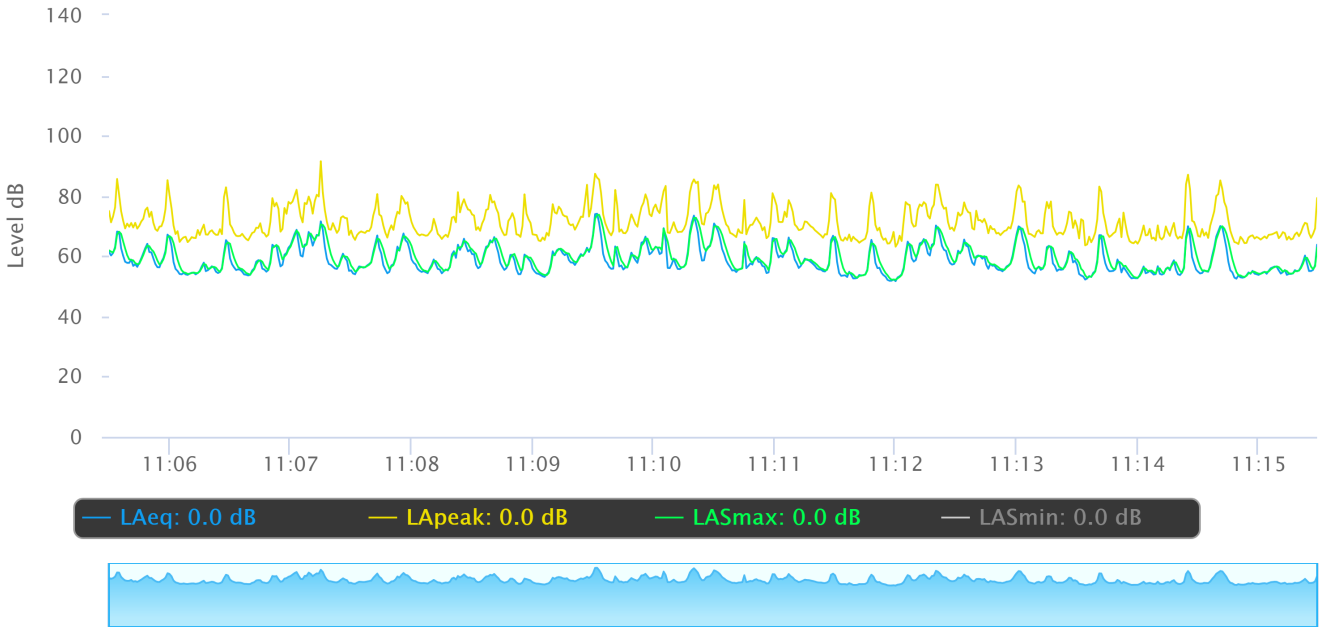
Overloads

Count	Duration	OBA Count	OBA Duration
0	0:00:00.0	0	0:00:00.0

Statistics

LAS 5.0	67.1 dB
LAS 10.0	65.1 dB
LAS 33.3	60.5 dB
LAS 50.0	58.1 dB
LAS 66.6	56.3 dB
LAS 90.0	54.2 dB

Time History



Appendix B

Noise Modeling Data

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

Project Name: Speedway Commerce Center II Specific Plan Project
Project Number: 94914001
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%

#	Roadway	Segment	Lanes	Median Width	ADT Volume	Speed (mph)	Alpha Factor	Vehicle Mix: Medium Trucks	Vehicle Mix: Heavy Trucks	CNEL at 100 Feet	Distance from Centerline of Roadway: Distance to Contour: 70 CNEL	65 CNEL	60 CNEL	55 CNEL
1	Highland Avenue	West of Beech Avenue	4	14	7,100	45	0	2.0%	1.0%	61.7	-	-	150	473
2	Highland Avenue	Beech Avenue to Citrus Avenue	2	10	10,050	45	0	2.0%	1.0%	63.1	-	65	206	652
3	Highland Avenue	Citrus Avenue to Sierra Avenue	4	13	14,370	45	0	2.0%	1.0%	64.8	-	96	302	956
4	Baseline Avenue	Etiwanda Avenue to I-15 SB Ramps	5	13	20,200	50	0	2.0%	1.0%	67.4	-	176	555	1,756
5	Baseline Avenue	I-15 SB Ramps to I-15 NB Ramps	10	10	23,960	50	0	2.0%	1.0%	68.9	-	246	777	2,457
6	Baseline Avenue	I-15 NB Ramps to Cherry Avenue	6	17	23,530	45	0	2.0%	1.0%	67.2	-	164	520	1,645
7	Baseline Avenue	Cherry Avenue to Beech Avenue	6	15	24,070	45	0	2.0%	1.0%	67.2	-	167	530	1,675
8	Baseline Avenue	Beech Avenue to Citrus Avenue	6	14	18,380	45	0	2.0%	1.0%	66.1	-	128	404	1,276
9	Baseline Avenue	Citrus Avenue to Sierra Avenue	6	13	16,120	45	0	2.0%	1.0%	65.5	-	112	353	1,117
10	Foothill Boulevard	I-15 SB Ramps to I-15 NB Ramps	7	12	38,120	50	0	2.0%	1.0%	70.4	110	348	1,100	3,478
11	Foothill Boulevard	I-15 NB Ramps to Etiwanda Avenue	6	24	28,360	50	0	2.0%	1.0%	69.1	82	259	818	2,587
12	Foothill Boulevard	Etiwanda Avenue to Beech Avenue	6	12	21,620	50	0	2.0%	1.0%	67.8	-	192	607	1,919
13	Foothill Boulevard	Cherry Avenue to Beech Avenue	6	12	21,440	50	0	2.0%	1.0%	67.8	-	190	602	1,903
14	Foothill Boulevard	Beech Avenue to Citrus Avenue	4	0	22,540	45	0	2.0%	1.0%	66.7	47	148	467	1,478
15	Foothill Boulevard	Citrus Avenue to Sierra Avenue	4	11	19,880	45	0	2.0%	1.0%	66.2	-	132	417	1,319
16	Arrow Route	Milliken Avenue to Etiwanda Avenue	4	11	19,980	50	0	2.0%	1.0%	67.3	54	170	538	1,702
17	Arrow Route	Etiwanda Avenue to Cherry Avenue	2	0	14,740	45	0	2.0%	1.0%	64.8	-	95	301	952
18	Arrow Route	Cherry Avenue to Beech Avenue	2	0	15,380	45	0	2.0%	1.0%	65.0	-	99	314	994
19	Arrow Route	Beech Avenue to Citrus Avenue	2	0	13,760	45	0	2.0%	1.0%	64.5	-	89	281	889
20	Arrow Route	Citrus Avenue to Sierra Avenue	4	10	13,950	35	0	2.0%	1.0%	62.2	-	53	166	526
21	Merrill Avenue	Cherry Avenue to Beech Avenue	2	0	6,610	40	0	2.0%	1.0%	60.1	-	33	103	326
22	Merrill Avenue	Beech Avenue to Citrus Avenue	2	0	7,730	40	0	2.0%	1.0%	60.8	-	38	121	381
23	Merrill Avenue	Citrus Avenue to Sierra Avenue	4	0	10,520	40	0	2.0%	1.0%	62.2	-	53	166	526
24	Randall Avenue	Cherry Avenue to Beech Avenue	2	0	5,680	40	0	2.0%	1.0%	59.5	-	-	89	280
25	Randall Avenue	Beech Avenue to Citrus Avenue	2	0	4,260	40	0	2.0%	1.0%	58.2	-	-	66	210
26	Randall Avenue	Citrus Avenue to Sierra Avenue	4	0	6,540	40	0	2.0%	1.0%	60.1	-	-	103	327
27	Fourth Street / San Bernardino Avenue	I-15 SB Ramps to I-15 NB Ramps	9	0	23,700	55	0	6.0%	5.0%	72.3	171	540	1,706	5,396
28	Fourth Street / San Bernardino Avenue	I-15 NB Ramps to Etiwanda Avenue	4	15	15,160	50	0	6.0%	5.0%	69.2	83	261	827	2,615
29	Fourth Street / San Bernardino Avenue	Etiwanda Avenue to Commerce Drive	4	16	10,580	55	0	6.0%	5.0%	68.4	69	219	692	2,188
30	Fourth Street / San Bernardino Avenue	Commerce Drive to Cherry Avenue	4	22	16,810	55	0	6.0%	5.0%	70.5	111	351	1,109	3,508
31	Fourth Street / San Bernardino Avenue	Cherry Avenue to Beech Avenue	2	13	11,030	40	0	6.0%	5.0%	66.0	40	125	396	1,251
32	Fourth Street / San Bernardino Avenue	Beech Avenue to Citrus Avenue	4	0	8,630	40	0	6.0%	5.0%	64.9	-	99	312	987
33	Fourth Street / San Bernardino Avenue	Citrus Avenue to Sierra Avenue	4	0	10,700	40	0	6.0%	5.0%	65.9	-	122	387	1,224
34	Valley Boulevard	Commerce Drive / I-10 Ramps to Cherry Avenue	4	12	19,260	45	0	6.0%	10.0%	70.9	123	388	1,227	3,880
35	Valley Boulevard	Cherry Avenue to Beech Avenue	4	12	17,240	45	0	6.0%	10.0%	70.4	110	347	1,098	3,473
36	Etiwanda Avenue	Baseline Avenue to Foothill Boulevard	4	10	10,290	45	0	6.0%	5.0%	66.6	-	146	461	1,457
37	Etiwanda Avenue	Foothill Boulevard to Arrow Route	4	0	13,920	50	0	6.0%	5.0%	68.7	75	236	746	2,360
38	Etiwanda Avenue	Arrow Route to San Bernardino Avenue / Fourth Street	2	13	15,770	55	0	6.0%	5.0%	70.0	100	317	1,004	3,174

#	Roadway	Segment	Lanes	Median Width	ADT Volume	Speed (mph)	Alpha Factor	Vehicle Mix: Medium Trucks	Vehicle Mix: Heavy Trucks	CNEL at 100 Feet	Distance from Centerline of Roadway: Distance to Contour: 70 CNEL	65 CNEL	60 CNEL	55 CNEL
39	Etiwanda Avenue	San Bernardino Avenue / Fourth Street to Valley Boulevard	4	20	17,010	50	0	6.0%	5.0%	69.7	93	296	935	2,955
40	Etiwanda Avenue	Valley Boulevard to I-10 WB Ramps	7	10	22,920	50	0	6.0%	5.0%	71.2	133	419	1,325	4,191
41	Etiwanda Avenue	I-10 WB Ramps to I-10 EB Ramps	6	5	23,800	50	0	6.0%	5.0%	71.2	133	420	1,327	4,197
42	Cherry Avenue	SR-210 WB Ramps to SR-210 EB Ramps	8	24	15,450	45	0	6.0%	5.0%	69.0	80	253	800	2,530
43	Cherry Avenue	SR-210 EB Ramps to Baseline Avenue	4	11	19,040	45	0	6.0%	5.0%	69.3	85	270	854	2,700
44	Cherry Avenue	Baseline Avenue to Foothill Boulevard	6	18	21,090	45	0	6.0%	5.0%	70.0	100	316	998	3,157
45	Cherry Avenue	Foothill Boulevard to Arrow Route	6	16	19,940	40	0	6.0%	5.0%	68.8	77	243	767	2,426
46	Cherry Avenue	Arrow Route to Whittram Avenue	6	16	21,800	40	0	6.0%	5.0%	69.2	84	265	839	2,652
47	Cherry Avenue	Whittram Avenue to Merrill Avenue	4	0	24,510	40	0	6.0%	5.0%	69.5	89	280	887	2,804
48	Cherry Avenue	Merrill Avenue to Randall Avenue	6	5	23,490	50	0	6.0%	5.0%	71.2	131	414	1,310	4,143
49	Cherry Avenue	Randall Avenue to San Bernardino Avenue	6	18	23,890	50	0	6.0%	5.0%	71.4	137	433	1,368	4,327
50	Cherry Avenue	San Bernardino Avenue to Valley Boulevard	6	0	20,230	50	0	6.0%	5.0%	70.5	112	354	1,119	3,537
51	Cherry Avenue	Valley Boulevard to I-10 WB Ramps	7	25	30,560	50	0	6.0%	5.0%	72.7	184	583	1,843	5,829
52	Cherry Avenue	I-10 WB Ramps to I-10 EB Ramps	8	5	33,470	50	0	6.0%	5.0%	72.9	197	623	1,971	6,234
53	Cherry Avenue	I-10 EB Ramps to Slover Avenue	8	25	27,850	45	0	6.0%	5.0%	71.6	145	458	1,448	4,579
54	Cherry Avenue	South of Slover Avenue	6	15	18,610	45	0	6.0%	5.0%	69.4	87	277	875	2,767
55	Beech Avenue	Highland Avenue to Baseline Avenue	4	5	10,090	40	0	2.0%	1.0%	62.1	-	51	160	507
56	Beech Avenue	Foothill Boulevard to Arrow Route	2	0	3,760	40	0	2.0%	1.0%	57.7	-	-	59	185
57	Beech Avenue	Arrow Route to Merrill Avenue	2	0	7,810	40	0	2.0%	1.0%	60.9	-	39	122	385
58	Beech Avenue	Merrill Avenue to Randall Avenue	2	0	5,310	40	0	2.0%	1.0%	59.2	-	-	83	262
59	Beech Avenue	Randall Avenue to San Bernardino Avenue	2	0	4,230	40	0	2.0%	1.0%	58.2	-	-	66	209
60	Beech Avenue	San Bernardino to Valley Boulevard	2	0	3,170	40	0	2.0%	1.0%	56.9	-	-	49	156
61	Citrus Avenue	SR-210 WB Ramps to SR-210 EB Ramps	8	43	24,020	55	0	2.0%	1.0%	70.1	103	325	1,026	3,246
62	Citrus Avenue	SR-210 EB Ramps to Baseline Avenue	4	14	23,070	40	0	2.0%	1.0%	65.7	-	117	371	1,173
63	Citrus Avenue	Baseline Avenue to Foothill Boulevard	4	0	17,450	40	0	2.0%	1.0%	64.4	-	87	276	873
64	Citrus Avenue	Foothill Boulevard to Arrow Route	4	0	19,000	40	0	2.0%	1.0%	64.8	-	95	301	951
65	Citrus Avenue	Arrow Route to Merrill Avenue	4	12	21,700	35	0	2.0%	1.0%	64.1	-	82	259	820
66	Citrus Avenue	Merrill Avenue to Randall Avenue	4	0	17,620	35	0	2.0%	1.0%	63.2	-	66	208	657
67	Citrus Avenue	Randall Avenue to San Bernardino Avenue	4	0	16,910	40	0	2.0%	1.0%	64.3	-	85	268	846
68	Citrus Avenue	San Bernardino Avenue to Valley Boulevard	4	0	18,590	45	0	2.0%	1.0%	65.9	-	122	385	1,219
69	Citrus Avenue	Valley Boulevard to I-10 WB Ramps	6	15	27,620	45	0	2.0%	1.0%	67.8	-	192	608	1,922
70	Citrus Avenue	I-10 WB Ramps to I-10 EB Ramps	7	0	23,150	45	0	2.0%	1.0%	67.0	-	160	506	1,601
71	Sierra Avenue	SR-210 WB Ramps to SR-210 EB Ramps	6	20	27,580	55	0	2.0%	1.0%	70.0	99	314	993	3,141
72	Sierra Avenue	SR-210 EB Ramps to Highland Avenue	6	24	36,110	50	0	2.0%	1.0%	70.2	104	329	1,042	3,294
73	Sierra Avenue	Highland Avenue to Baseline Avenue	6	15	24,910	50	0	2.0%	1.0%	68.5	70	222	703	2,225
74	Sierra Avenue	Baseline Avenue to Foothill Boulevard	4	0	18,930	40	0	2.0%	1.0%	64.8	-	95	300	947
75	Sierra Avenue	Foothill Boulevard to Arrow Route	4	10	18,380	30	0	2.0%	1.0%	62.5	-	57	179	567
76	Sierra Avenue	Arrow Route to Merrill Avenue	4	10	17,470	30	0	2.0%	1.0%	62.3	-	54	170	539
77	Sierra Avenue	Merrill Avenue to Randall Avenue	4	13	20,390	40	0	2.0%	1.0%	65.2	-	104	327	1,035
78	Sierra Avenue	Randall Avenue to San Bernardino Avenue	4	13	21,450	40	0	2.0%	1.0%	65.4	-	109	344	1,089
79	Sierra Avenue	San Bernardino Avenue to Valley Boulevard	6	12	29,530	40	0	2.0%	1.0%	66.9	-	156	493	1,558
80	Sierra Avenue	Valley Boulevard to I-10 Ramps	9	4	47,340	35	0	2.0%	1.0%	68.0	-	200	634	2,005

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

Project Name: Speedway Commerce Center II Specific Plan Project
Project Number: 94914001
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	Highland Avenue	West of Beech Avenue	4	14	7,526	45	0	2.0%	1.0%	62.0	-	-	159	501
2	Highland Avenue	Beech Avenue to Citrus Avenue	2	10	10,653	45	0	2.0%	1.0%	63.4	-	69	219	691
3	Highland Avenue	Citrus Avenue to Sierra Avenue	4	13	15,232	45	0	2.0%	1.0%	65.1	-	101	320	1,013
4	Baseline Avenue	Etiwanda Avenue to I-15 SB Ramps	5	13	21,412	50	0	2.0%	1.0%	67.7	59	186	589	1,861
5	Baseline Avenue	I-15 SB Ramps to I-15 NB Ramps	10	10	25,398	50	0	2.0%	1.0%	69.2	-	260	824	2,605
6	Baseline Avenue	I-15 NB Ramps to Cherry Avenue	6	17	24,942	45	0	2.0%	1.0%	67.4	-	174	551	1,743
7	Baseline Avenue	Cherry Avenue to Beech Avenue	6	15	26,534	45	0	2.0%	1.0%	67.7	-	185	584	1,846
8	Baseline Avenue	Beech Avenue to Citrus Avenue	6	14	20,353	45	0	2.0%	1.0%	66.5	-	141	447	1,413
9	Baseline Avenue	Citrus Avenue to Sierra Avenue	6	13	17,597	45	0	2.0%	1.0%	65.9	-	122	386	1,219
10	Foothill Boulevard	I-15 SB Ramps to I-15 NB Ramps	7	12	41,147	50	0	2.0%	1.0%	70.7	119	375	1,187	3,754
11	Foothill Boulevard	I-15 NB Ramps to Etiwanda Avenue	6	24	31,152	50	0	2.0%	1.0%	69.5	90	284	899	2,842
12	Foothill Boulevard	Etiwanda Avenue to Beech Avenue	6	12	22,927	50	0	2.0%	1.0%	68.1	64	203	643	2,035
13	Foothill Boulevard	Cherry Avenue to Beech Avenue	6	12	23,346	50	0	2.0%	1.0%	68.2	66	207	655	2,072
14	Foothill Boulevard	Beech Avenue to Citrus Avenue	4	0	24,532	45	0	2.0%	1.0%	67.1	51	161	509	1,609
15	Foothill Boulevard	Citrus Avenue to Sierra Avenue	4	11	21,563	45	0	2.0%	1.0%	66.6	-	143	452	1,431
16	Arrow Route	Milliken Avenue to Etiwanda Avenue	4	11	21,569	50	0	2.0%	1.0%	67.6	58	184	581	1,837
17	Arrow Route	Eitwanda Avenue to Cherry Avenue	2	0	15,624	45	0	2.0%	1.0%	65.0	-	101	319	1,010
18	Arrow Route	Cherry Avenue to Beech Avenue	2	0	16,783	45	0	2.0%	1.0%	65.4	34	108	343	1,084
19	Arrow Route	Beech Avenue to Citrus Avenue	2	0	15,116	45	0	2.0%	1.0%	64.9	-	98	309	977
20	Arrow Route	Citrus Avenue to Sierra Avenue	4	10	15,107	35	0	2.0%	1.0%	62.6	-	57	180	569
21	Merrill Avenue	Cherry Avenue to Beech Avenue	2	0	7,277	40	0	2.0%	1.0%	60.5	-	36	113	359
22	Merrill Avenue	Beech Avenue to Citrus Avenue	2	0	8,464	40	0	2.0%	1.0%	61.2	-	42	132	417
23	Merrill Avenue	Citrus Avenue to Sierra Avenue	4	0	11,631	40	0	2.0%	1.0%	62.6	-	58	184	582
24	Randall Avenue	Cherry Avenue to Beech Avenue	2	0	9,261	40	0	2.0%	1.0%	61.6	-	46	144	457
25	Randall Avenue	Beech Avenue to Citrus Avenue	2	0	7,306	40	0	2.0%	1.0%	60.6	-	36	114	360
26	Randall Avenue	Citrus Avenue to Sierra Avenue	4	0	8,162	40	0	2.0%	1.0%	61.1	-	-	129	408
27	Fourth Street / San Bernardino Avenue	I-15 SB Ramps to I-15 NB Ramps	9	0	25,762	55	0	6.0%	5.0%	72.7	185	587	1,855	5,866
28	Fourth Street / San Bernardino Avenue	I-15 NB Ramps to Etiwanda Avenue	4	15	17,220	50	0	6.0%	5.0%	69.7	94	297	939	2,970
29	Fourth Street / San Bernardino Avenue	Etiwanda Avenue to Commerce Drive	4	16	12,495	55	0	6.0%	5.0%	69.1	82	258	817	2,584
30	Fourth Street / San Bernardino Avenue	Commerce Drive to Cherry Avenue	4	22	20,259	55	0	6.0%	5.0%	71.3	134	423	1,337	4,228
31	Fourth Street / San Bernardino Avenue	Cherry Avenue to Beech Avenue	2	13	11,972	40	0	6.0%	5.0%	66.3	43	136	429	1,358
32	Fourth Street / San Bernardino Avenue	Beech Avenue to Citrus Avenue	4	0	9,308	40	0	6.0%	5.0%	65.3	-	106	337	1,065
33	Fourth Street / San Bernardino Avenue	Citrus Avenue to Sierra Avenue	4	0	11,572	40	0	6.0%	5.0%	66.2	-	132	419	1,324
34	Valley Boulevard	Commerce Drive / I-10 Ramps to Cherry Avenue	4	12	20,416	45	0	6.0%	10.0%	71.1	130	411	1,301	4,113
35	Valley Boulevard	Cherry Avenue to Beech Avenue	4	12	18,304	45	0	6.0%	10.0%	70.7	117	369	1,166	3,688
36	Etiwanda Avenue	Baseline Avenue to Foothill Boulevard	4	10	11,177	45	0	6.0%	5.0%	67.0	50	158	501	1,583
37	Etiwanda Avenue	Foothill Boulevard to Arrow Route	4	0	16,125	50	0	6.0%	5.0%	69.4	86	273	865	2,734

#	Roadway	Segment	Lanes	Median Width	ADT Volume	Speed (mph)	Alpha Factor	Vehicle Mix: Medium Trucks	Vehicle Mix: Heavy Trucks	CNEL at 100 Feet	Distance from Centerline of Roadway: Distance to Contour: 70 CNEL	65 CNEL	60 CNEL	55 CNEL
38	Etiwanda Avenue	Arrow Route to San Bernardino Avenue / Fourth Street	2	13	18,476	55	0	6.0%	5.0%	70.7	118	372	1,176	3,719
39	Etiwanda Avenue	San Bernardino Avenue / Fourth Street to Valley Boulevard	4	20	18,301	50	0	6.0%	5.0%	70.0	101	318	1,005	3,179
40	Etiwanda Avenue	Valley Boulevard to I-10 WB Ramps	7	10	24,565	50	0	6.0%	5.0%	71.5	142	449	1,421	4,492
41	Etiwanda Avenue	I-10 WB Ramps to I-10 EB Ramps	6	5	25,438	50	0	6.0%	5.0%	71.5	142	449	1,419	4,486
42	Cherry Avenue	SR-210 WB Ramps to SR-210 EB Ramps	8	24	16,917	45	0	6.0%	5.0%	69.4	88	277	876	2,771
43	Cherry Avenue	SR-210 EB Ramps to Baseline Avenue	4	11	21,102	45	0	6.0%	5.0%	69.8	95	299	946	2,992
44	Cherry Avenue	Baseline Avenue to Foothill Boulevard	6	18	24,435	45	0	6.0%	5.0%	70.6	116	366	1,157	3,658
45	Cherry Avenue	Foothill Boulevard to Arrow Route	6	16	23,826	40	0	6.0%	5.0%	69.6	92	290	917	2,898
46	Cherry Avenue	Arrow Route to Whittram Avenue	6	16	26,278	40	0	6.0%	5.0%	70.0	101	320	1,011	3,197
47	Cherry Avenue	Whittram Avenue to Merrill Avenue	4	0	29,171	40	0	6.0%	5.0%	70.2	106	334	1,055	3,337
48	Cherry Avenue	Merrill Avenue to Randall Avenue	6	5	28,359	50	0	6.0%	5.0%	72.0	158	500	1,582	5,001
49	Cherry Avenue	Randall Avenue to San Bernardino Avenue	6	18	29,323	50	0	6.0%	5.0%	72.3	168	531	1,680	5,311
50	Cherry Avenue	San Bernardino Avenue to Valley Boulevard	6	0	24,334	50	0	6.0%	5.0%	71.3	135	425	1,345	4,255
51	Cherry Avenue	Valley Boulevard to I-10 WB Ramps	7	25	35,254	50	0	6.0%	5.0%	73.3	213	672	2,126	6,724
52	Cherry Avenue	I-10 WB Ramps to I-10 EB Ramps	8	5	37,448	50	0	6.0%	5.0%	73.4	221	698	2,206	6,975
53	Cherry Avenue	I-10 EB Ramps to Slover Avenue	8	25	30,191	45	0	6.0%	5.0%	72.0	157	496	1,570	4,964
54	Cherry Avenue	South of Slover Avenue	6	15	20,267	45	0	6.0%	5.0%	69.8	95	301	953	3,013
55	Beech Avenue	Highland Avenue to Baseline Avenue	4	5	10,695	40	0	2.0%	1.0%	62.3	-	54	170	538
56	Beech Avenue	Foothill Boulevard to Arrow Route	2	0	4,006	40	0	2.0%	1.0%	58.0	-	-	62	198
57	Beech Avenue	Arrow Route to Merrill Avenue	2	0	8,349	40	0	2.0%	1.0%	61.1	-	41	130	412
58	Beech Avenue	Merrill Avenue to Randall Avenue	2	0	5,679	40	0	2.0%	1.0%	59.5	-	-	89	280
59	Beech Avenue	Randall Avenue to San Bernardino Avenue	2	0	4,624	40	0	2.0%	1.0%	58.6	-	-	72	228
60	Beech Avenue	San Bernardino to Valley Boulevard	2	0	3,360	40	0	2.0%	1.0%	57.2	-	-	52	166
61	Citrus Avenue	SR-210 WB Ramps to SR-210 EB Ramps	8	43	25,661	55	0	2.0%	1.0%	70.4	110	347	1,097	3,467
62	Citrus Avenue	SR-210 EB Ramps to Baseline Avenue	4	14	24,724	40	0	2.0%	1.0%	66.0	-	126	397	1,257
63	Citrus Avenue	Baseline Avenue to Foothill Boulevard	4	0	18,547	40	0	2.0%	1.0%	64.7	-	93	293	928
64	Citrus Avenue	Foothill Boulevard to Arrow Route	4	0	20,190	40	0	2.0%	1.0%	65.0	-	101	319	1,010
65	Citrus Avenue	Arrow Route to Merrill Avenue	4	12	23,102	35	0	2.0%	1.0%	64.4	-	87	276	873
66	Citrus Avenue	Merrill Avenue to Randall Avenue	4	0	18,837	35	0	2.0%	1.0%	63.5	-	70	222	702
67	Citrus Avenue	Randall Avenue to San Bernardino Avenue	4	0	19,015	40	0	2.0%	1.0%	64.8	-	95	301	951
68	Citrus Avenue	San Bernardino Avenue to Valley Boulevard	4	0	20,575	45	0	2.0%	1.0%	66.3	-	135	427	1,349
69	Citrus Avenue	Valley Boulevard to I-10 WB Ramps	6	15	30,117	45	0	2.0%	1.0%	68.2	66	210	663	2,096
70	Citrus Avenue	I-10 WB Ramps to I-10 EB Ramps	7	0	25,119	45	0	2.0%	1.0%	67.4	-	174	549	1,737
71	Sierra Avenue	SR-210 WB Ramps to SR-210 EB Ramps	6	20	29,405	55	0	2.0%	1.0%	70.2	106	335	1,059	3,348
72	Sierra Avenue	SR-210 EB Ramps to Highland Avenue	6	24	38,477	50	0	2.0%	1.0%	70.5	111	351	1,110	3,510
73	Sierra Avenue	Highland Avenue to Baseline Avenue	6	15	26,735	50	0	2.0%	1.0%	68.8	76	239	755	2,388
74	Sierra Avenue	Baseline Avenue to Foothill Boulevard	4	0	20,316	40	0	2.0%	1.0%	65.1	-	102	321	1,017
75	Sierra Avenue	Foothill Boulevard to Arrow Route	4	10	19,693	30	0	2.0%	1.0%	62.8	-	61	192	607
76	Sierra Avenue	Arrow Route to Merrill Avenue	4	10	18,908	30	0	2.0%	1.0%	62.7	-	58	184	583
77	Sierra Avenue	Merrill Avenue to Randall Avenue	4	13	21,783	40	0	2.0%	1.0%	65.4	-	111	350	1,106
78	Sierra Avenue	Randall Avenue to San Bernardino Avenue	4	13	23,387	40	0	2.0%	1.0%	65.7	-	119	375	1,187
79	Sierra Avenue	San Bernardino Avenue to Valley Boulevard	6	12	31,772	40	0	2.0%	1.0%	67.2	-	168	530	1,676
80	Sierra Avenue	Valley Boulevard to I-10 Ramps	9	4	50,580	35	0	2.0%	1.0%	68.3	-	214	677	2,142

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

Project Name: Speedway Commerce Center II Specific Plan Project
Project Number: 94914001
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%

#	Roadway	Segment	Lanes	Median Width	ADT Volume	Speed (mph)	Alpha Factor	Vehicle Mix: Medium Trucks	Vehicle Mix: Heavy Trucks	CNEL at 100 Feet	Distance from Centerline of Roadway: Distance to Contour: 70 CNEL	65 CNEL	60 CNEL	55 CNEL
1	Highland Avenue	West of Beech Avenue	4	14	7,526	45	0	2.0%	1.0%	62.0	-	-	159	501
2	Highland Avenue	Beech Avenue to Citrus Avenue	2	10	10,653	45	0	2.0%	1.0%	63.4	-	69	219	691
3	Highland Avenue	Citrus Avenue to Sierra Avenue	4	13	15,232	45	0	2.0%	1.0%	65.1	-	101	320	1,013
4	Baseline Avenue	Etiwanda Avenue to I-15 SB Ramps	5	13	21,442	50	0	2.0%	1.0%	67.7	59	186	589	1,864
5	Baseline Avenue	I-15 SB Ramps to I-15 NB Ramps	10	10	25,618	50	0	2.0%	1.0%	69.2	-	265	838	2,650
6	Baseline Avenue	I-15 NB Ramps to Cherry Avenue	6	17	25,272	45	0	2.1%	1.1%	67.6	-	180	569	1,799
7	Baseline Avenue	Cherry Avenue to Beech Avenue	6	15	28,424	45	0	2.5%	1.6%	68.6	72	227	719	2,275
8	Baseline Avenue	Beech Avenue to Citrus Avenue	6	14	22,003	45	0	2.4%	1.4%	67.3	-	171	539	1,705
9	Baseline Avenue	Citrus Avenue to Sierra Avenue	6	13	18,567	45	0	2.3%	1.4%	66.5	-	141	447	1,413
10	Foothill Boulevard	I-15 SB Ramps to I-15 NB Ramps	7	12	41,727	50	0	2.3%	1.3%	71.1	129	409	1,294	4,092
11	Foothill Boulevard	I-15 NB Ramps to Etiwanda Avenue	6	24	31,732	50	0	2.5%	1.6%	70.2	104	328	1,039	3,285
12	Foothill Boulevard	Etiwanda Avenue to Beech Avenue	6	12	22,927	50	0	2.0%	1.0%	68.1	65	204	645	2,040
13	Foothill Boulevard	Cherry Avenue to Beech Avenue	6	12	24,456	50	0	2.3%	1.3%	68.7	74	233	738	2,334
14	Foothill Boulevard	Beech Avenue to Citrus Avenue	4	0	25,642	45	0	2.4%	1.4%	67.7	59	187	590	1,866
15	Foothill Boulevard	Citrus Avenue to Sierra Avenue	4	11	22,433	45	0	2.2%	1.3%	67.0	50	160	505	1,596
16	Arrow Route	Milliken Avenue to Etiwanda Avenue	4	11	22,289	50	0	2.1%	1.2%	67.9	62	197	622	1,967
17	Arrow Route	Eitwanda Avenue to Cherry Avenue	2	0	16,974	45	0	2.0%	1.0%	65.4	35	110	347	1,097
18	Arrow Route	Cherry Avenue to Beech Avenue	2	0	17,783	45	0	2.3%	1.4%	66.0	40	127	403	1,273
19	Arrow Route	Beech Avenue to Citrus Avenue	2	0	16,176	45	0	2.4%	1.4%	65.7	37	117	371	1,172
20	Arrow Route	Citrus Avenue to Sierra Avenue	4	10	15,747	35	0	2.3%	1.3%	63.2	-	65	207	654
21	Merrill Avenue	Cherry Avenue to Beech Avenue	2	0	7,837	40	0	2.4%	1.4%	61.4	-	44	139	439
22	Merrill Avenue	Beech Avenue to Citrus Avenue	2	0	9,024	40	0	2.4%	1.4%	62.0	-	51	160	505
23	Merrill Avenue	Citrus Avenue to Sierra Avenue	4	0	12,381	40	0	2.7%	1.8%	63.8	-	77	243	767
24	Randall Avenue	Cherry Avenue to Beech Avenue	2	0	12,921	40	0	4.0%	3.3%	65.4	34	109	344	1,087
25	Randall Avenue	Beech Avenue to Citrus Avenue	2	0	10,166	40	0	4.1%	3.4%	64.4	-	87	274	866
26	Randall Avenue	Citrus Avenue to Sierra Avenue	4	0	9,982	40	0	3.2%	2.4%	63.6	-	72	227	717
27	Fourth Street / San Bernardino Avenue	I-15 SB Ramps to I-15 NB Ramps	9	0	26,882	55	0	6.2%	5.2%	73.0	199	628	1,986	6,279
28	Fourth Street / San Bernardino Avenue	I-15 NB Ramps to Etiwanda Avenue	4	15	19,440	50	0	6.5%	5.6%	70.5	113	358	1,132	3,578
29	Fourth Street / San Bernardino Avenue	Etiwanda Avenue to Commerce Drive	4	16	16,755	55	0	6.6%	5.8%	70.7	119	375	1,186	3,749
30	Fourth Street / San Bernardino Avenue	Commerce Drive to Cherry Avenue	4	22	27,169	55	0	6.7%	5.9%	73.0	197	624	1,973	6,240
31	Fourth Street / San Bernardino Avenue	Cherry Avenue to Beech Avenue	2	13	12,722	40	0	6.2%	5.3%	66.8	47	150	474	1,498
32	Fourth Street / San Bernardino Avenue	Beech Avenue to Citrus Avenue	4	0	9,838	40	0	6.2%	5.3%	65.7	-	117	371	1,173
33	Fourth Street / San Bernardino Avenue	Citrus Avenue to Sierra Avenue	4	0	12,122	40	0	6.2%	5.3%	66.6	46	144	455	1,439
34	Valley Boulevard	Commerce Drive / I-10 Ramps to Cherry Avenue	4	12	20,416	45	0	6.0%	10.0%	71.1	130	411	1,301	4,113
35	Valley Boulevard	Cherry Avenue to Beech Avenue	4	12	18,874	45	0	6.1%	10.0%	70.8	121	381	1,206	3,814
36	Etiwanda Avenue	Baseline Avenue to Foothill Boulevard	4	10	11,687	45	0	6.1%	5.2%	67.3	53	169	534	1,690
37	Etiwanda Avenue	Foothill Boulevard to Arrow Route	4	0	17,215	50	0	6.4%	5.6%	69.9	98	311	983	3,108

#	Roadway	Segment	Lanes	Median Width	ADT Volume	Speed (mph)	Alpha Factor	Vehicle Mix: Medium Trucks	Vehicle Mix: Heavy Trucks	Distance from Centerline of Roadway: CNEL at 100 Feet	Distance to Contour: 70 CNEL	65 CNEL	60 CNEL	55 CNEL
38	Etiwanda Avenue	Arrow Route to San Bernardino Avenue / Fourth Street	2	13	19,176	55	0	6.5%	5.6%	71.1	130	412	1,303	4,119
39	Etiwanda Avenue	San Bernardino Avenue / Fourth Street to Valley Boulevard	4	20	19,631	50	0	6.2%	5.2%	70.4	111	350	1,108	3,502
40	Etiwanda Avenue	Valley Boulevard to I-10 WB Ramps	7	10	25,895	50	0	6.1%	5.2%	71.8	153	483	1,527	4,829
41	Etiwanda Avenue	I-10 WB Ramps to I-10 EB Ramps	6	5	26,318	50	0	6.1%	5.1%	71.7	149	470	1,487	4,704
42	Cherry Avenue	SR-210 WB Ramps to SR-210 EB Ramps	8	24	18,857	45	0	6.2%	5.2%	70.0	101	318	1,006	3,182
43	Cherry Avenue	SR-210 EB Ramps to Baseline Avenue	4	11	24,732	45	0	6.3%	5.4%	70.6	116	367	1,161	3,672
44	Cherry Avenue	Baseline Avenue to Foothill Boulevard	6	18	30,515	45	0	6.5%	5.6%	71.9	156	492	1,556	4,922
45	Cherry Avenue	Foothill Boulevard to Arrow Route	6	16	31,016	40	0	6.5%	5.7%	71.1	130	411	1,299	4,109
46	Cherry Avenue	Arrow Route to Whittram Avenue	6	16	35,818	40	0	6.6%	5.8%	71.8	151	478	1,513	4,783
47	Cherry Avenue	Whittram Avenue to Merrill Avenue	4	0	38,711	40	0	6.5%	5.7%	71.8	152	482	1,524	4,821
48	Cherry Avenue	Merrill Avenue to Randall Avenue	6	5	38,459	50	0	6.6%	5.8%	73.7	233	737	2,332	7,374
49	Cherry Avenue	Randall Avenue to San Bernardino Avenue	6	18	34,673	50	0	6.6%	5.7%	73.3	215	680	2,149	6,795
50	Cherry Avenue	San Bernardino Avenue to Valley Boulevard	6	0	28,694	50	0	6.5%	5.7%	72.3	171	542	1,712	5,415
51	Cherry Avenue	Valley Boulevard to I-10 WB Ramps	7	25	39,044	50	0	6.3%	5.4%	73.9	248	783	2,475	7,827
52	Cherry Avenue	I-10 WB Ramps to I-10 EB Ramps	8	5	39,598	50	0	6.2%	5.3%	73.8	241	762	2,409	7,617
53	Cherry Avenue	I-10 EB Ramps to Slover Avenue	8	25	31,361	45	0	6.1%	5.1%	72.2	165	523	1,654	5,231
54	Cherry Avenue	South of Slover Avenue	6	15	21,197	45	0	6.1%	5.1%	70.1	101	321	1,014	3,208
55	Beech Avenue	Highland Avenue to Baseline Avenue	4	5	10,695	40	0	2.0%	1.0%	62.3	-	54	170	538
56	Beech Avenue	Foothill Boulevard to Arrow Route	2	0	4,006	40	0	2.3%	1.3%	58.3	-	-	68	215
57	Beech Avenue	Arrow Route to Merrill Avenue	2	0	8,409	40	0	2.2%	1.2%	61.5	-	44	140	443
58	Beech Avenue	Merrill Avenue to Randall Avenue	2	0	5,739	40	0	2.3%	1.3%	59.9	-	-	99	312
59	Beech Avenue	Randall Avenue to San Bernardino Avenue	2	0	4,884	40	0	2.2%	1.2%	59.1	-	-	82	259
60	Beech Avenue	San Bernardino to Valley Boulevard	2	0	3,360	40	0	2.0%	1.0%	57.2	-	-	52	166
61	Citrus Avenue	SR-210 WB Ramps to SR-210 EB Ramps	8	43	26,021	55	0	2.1%	1.1%	70.6	114	360	1,137	3,595
62	Citrus Avenue	SR-210 EB Ramps to Baseline Avenue	4	14	25,204	40	0	2.1%	1.1%	66.3	-	134	424	1,340
63	Citrus Avenue	Baseline Avenue to Foothill Boulevard	4	0	18,577	40	0	2.1%	1.1%	64.9	-	97	307	970
64	Citrus Avenue	Foothill Boulevard to Arrow Route	4	0	20,220	40	0	2.1%	1.1%	65.2	-	105	333	1,052
65	Citrus Avenue	Arrow Route to Merrill Avenue	4	12	23,192	35	0	2.1%	1.1%	64.6	-	92	290	917
66	Citrus Avenue	Merrill Avenue to Randall Avenue	4	0	18,997	35	0	2.1%	1.2%	63.8	-	75	237	750
67	Citrus Avenue	Randall Avenue to San Bernardino Avenue	4	0	19,515	40	0	2.3%	1.3%	65.3	-	107	339	1,071
68	Citrus Avenue	San Bernardino Avenue to Valley Boulevard	4	0	20,815	45	0	2.1%	1.1%	66.5	44	140	442	1,397
69	Citrus Avenue	Valley Boulevard to I-10 WB Ramps	6	15	30,927	45	0	2.3%	1.4%	68.7	75	236	746	2,360
70	Citrus Avenue	I-10 WB Ramps to I-10 EB Ramps	7	0	25,559	45	0	2.2%	1.3%	67.8	-	189	598	1,892
71	Sierra Avenue	SR-210 WB Ramps to SR-210 EB Ramps	6	20	29,705	55	0	2.1%	1.1%	70.4	109	344	1,087	3,438
72	Sierra Avenue	SR-210 EB Ramps to Highland Avenue	6	24	38,827	50	0	2.1%	1.1%	70.6	114	360	1,138	3,598
73	Sierra Avenue	Highland Avenue to Baseline Avenue	6	15	27,335	50	0	2.1%	1.2%	69.0	80	253	800	2,531
74	Sierra Avenue	Baseline Avenue to Foothill Boulevard	4	0	20,666	40	0	2.2%	1.2%	65.4	-	110	348	1,101
75	Sierra Avenue	Foothill Boulevard to Arrow Route	4	10	19,863	30	0	2.2%	1.2%	63.4	-	68	216	685
76	Sierra Avenue	Arrow Route to Merrill Avenue	4	10	19,378	30	0	2.3%	1.4%	63.4	-	70	221	699
77	Sierra Avenue	Merrill Avenue to Randall Avenue	4	13	22,023	40	0	2.1%	1.1%	65.6	-	114	362	1,143
78	Sierra Avenue	Randall Avenue to San Bernardino Avenue	4	13	24,287	40	0	2.2%	1.3%	66.2	-	133	420	1,329
79	Sierra Avenue	San Bernardino Avenue to Valley Boulevard	6	12	32,502	40	0	2.2%	1.2%	67.6	-	182	574	1,816
80	Sierra Avenue	Valley Boulevard to I-10 Ramps	9	4	51,070	35	0	2.1%	1.1%	68.5	-	223	705	2,229

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

Project Name: Speedway Commerce Center II Specific Plan Project
Project Number: 94914001
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	Highland Avenue	West of Beech Avenue	4	14	7,952	45	0	2.0%	1.0%	62.2	-	53	168	530
2	Highland Avenue	Beech Avenue to Citrus Avenue	2	10	11,256	45	0	2.0%	1.0%	63.6	-	73	231	730
3	Highland Avenue	Citrus Avenue to Sierra Avenue	4	13	16,094	45	0	2.0%	1.0%	65.3	-	107	339	1,071
4	Baseline Avenue	Etiwanda Avenue to I-15 SB Ramps	5	13	22,624	50	0	2.0%	1.0%	67.9	62	197	622	1,967
5	Baseline Avenue	I-15 SB Ramps to I-15 NB Ramps	10	10	26,835	50	0	2.0%	1.0%	69.4	87	275	870	2,752
6	Baseline Avenue	I-15 NB Ramps to Cherry Avenue	6	17	26,354	45	0	2.0%	1.0%	67.7	-	184	582	1,842
7	Baseline Avenue	Cherry Avenue to Beech Avenue	6	15	27,978	45	0	2.0%	1.0%	67.9	-	195	616	1,947
8	Baseline Avenue	Beech Avenue to Citrus Avenue	6	14	21,456	45	0	2.0%	1.0%	66.7	-	149	471	1,490
9	Baseline Avenue	Citrus Avenue to Sierra Avenue	6	13	18,564	45	0	2.0%	1.0%	66.1	-	129	407	1,286
10	Foothill Boulevard	I-15 SB Ramps to I-15 NB Ramps	7	12	43,434	50	0	2.0%	1.0%	71.0	125	396	1,253	3,962
11	Foothill Boulevard	I-15 NB Ramps to Etiwanda Avenue	6	24	32,853	50	0	2.0%	1.0%	69.8	95	300	948	2,997
12	Foothill Boulevard	Etiwanda Avenue to Beech Avenue	6	12	24,224	50	0	2.0%	1.0%	68.3	68	215	680	2,150
13	Foothill Boulevard	Cherry Avenue to Beech Avenue	6	12	24,633	50	0	2.0%	1.0%	68.4	69	219	691	2,186
14	Foothill Boulevard	Beech Avenue to Citrus Avenue	4	0	25,885	45	0	2.0%	1.0%	67.3	54	170	537	1,697
15	Foothill Boulevard	Citrus Avenue to Sierra Avenue	4	11	22,756	45	0	2.0%	1.0%	66.8	-	151	478	1,510
16	Arrow Route	Milliken Avenue to Etiwanda Avenue	4	11	22,768	50	0	2.0%	1.0%	67.9	61	194	613	1,939
17	Arrow Route	Eitwanda Avenue to Cherry Avenue	2	0	16,509	45	0	2.0%	1.0%	65.3	34	107	337	1,067
18	Arrow Route	Cherry Avenue to Beech Avenue	2	0	17,706	45	0	2.0%	1.0%	65.6	36	114	362	1,144
19	Arrow Route	Beech Avenue to Citrus Avenue	2	0	15,941	45	0	2.0%	1.0%	65.1	33	103	326	1,030
20	Arrow Route	Citrus Avenue to Sierra Avenue	4	10	15,944	35	0	2.0%	1.0%	62.8	-	60	190	601
21	Merrill Avenue	Cherry Avenue to Beech Avenue	2	0	7,673	40	0	2.0%	1.0%	60.8	-	38	120	378
22	Merrill Avenue	Beech Avenue to Citrus Avenue	2	0	8,928	40	0	2.0%	1.0%	61.4	-	44	139	440
23	Merrill Avenue	Citrus Avenue to Sierra Avenue	4	0	12,262	40	0	2.0%	1.0%	62.9	-	61	194	614
24	Randall Avenue	Cherry Avenue to Beech Avenue	2	0	9,602	40	0	2.0%	1.0%	61.8	-	47	150	473
25	Randall Avenue	Beech Avenue to Citrus Avenue	2	0	7,561	40	0	2.0%	1.0%	60.7	-	37	118	373
26	Randall Avenue	Citrus Avenue to Sierra Avenue	4	0	8,555	40	0	2.0%	1.0%	61.3	-	-	135	428
27	Fourth Street / San Bernardino Avenue	I-15 SB Ramps to I-15 NB Ramps	9	0	27,184	55	0	6.0%	5.0%	72.9	196	619	1,957	6,190
28	Fourth Street / San Bernardino Avenue	I-15 NB Ramps to Etiwanda Avenue	4	15	18,129	50	0	6.0%	5.0%	70.0	99	313	989	3,127
29	Fourth Street / San Bernardino Avenue	Etiwanda Avenue to Commerce Drive	4	16	13,130	55	0	6.0%	5.0%	69.3	86	272	859	2,716
30	Fourth Street / San Bernardino Avenue	Commerce Drive to Cherry Avenue	4	22	21,267	55	0	6.0%	5.0%	71.5	140	444	1,403	4,438
31	Fourth Street / San Bernardino Avenue	Cherry Avenue to Beech Avenue	2	13	12,634	40	0	6.0%	5.0%	66.6	45	143	453	1,433
32	Fourth Street / San Bernardino Avenue	Beech Avenue to Citrus Avenue	4	0	9,826	40	0	6.0%	5.0%	65.5	-	112	355	1,124
33	Fourth Street / San Bernardino Avenue	Citrus Avenue to Sierra Avenue	4	0	12,214	40	0	6.0%	5.0%	66.5	44	140	442	1,397
34	Valley Boulevard	Commerce Drive / I-10 Ramps to Cherry Avenue	4	12	21,571	45	0	6.0%	10.0%	71.4	137	435	1,374	4,346
35	Valley Boulevard	Cherry Avenue to Beech Avenue	4	12	19,339	45	0	6.0%	10.0%	70.9	123	390	1,232	3,896
36	Etiwanda Avenue	Baseline Avenue to Foothill Boulevard	4	10	11,795	45	0	6.0%	5.0%	67.2	53	167	528	1,670
37	Etiwanda Avenue	Foothill Boulevard to Arrow Route	4	0	16,960	50	0	6.0%	5.0%	69.6	91	288	909	2,876

#	Roadway	Segment	Lanes	Median Width	ADT Volume	Speed (mph)	Alpha Factor	Vehicle Mix: Medium Trucks	Vehicle Mix: Heavy Trucks	CNEL at 100 Feet	Distance from Centerline of Roadway to Contour: 70 CNEL	65 CNEL	60 CNEL	55 CNEL
38	Etiwanda Avenue	Arrow Route to San Bernardino Avenue / Fourth Street	2	13	19,422	55	0	6.0%	5.0%	70.9	124	391	1,236	3,909
39	Etiwanda Avenue	San Bernardino Avenue / Fourth Street to Valley Boulevard	4	20	19,321	50	0	6.0%	5.0%	70.3	106	336	1,061	3,357
40	Etiwanda Avenue	Valley Boulevard to I-10 WB Ramps	7	10	25,940	50	0	6.0%	5.0%	71.8	150	474	1,500	4,744
41	Etiwanda Avenue	I-10 WB Ramps to I-10 EB Ramps	6	5	26,866	50	0	6.0%	5.0%	71.8	150	474	1,498	4,738
42	Cherry Avenue	SR-210 WB Ramps to SR-210 EB Ramps	8	24	17,844	45	0	6.0%	5.0%	69.7	92	292	924	2,922
43	Cherry Avenue	SR-210 EB Ramps to Baseline Avenue	4	11	22,245	45	0	6.0%	5.0%	70.0	100	315	997	3,154
44	Cherry Avenue	Baseline Avenue to Foothill Boulevard	6	18	25,701	45	0	6.0%	5.0%	70.9	122	385	1,217	3,847
45	Cherry Avenue	Foothill Boulevard to Arrow Route	6	16	25,023	40	0	6.0%	5.0%	69.8	96	304	963	3,044
46	Cherry Avenue	Arrow Route to Whittram Avenue	6	16	27,586	40	0	6.0%	5.0%	70.3	106	336	1,061	3,356
47	Cherry Avenue	Whittram Avenue to Merrill Avenue	4	0	30,641	40	0	6.0%	5.0%	70.4	111	350	1,108	3,505
48	Cherry Avenue	Merrill Avenue to Randall Avenue	6	5	29,769	50	0	6.0%	5.0%	72.2	166	525	1,660	5,250
49	Cherry Avenue	Randall Avenue to San Bernardino Avenue	6	18	30,757	50	0	6.0%	5.0%	72.5	176	557	1,762	5,571
50	Cherry Avenue	San Bernardino Avenue to Valley Boulevard	6	0	25,548	50	0	6.0%	5.0%	71.5	141	447	1,413	4,467
51	Cherry Avenue	Valley Boulevard to I-10 WB Ramps	7	25	37,087	50	0	6.0%	5.0%	73.5	224	707	2,237	7,074
52	Cherry Avenue	I-10 WB Ramps to I-10 EB Ramps	8	5	39,456	50	0	6.0%	5.0%	73.7	232	735	2,324	7,349
53	Cherry Avenue	I-10 EB Ramps to Slover Avenue	8	25	31,862	45	0	6.0%	5.0%	72.2	166	524	1,657	5,238
54	Cherry Avenue	South of Slover Avenue	6	15	21,383	45	0	6.0%	5.0%	70.0	101	318	1,005	3,179
55	Beech Avenue	Highland Avenue to Baseline Avenue	4	5	11,301	40	0	2.0%	1.0%	62.5	-	57	180	568
56	Beech Avenue	Foothill Boulevard to Arrow Route	2	0	4,231	40	0	2.0%	1.0%	58.2	-	-	66	209
57	Beech Avenue	Arrow Route to Merrill Avenue	2	0	8,817	40	0	2.0%	1.0%	61.4	-	43	137	435
58	Beech Avenue	Merrill Avenue to Randall Avenue	2	0	5,997	40	0	2.0%	1.0%	59.7	-	-	94	296
59	Beech Avenue	Randall Avenue to San Bernardino Avenue	2	0	4,878	40	0	2.0%	1.0%	58.8	-	-	76	241
60	Beech Avenue	San Bernardino to Valley Boulevard	2	0	3,550	40	0	2.0%	1.0%	57.4	-	-	55	175
61	Citrus Avenue	SR-210 WB Ramps to SR-210 EB Ramps	8	43	27,102	55	0	2.0%	1.0%	70.6	116	366	1,158	3,662
62	Citrus Avenue	SR-210 EB Ramps to Baseline Avenue	4	14	26,108	40	0	2.0%	1.0%	66.2	-	133	420	1,327
63	Citrus Avenue	Baseline Avenue to Foothill Boulevard	4	0	19,594	40	0	2.0%	1.0%	64.9	-	98	310	980
64	Citrus Avenue	Foothill Boulevard to Arrow Route	4	0	21,330	40	0	2.0%	1.0%	65.3	-	107	338	1,067
65	Citrus Avenue	Arrow Route to Merrill Avenue	4	12	24,404	35	0	2.0%	1.0%	64.6	-	92	291	922
66	Citrus Avenue	Merrill Avenue to Randall Avenue	4	0	19,894	35	0	2.0%	1.0%	63.7	-	74	234	742
67	Citrus Avenue	Randall Avenue to San Bernardino Avenue	4	0	20,029	40	0	2.0%	1.0%	65.0	-	100	317	1,002
68	Citrus Avenue	San Bernardino Avenue to Valley Boulevard	4	0	21,691	45	0	2.0%	1.0%	66.5	45	142	450	1,422
69	Citrus Avenue	Valley Boulevard to I-10 WB Ramps	6	15	31,774	45	0	2.0%	1.0%	68.4	70	221	699	2,211
70	Citrus Avenue	I-10 WB Ramps to I-10 EB Ramps	7	0	26,508	45	0	2.0%	1.0%	67.6	-	183	580	1,833
71	Sierra Avenue	SR-210 WB Ramps to SR-210 EB Ramps	6	20	31,060	55	0	2.0%	1.0%	70.5	112	354	1,118	3,537
72	Sierra Avenue	SR-210 EB Ramps to Highland Avenue	6	24	40,643	50	0	2.0%	1.0%	70.7	117	371	1,172	3,708
73	Sierra Avenue	Highland Avenue to Baseline Avenue	6	15	28,229	50	0	2.0%	1.0%	69.0	80	252	797	2,521
74	Sierra Avenue	Baseline Avenue to Foothill Boulevard	4	0	21,452	40	0	2.0%	1.0%	65.3	-	107	339	1,073
75	Sierra Avenue	Foothill Boulevard to Arrow Route	4	10	20,796	30	0	2.0%	1.0%	63.1	-	64	203	641
76	Sierra Avenue	Arrow Route to Merrill Avenue	4	10	19,956	30	0	2.0%	1.0%	62.9	-	62	195	615
77	Sierra Avenue	Merrill Avenue to Randall Avenue	4	13	23,007	40	0	2.0%	1.0%	65.7	-	117	369	1,168
78	Sierra Avenue	Randall Avenue to San Bernardino Avenue	4	13	24,674	40	0	2.0%	1.0%	66.0	-	125	396	1,253
79	Sierra Avenue	San Bernardino Avenue to Valley Boulevard	6	12	33,544	40	0	2.0%	1.0%	67.5	-	177	560	1,770
80	Sierra Avenue	Valley Boulevard to I-10 Ramps	9	4	53,421	35	0	2.0%	1.0%	68.5	-	226	715	2,262

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

Project Name: Speedway Commerce Center II Specific Plan Project
Project Number: 94914001
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	Highland Avenue	West of Beech Avenue	4	14	7,952	45	0	2.0%	1.0%	62.2	-	53	168	530
2	Highland Avenue	Beech Avenue to Citrus Avenue	2	10	11,256	45	0	2.0%	1.0%	63.6	-	73	231	730
3	Highland Avenue	Citrus Avenue to Sierra Avenue	4	13	16,094	45	0	2.0%	1.0%	65.3	-	107	339	1,071
4	Baseline Avenue	Etiwanda Avenue to I-15 SB Ramps	5	13	22,624	50	0	2.0%	1.0%	67.9	62	197	622	1,967
5	Baseline Avenue	I-15 SB Ramps to I-15 NB Ramps	10	10	26,975	50	0	2.0%	1.0%	69.5	88	279	883	2,791
6	Baseline Avenue	I-15 NB Ramps to Cherry Avenue	6	17	26,624	45	0	2.1%	1.1%	67.8	-	190	599	1,895
7	Baseline Avenue	Cherry Avenue to Beech Avenue	6	15	30,218	45	0	2.5%	1.6%	68.8	76	242	765	2,418
8	Baseline Avenue	Beech Avenue to Citrus Avenue	6	14	23,126	45	0	2.4%	1.4%	67.5	-	179	567	1,792
9	Baseline Avenue	Citrus Avenue to Sierra Avenue	6	13	19,874	45	0	2.3%	1.4%	66.8	-	151	478	1,512
10	Foothill Boulevard	I-15 SB Ramps to I-15 NB Ramps	7	12	45,194	50	0	2.3%	1.3%	71.5	140	443	1,401	4,432
11	Foothill Boulevard	I-15 NB Ramps to Etiwanda Avenue	6	24	35,503	50	0	2.5%	1.6%	70.7	116	368	1,162	3,675
12	Foothill Boulevard	Etiwanda Avenue to Beech Avenue	6	12	24,264	50	0	2.0%	1.0%	68.3	68	216	683	2,159
13	Foothill Boulevard	Cherry Avenue to Beech Avenue	6	12	25,773	50	0	2.3%	1.3%	68.9	78	246	778	2,460
14	Foothill Boulevard	Beech Avenue to Citrus Avenue	4	0	27,355	45	0	2.4%	1.4%	68.0	63	199	629	1,991
15	Foothill Boulevard	Citrus Avenue to Sierra Avenue	4	11	23,656	45	0	2.2%	1.3%	67.3	53	168	532	1,683
16	Arrow Route	Milliken Avenue to Etiwanda Avenue	4	11	23,488	50	0	2.1%	1.2%	68.2	66	207	656	2,073
17	Arrow Route	Eitwanda Avenue to Cherry Avenue	2	0	16,509	45	0	2.0%	1.0%	65.3	34	107	337	1,067
18	Arrow Route	Cherry Avenue to Beech Avenue	2	0	18,706	45	0	2.3%	1.4%	66.3	42	134	423	1,339
19	Arrow Route	Beech Avenue to Citrus Avenue	2	0	17,001	45	0	2.4%	1.4%	65.9	39	123	390	1,232
20	Arrow Route	Citrus Avenue to Sierra Avenue	4	10	16,584	35	0	2.3%	1.3%	63.4	-	69	218	689
21	Merrill Avenue	Cherry Avenue to Beech Avenue	2	0	8,233	40	0	2.4%	1.4%	61.6	-	46	146	461
22	Merrill Avenue	Beech Avenue to Citrus Avenue	2	0	9,488	40	0	2.4%	1.4%	62.3	-	53	168	531
23	Merrill Avenue	Citrus Avenue to Sierra Avenue	4	0	13,672	40	0	2.7%	1.8%	64.3	-	85	268	847
24	Randall Avenue	Cherry Avenue to Beech Avenue	2	0	15,572	40	0	4.0%	3.3%	66.2	41	131	414	1,310
25	Randall Avenue	Beech Avenue to Citrus Avenue	2	0	12,401	40	0	4.1%	3.4%	65.2	33	106	334	1,057
26	Randall Avenue	Citrus Avenue to Sierra Avenue	4	0	10,705	40	0	3.2%	2.4%	63.9	-	77	243	769
27	Fourth Street / San Bernardino Avenue	I-15 SB Ramps to I-15 NB Ramps	9	0	29,014	55	0	6.2%	5.2%	73.3	214	678	2,143	6,777
28	Fourth Street / San Bernardino Avenue	I-15 NB Ramps to Etiwanda Avenue	4	15	21,619	50	0	6.5%	5.6%	71.0	126	398	1,258	3,979
29	Fourth Street / San Bernardino Avenue	Etiwanda Avenue to Commerce Drive	4	16	16,840	55	0	6.6%	5.8%	70.8	119	377	1,192	3,768
30	Fourth Street / San Bernardino Avenue	Commerce Drive to Cherry Avenue	4	22	28,927	55	0	6.7%	5.9%	73.2	210	664	2,101	6,644
31	Fourth Street / San Bernardino Avenue	Cherry Avenue to Beech Avenue	2	13	13,804	40	0	6.2%	5.3%	67.1	51	163	514	1,625
32	Fourth Street / San Bernardino Avenue	Beech Avenue to Citrus Avenue	4	0	10,776	40	0	6.2%	5.3%	66.1	-	128	406	1,284
33	Fourth Street / San Bernardino Avenue	Citrus Avenue to Sierra Avenue	4	0	13,184	40	0	6.2%	5.3%	66.9	50	157	495	1,565
34	Valley Boulevard	Commerce Drive / I-10 Ramps to Cherry Avenue	4	12	21,571	45	0	6.0%	10.0%	71.4	137	435	1,374	4,346
35	Valley Boulevard	Cherry Avenue to Beech Avenue	4	12	20,609	45	0	6.1%	10.0%	71.2	132	416	1,317	4,164
36	Etiwanda Avenue	Baseline Avenue to Foothill Boulevard	4	10	12,315	45	0	6.1%	5.2%	67.5	56	178	563	1,781

#	Roadway	Segment	Lanes	Median Width	ADT Volume	Speed (mph)	Alpha Factor	Vehicle Mix: Medium Trucks	Vehicle Mix: Heavy Trucks	CNEL at 100 Feet	Distance from Centerline of Roadway to Contour: 70 CNEL	65 CNEL	60 CNEL	55 CNEL
37	Etiwanda Avenue	Foothill Boulevard to Arrow Route	4	0	20,170	50	0	6.4%	5.6%	70.6	115	364	1,152	3,642
38	Etiwanda Avenue	Arrow Route to San Bernardino Avenue / Fourth Street	2	13	23,352	55	0	6.5%	5.6%	72.0	159	502	1,586	5,017
39	Etiwanda Avenue	San Bernardino Avenue / Fourth Street to Valley Boulevard	4	20	20,771	50	0	6.2%	5.2%	70.7	117	371	1,172	3,706
40	Etiwanda Avenue	Valley Boulevard to I-10 WB Ramps	7	10	27,390	50	0	6.1%	5.2%	72.1	162	511	1,615	5,108
41	Etiwanda Avenue	I-10 WB Ramps to I-10 EB Ramps	6	5	27,806	50	0	6.1%	5.1%	72.0	157	497	1,572	4,970
42	Cherry Avenue	SR-210 WB Ramps to SR-210 EB Ramps	8	24	19,224	45	0	6.2%	5.2%	70.1	103	324	1,026	3,243
43	Cherry Avenue	SR-210 EB Ramps to Baseline Avenue	4	11	24,735	45	0	6.3%	5.4%	70.6	116	367	1,161	3,672
44	Cherry Avenue	Baseline Avenue to Foothill Boulevard	6	18	31,231	45	0	6.5%	5.6%	72.0	159	504	1,593	5,037
45	Cherry Avenue	Foothill Boulevard to Arrow Route	6	16	31,653	40	0	6.5%	5.7%	71.2	133	419	1,326	4,193
46	Cherry Avenue	Arrow Route to Whittram Avenue	6	16	35,216	40	0	6.6%	5.8%	71.7	149	470	1,487	4,703
47	Cherry Avenue	Whittram Avenue to Merrill Avenue	4	0	38,271	40	0	6.5%	5.7%	71.8	151	477	1,507	4,766
48	Cherry Avenue	Merrill Avenue to Randall Avenue	6	5	37,959	50	0	6.6%	5.8%	73.6	230	728	2,301	7,278
49	Cherry Avenue	Randall Avenue to San Bernardino Avenue	6	18	38,577	50	0	6.6%	5.7%	73.8	239	756	2,391	7,560
50	Cherry Avenue	San Bernardino Avenue to Valley Boulevard	6	0	31,938	50	0	6.5%	5.7%	72.8	191	603	1,906	6,027
51	Cherry Avenue	Valley Boulevard to I-10 WB Ramps	7	25	42,207	50	0	6.3%	5.4%	74.3	268	846	2,676	8,461
52	Cherry Avenue	I-10 WB Ramps to I-10 EB Ramps	8	5	42,596	50	0	6.2%	5.3%	74.1	259	819	2,591	8,193
53	Cherry Avenue	I-10 EB Ramps to Slover Avenue	8	25	33,062	45	0	6.1%	5.1%	72.4	174	551	1,744	5,514
54	Cherry Avenue	South of Slover Avenue	6	15	22,343	45	0	6.1%	5.1%	70.3	107	338	1,069	3,381
55	Beech Avenue	Highland Avenue to Baseline Avenue	4	5	11,301	40	0	2.0%	1.0%	62.5	-	57	180	568
56	Beech Avenue	Foothill Boulevard to Arrow Route	2	0	4,561	40	0	2.3%	1.3%	58.9	-	-	78	245
57	Beech Avenue	Arrow Route to Merrill Avenue	2	0	9,207	40	0	2.2%	1.2%	61.9	-	49	154	486
58	Beech Avenue	Merrill Avenue to Randall Avenue	2	0	6,387	40	0	2.3%	1.3%	60.4	-	35	110	347
59	Beech Avenue	Randall Avenue to San Bernardino Avenue	2	0	5,138	40	0	2.2%	1.2%	59.3	-	-	86	272
60	Beech Avenue	San Bernardino to Valley Boulevard	2	0	3,550	40	0	2.0%	1.0%	57.4	-	-	55	175
61	Citrus Avenue	SR-210 WB Ramps to SR-210 EB Ramps	8	43	27,462	55	0	2.1%	1.1%	70.8	120	379	1,200	3,794
62	Citrus Avenue	SR-210 EB Ramps to Baseline Avenue	4	14	26,598	40	0	2.1%	1.1%	66.5	-	141	447	1,414
63	Citrus Avenue	Baseline Avenue to Foothill Boulevard	4	0	19,954	40	0	2.1%	1.1%	65.2	-	104	330	1,042
64	Citrus Avenue	Foothill Boulevard to Arrow Route	4	0	21,690	40	0	2.1%	1.1%	65.5	-	113	357	1,128
65	Citrus Avenue	Arrow Route to Merrill Avenue	4	12	24,824	35	0	2.1%	1.1%	64.9	-	98	310	982
66	Citrus Avenue	Merrill Avenue to Randall Avenue	4	0	20,334	35	0	2.1%	1.2%	64.0	-	80	254	803
67	Citrus Avenue	Randall Avenue to San Bernardino Avenue	4	0	20,859	40	0	2.3%	1.3%	65.6	-	114	362	1,144
68	Citrus Avenue	San Bernardino Avenue to Valley Boulevard	4	0	21,931	45	0	2.1%	1.1%	66.7	47	147	466	1,472
69	Citrus Avenue	Valley Boulevard to I-10 WB Ramps	6	15	33,284	45	0	2.3%	1.4%	69.0	80	254	803	2,540
70	Citrus Avenue	I-10 WB Ramps to I-10 EB Ramps	7	0	27,398	45	0	2.2%	1.3%	68.1	64	203	641	2,028
71	Sierra Avenue	SR-210 WB Ramps to SR-210 EB Ramps	6	20	31,370	55	0	2.1%	1.1%	70.6	115	363	1,148	3,631
72	Sierra Avenue	SR-210 EB Ramps to Highland Avenue	6	24	41,013	50	0	2.1%	1.1%	70.8	120	380	1,202	3,800
73	Sierra Avenue	Highland Avenue to Baseline Avenue	6	15	28,839	50	0	2.1%	1.2%	69.3	84	267	844	2,670
74	Sierra Avenue	Baseline Avenue to Foothill Boulevard	4	0	22,132	40	0	2.2%	1.2%	65.7	-	118	373	1,179
75	Sierra Avenue	Foothill Boulevard to Arrow Route	4	10	21,626	30	0	2.2%	1.2%	63.7	-	75	236	745
76	Sierra Avenue	Arrow Route to Merrill Avenue	4	10	21,086	30	0	2.3%	1.4%	63.8	-	76	240	760
77	Sierra Avenue	Merrill Avenue to Randall Avenue	4	13	23,247	40	0	2.1%	1.1%	65.8	-	121	382	1,207
78	Sierra Avenue	Randall Avenue to San Bernardino Avenue	4	13	25,574	40	0	2.2%	1.3%	66.5	-	140	442	1,399
79	Sierra Avenue	San Bernardino Avenue to Valley Boulevard	6	12	34,364	40	0	2.2%	1.2%	67.8	-	192	607	1,920
80	Sierra Avenue	Valley Boulevard to I-10 Ramps	9	4	54,001	35	0	2.1%	1.1%	68.7	-	236	745	2,357

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

Project Name: Speedway Commerce Center II Specific Plan Project
Project Number: 94914001
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	Highland Avenue	West of Beech Avenue	4	14	10,480	45	0	2.0%	1.0%	63.4	-	70	221	698
2	Highland Avenue	Beech Avenue to Citrus Avenue	2	10	14,280	45	0	2.0%	1.0%	64.7	-	93	293	927
3	Highland Avenue	Citrus Avenue to Sierra Avenue	4	13	20,640	45	0	2.0%	1.0%	66.4	-	137	434	1,373
4	Baseline Avenue	Etiwanda Avenue to I-15 SB Ramps	5	13	30,660	50	0	2.0%	1.0%	69.3	84	267	843	2,665
5	Baseline Avenue	I-15 SB Ramps to I-15 NB Ramps	10	10	31,770	50	0	2.0%	1.0%	70.1	103	326	1,030	3,258
6	Baseline Avenue	I-15 NB Ramps to Cherry Avenue	6	17	32,240	45	0	2.0%	1.0%	68.5	71	225	713	2,253
7	Baseline Avenue	Cherry Avenue to Beech Avenue	6	15	31,250	45	0	2.0%	1.0%	68.4	69	217	688	2,174
8	Baseline Avenue	Beech Avenue to Citrus Avenue	6	14	30,560	45	0	2.0%	1.0%	68.3	67	212	671	2,122
9	Baseline Avenue	Citrus Avenue to Sierra Avenue	6	13	28,580	45	0	2.0%	1.0%	68.0	63	198	626	1,980
10	Foothill Boulevard	I-15 SB Ramps to I-15 NB Ramps	7	12	45,090	50	0	2.0%	1.0%	71.1	130	411	1,301	4,114
11	Foothill Boulevard	I-15 NB Ramps to Etiwanda Avenue	6	24	36,570	50	0	2.0%	1.0%	70.2	105	334	1,055	3,336
12	Foothill Boulevard	Etiwanda Avenue to Beech Avenue	6	12	28,920	50	0	2.0%	1.0%	69.1	81	257	812	2,566
13	Foothill Boulevard	Cherry Avenue to Beech Avenue	6	12	28,900	50	0	2.0%	1.0%	69.1	81	256	811	2,565
14	Foothill Boulevard	Beech Avenue to Citrus Avenue	4	0	28,580	45	0	2.0%	1.0%	67.7	59	187	593	1,874
15	Foothill Boulevard	Citrus Avenue to Sierra Avenue	4	11	27,060	45	0	2.0%	1.0%	67.5	57	180	568	1,796
16	Arrow Route	Milliken Avenue to Etiwanda Avenue	4	11	38,850	50	0	2.0%	1.0%	70.2	105	331	1,046	3,309
17	Arrow Route	Eitwanda Avenue to Cherry Avenue	2	0	34,960	45	0	2.0%	1.0%	68.5	71	226	714	2,259
18	Arrow Route	Cherry Avenue to Beech Avenue	2	0	19,800	45	0	2.0%	1.0%	66.1	40	128	405	1,279
19	Arrow Route	Beech Avenue to Citrus Avenue	2	0	18,540	45	0	2.0%	1.0%	65.8	38	120	379	1,198
20	Arrow Route	Citrus Avenue to Sierra Avenue	4	10	17,660	35	0	2.0%	1.0%	63.2	-	67	210	665
21	Merrill Avenue	Cherry Avenue to Beech Avenue	2	0	10,020	40	0	2.0%	1.0%	61.9	-	49	156	494
22	Merrill Avenue	Beech Avenue to Citrus Avenue	2	0	9,940	40	0	2.0%	1.0%	61.9	-	49	155	490
23	Merrill Avenue	Citrus Avenue to Sierra Avenue	4	0	13,680	40	0	2.0%	1.0%	63.4	-	68	216	685
24	Randall Avenue	Cherry Avenue to Beech Avenue	2	0	15,570	40	0	2.0%	1.0%	63.9	-	77	243	768
25	Randall Avenue	Beech Avenue to Citrus Avenue	2	0	12,100	40	0	2.0%	1.0%	62.8	-	60	189	597
26	Randall Avenue	Citrus Avenue to Sierra Avenue	4	0	10,440	40	0	2.0%	1.0%	62.2	-	52	165	522
27	Fourth Street / San Bernardino Avenue	I-15 SB Ramps to I-15 NB Ramps	9	0	30,550	55	0	6.0%	5.0%	73.4	220	696	2,200	6,956
28	Fourth Street / San Bernardino Avenue	I-15 NB Ramps to Etiwanda Avenue	4	15	21,800	50	0	6.0%	5.0%	70.8	119	376	1,189	3,760
29	Fourth Street / San Bernardino Avenue	Etiwanda Avenue to Commerce Drive	4	16	17,000	55	0	6.0%	5.0%	70.5	111	352	1,112	3,516
30	Fourth Street / San Bernardino Avenue	Commerce Drive to Cherry Avenue	4	22	27,150	55	0	6.0%	5.0%	72.5	179	567	1,792	5,666
31	Fourth Street / San Bernardino Avenue	Cherry Avenue to Beech Avenue	2	13	15,710	40	0	6.0%	5.0%	67.5	56	178	563	1,782
32	Fourth Street / San Bernardino Avenue	Beech Avenue to Citrus Avenue	4	0	11,530	40	0	6.0%	5.0%	66.2	-	132	417	1,319
33	Fourth Street / San Bernardino Avenue	Citrus Avenue to Sierra Avenue	4	0	13,090	40	0	6.0%	5.0%	66.8	47	150	473	1,497
34	Valley Boulevard	Commerce Drive / I-10 Ramps to Cherry Avenue	4	12	21,570	45	0	6.0%	10.0%	71.4	137	435	1,374	4,345
35	Valley Boulevard	Cherry Avenue to Beech Avenue	4	12	28,460	45	0	6.0%	10.0%	72.6	181	573	1,813	5,734
36	Etiwanda Avenue	Baseline Avenue to Foothill Boulevard	4	10	12,340	45	0	6.0%	5.0%	67.4	55	175	553	1,748
37	Etiwanda Avenue	Foothill Boulevard to Arrow Route	4	0	20,850	50	0	6.0%	5.0%	70.5	112	354	1,118	3,535

#	Roadway	Segment	Lanes	Median Width	ADT Volume	Speed (mph)	Alpha Factor	Vehicle Mix: Medium Trucks	Vehicle Mix: Heavy Trucks	CNEL at 100 Feet	Distance from Centerline of Roadway to Contour: 70 CNEL	65 CNEL	60 CNEL	55 CNEL
38	Etiwanda Avenue	Arrow Route to San Bernardino Avenue / Fourth Street	2	13	22,800	55	0	6.0%	5.0%	71.6	145	459	1,451	4,589
39	Etiwanda Avenue	San Bernardino Avenue / Fourth Street to Valley Boulevard	4	20	24,750	50	0	6.0%	5.0%	71.3	136	430	1,360	4,300
40	Etiwanda Avenue	Valley Boulevard to I-10 WB Ramps	7	10	34,270	50	0	6.0%	5.0%	73.0	198	627	1,982	6,267
41	Etiwanda Avenue	I-10 WB Ramps to I-10 EB Ramps	6	5	33,070	50	0	6.0%	5.0%	72.7	184	583	1,844	5,832
42	Cherry Avenue	SR-210 WB Ramps to SR-210 EB Ramps	8	24	22,330	45	0	6.0%	5.0%	70.6	116	366	1,157	3,657
43	Cherry Avenue	SR-210 EB Ramps to Baseline Avenue	4	11	24,930	45	0	6.0%	5.0%	70.5	112	353	1,118	3,535
44	Cherry Avenue	Baseline Avenue to Foothill Boulevard	6	18	31,400	45	0	6.0%	5.0%	71.7	149	470	1,486	4,700
45	Cherry Avenue	Foothill Boulevard to Arrow Route	6	16	34,470	40	0	6.0%	5.0%	71.2	133	419	1,326	4,193
46	Cherry Avenue	Arrow Route to Whittram Avenue	6	16	35,450	40	0	6.0%	5.0%	71.3	136	431	1,364	4,312
47	Cherry Avenue	Whittram Avenue to Merrill Avenue	4	0	39,840	40	0	6.0%	5.0%	71.6	144	456	1,441	4,557
48	Cherry Avenue	Merrill Avenue to Randall Avenue	6	5	37,530	50	0	6.0%	5.0%	73.2	209	662	2,093	6,619
49	Cherry Avenue	Randall Avenue to San Bernardino Avenue	6	18	38,580	50	0	6.0%	5.0%	73.4	221	699	2,210	6,988
50	Cherry Avenue	San Bernardino Avenue to Valley Boulevard	6	0	32,750	50	0	6.0%	5.0%	72.6	181	573	1,811	5,726
51	Cherry Avenue	Valley Boulevard to I-10 WB Ramps	7	25	43,730	50	0	6.0%	5.0%	74.2	264	834	2,638	8,341
52	Cherry Avenue	I-10 WB Ramps to I-10 EB Ramps	8	5	43,590	50	0	6.0%	5.0%	74.1	257	812	2,567	8,119
53	Cherry Avenue	I-10 EB Ramps to Slover Avenue	8	25	41,880	45	0	6.0%	5.0%	73.4	218	689	2,177	6,886
54	Cherry Avenue	South of Slover Avenue	6	15	26,820	45	0	6.0%	5.0%	71.0	126	399	1,261	3,988
55	Beech Avenue	Highland Avenue to Baseline Avenue	4	5	16,190	40	0	2.0%	1.0%	64.1	-	81	257	814
56	Beech Avenue	Foothill Boulevard to Arrow Route	2	0	9,040	40	0	2.0%	1.0%	61.5	-	45	141	446
57	Beech Avenue	Arrow Route to Merrill Avenue	2	0	13,920	40	0	2.0%	1.0%	63.4	-	69	217	686
58	Beech Avenue	Merrill Avenue to Randall Avenue	2	0	9,390	40	0	2.0%	1.0%	61.7	-	46	146	463
59	Beech Avenue	Randall Avenue to San Bernardino Avenue	2	0	8,710	40	0	2.0%	1.0%	61.3	-	43	136	429
60	Beech Avenue	San Bernardino to Valley Boulevard	2	0	12,610	40	0	2.0%	1.0%	62.9	-	62	197	622
61	Citrus Avenue	SR-210 WB Ramps to SR-210 EB Ramps	8	43	28,280	55	0	2.0%	1.0%	70.8	121	382	1,208	3,821
62	Citrus Avenue	SR-210 EB Ramps to Baseline Avenue	4	14	26,600	40	0	2.0%	1.0%	66.3	-	135	428	1,352
63	Citrus Avenue	Baseline Avenue to Foothill Boulevard	4	0	20,590	40	0	2.0%	1.0%	65.1	-	103	326	1,030
64	Citrus Avenue	Foothill Boulevard to Arrow Route	4	0	22,980	40	0	2.0%	1.0%	65.6	-	115	364	1,150
65	Citrus Avenue	Arrow Route to Merrill Avenue	4	12	25,580	35	0	2.0%	1.0%	64.9	-	97	306	966
66	Citrus Avenue	Merrill Avenue to Randall Avenue	4	0	21,280	35	0	2.0%	1.0%	64.0	-	79	251	793
67	Citrus Avenue	Randall Avenue to San Bernardino Avenue	4	0	21,140	40	0	2.0%	1.0%	65.2	-	106	335	1,058
68	Citrus Avenue	San Bernardino Avenue to Valley Boulevard	4	0	22,420	45	0	2.0%	1.0%	66.7	46	147	465	1,470
69	Citrus Avenue	Valley Boulevard to I-10 WB Ramps	6	15	33,560	45	0	2.0%	1.0%	68.7	74	234	738	2,335
70	Citrus Avenue	I-10 WB Ramps to I-10 EB Ramps	7	0	27,410	45	0	2.0%	1.0%	67.8	-	190	599	1,895
71	Sierra Avenue	SR-210 WB Ramps to SR-210 EB Ramps	6	20	33,530	55	0	2.0%	1.0%	70.8	121	382	1,207	3,818
72	Sierra Avenue	SR-210 EB Ramps to Highland Avenue	6	24	46,760	50	0	2.0%	1.0%	71.3	135	427	1,349	4,266
73	Sierra Avenue	Highland Avenue to Baseline Avenue	6	15	32,460	50	0	2.0%	1.0%	69.6	92	290	917	2,899
74	Sierra Avenue	Baseline Avenue to Foothill Boulevard	4	0	26,120	40	0	2.0%	1.0%	66.2	-	131	413	1,307
75	Sierra Avenue	Foothill Boulevard to Arrow Route	4	10	27,020	30	0	2.0%	1.0%	64.2	-	83	263	833
76	Sierra Avenue	Arrow Route to Merrill Avenue	4	10	25,240	30	0	2.0%	1.0%	63.9	-	78	246	778
77	Sierra Avenue	Merrill Avenue to Randall Avenue	4	13	26,680	40	0	2.0%	1.0%	66.3	-	135	428	1,355
78	Sierra Avenue	Randall Avenue to San Bernardino Avenue	4	13	28,700	40	0	2.0%	1.0%	66.6	-	146	461	1,457
79	Sierra Avenue	San Bernardino Avenue to Valley Boulevard	6	12	34,770	40	0	2.0%	1.0%	67.6	-	183	580	1,835
80	Sierra Avenue	Valley Boulevard to I-10 Ramps	9	4	54,870	35	0	2.0%	1.0%	68.7	-	232	735	2,323

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

Project Name: Speedway Commerce Center II Specific Plan Project
Project Number: 94914001
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	Highland Avenue	West of Beech Avenue	4	14	10,480	45	0	2.0%	1.0%	63.4	-	70	221	698
2	Highland Avenue	Beech Avenue to Citrus Avenue	2	10	14,280	45	0	2.0%	1.0%	64.7	-	93	293	927
3	Highland Avenue	Citrus Avenue to Sierra Avenue	4	13	20,640	45	0	2.0%	1.0%	66.4	-	137	434	1,373
4	Baseline Avenue	Etiwanda Avenue to I-15 SB Ramps	5	13	30,660	50	0	2.0%	1.0%	69.3	84	267	843	2,665
5	Baseline Avenue	I-15 SB Ramps to I-15 NB Ramps	10	10	31,910	50	0	2.0%	1.0%	70.2	104	330	1,044	3,301
6	Baseline Avenue	I-15 NB Ramps to Cherry Avenue	6	17	32,510	45	0	2.1%	1.1%	68.6	73	231	732	2,314
7	Baseline Avenue	Cherry Avenue to Beech Avenue	6	15	33,490	45	0	2.5%	1.6%	69.3	85	268	847	2,680
8	Baseline Avenue	Beech Avenue to Citrus Avenue	6	14	32,230	45	0	2.4%	1.4%	69.0	79	250	790	2,498
9	Baseline Avenue	Citrus Avenue to Sierra Avenue	6	13	29,890	45	0	2.3%	1.4%	68.6	72	227	719	2,274
10	Foothill Boulevard	I-15 SB Ramps to I-15 NB Ramps	7	12	46,850	50	0	2.3%	1.3%	71.6	145	459	1,453	4,594
11	Foothill Boulevard	I-15 NB Ramps to Etiwanda Avenue	6	24	39,220	50	0	2.5%	1.6%	71.1	128	406	1,284	4,060
12	Foothill Boulevard	Etiwanda Avenue to Beech Avenue	6	12	28,960	50	0	2.0%	1.0%	69.1	81	258	815	2,577
13	Foothill Boulevard	Cherry Avenue to Beech Avenue	6	12	30,040	50	0	2.3%	1.3%	69.6	91	287	907	2,867
14	Foothill Boulevard	Beech Avenue to Citrus Avenue	4	0	30,050	45	0	2.4%	1.4%	68.4	69	219	691	2,187
15	Foothill Boulevard	Citrus Avenue to Sierra Avenue	4	11	27,960	45	0	2.2%	1.3%	68.0	63	199	629	1,989
16	Arrow Route	Milliken Avenue to Etiwanda Avenue	4	11	39,570	50	0	2.1%	1.2%	70.4	110	349	1,104	3,492
17	Arrow Route	Eitwanda Avenue to Cherry Avenue	2	0	34,960	45	0	2.0%	1.0%	68.5	71	226	714	2,259
18	Arrow Route	Cherry Avenue to Beech Avenue	2	0	20,800	45	0	2.3%	1.4%	66.7	47	149	471	1,489
19	Arrow Route	Beech Avenue to Citrus Avenue	2	0	19,600	45	0	2.4%	1.4%	66.5	45	142	449	1,420
20	Arrow Route	Citrus Avenue to Sierra Avenue	4	10	18,300	35	0	2.3%	1.3%	63.8	-	76	240	760
21	Merrill Avenue	Cherry Avenue to Beech Avenue	2	0	10,580	40	0	2.4%	1.4%	62.7	-	59	187	592
22	Merrill Avenue	Beech Avenue to Citrus Avenue	2	0	10,500	40	0	2.4%	1.4%	62.7	-	59	186	588
23	Merrill Avenue	Citrus Avenue to Sierra Avenue	4	0	15,090	40	0	2.7%	1.8%	64.7	-	93	296	935
24	Randall Avenue	Cherry Avenue to Beech Avenue	2	0	21,540	40	0	4.0%	3.3%	67.6	57	181	573	1,812
25	Randall Avenue	Beech Avenue to Citrus Avenue	2	0	16,940	40	0	4.1%	3.4%	66.6	46	144	456	1,443
26	Randall Avenue	Citrus Avenue to Sierra Avenue	4	0	12,590	40	0	3.2%	2.4%	64.6	-	90	286	904
27	Fourth Street / San Bernardino Avenue	I-15 SB Ramps to I-15 NB Ramps	9	0	32,380	55	0	6.2%	5.2%	73.8	239	756	2,392	7,563
28	Fourth Street / San Bernardino Avenue	I-15 NB Ramps to Etiwanda Avenue	4	15	25,290	50	0	6.5%	5.6%	71.7	147	465	1,472	4,655
29	Fourth Street / San Bernardino Avenue	Etiwanda Avenue to Commerce Drive	4	16	20,710	55	0	6.6%	5.8%	71.7	147	463	1,466	4,634
30	Fourth Street / San Bernardino Avenue	Commerce Drive to Cherry Avenue	4	22	34,810	55	0	6.7%	5.9%	74.0	253	800	2,528	7,995
31	Fourth Street / San Bernardino Avenue	Cherry Avenue to Beech Avenue	2	13	16,880	40	0	6.2%	5.3%	68.0	63	199	628	1,987
32	Fourth Street / San Bernardino Avenue	Beech Avenue to Citrus Avenue	4	0	12,480	40	0	6.2%	5.3%	66.7	47	149	470	1,487
33	Fourth Street / San Bernardino Avenue	Citrus Avenue to Sierra Avenue	4	0	14,060	40	0	6.2%	5.3%	67.2	53	167	528	1,669
34	Valley Boulevard	Commerce Drive / I-10 Ramps to Cherry Avenue	4	12	21,570	45	0	6.0%	10.0%	71.4	137	435	1,374	4,345
35	Valley Boulevard	Cherry Avenue to Beech Avenue	4	12	29,730	45	0	6.1%	10.0%	72.8	190	601	1,900	6,007
36	Etiwanda Avenue	Baseline Avenue to Foothill Boulevard	4	10	12,860	45	0	6.1%	5.2%	67.7	59	186	588	1,859
37	Etiwanda Avenue	Foothill Boulevard to Arrow Route	4	0	24,060	50	0	6.4%	5.6%	71.4	137	434	1,374	4,344

#	Roadway	Segment	Lanes	Median Width	ADT Volume	Speed (mph)	Alpha Factor	Vehicle Mix: Medium Trucks	Vehicle Mix: Heavy Trucks	CNEL at 100 Feet	Distance from Centerline of Roadway to Contour: 70 CNEL	65 CNEL	60 CNEL	55 CNEL
38	Etiwanda Avenue	Arrow Route to San Bernardino Avenue / Fourth Street	2	13	26,730	55	0	6.5%	5.6%	72.6	182	574	1,816	5,742
39	Etiwanda Avenue	San Bernardino Avenue / Fourth Street to Valley Boulevard	4	20	26,200	50	0	6.2%	5.2%	71.7	148	467	1,478	4,674
40	Etiwanda Avenue	Valley Boulevard to I-10 WB Ramps	7	10	35,720	50	0	6.1%	5.2%	73.2	211	666	2,106	6,661
41	Etiwanda Avenue	I-10 WB Ramps to I-10 EB Ramps	6	5	34,010	50	0	6.1%	5.1%	72.8	192	608	1,922	6,079
42	Cherry Avenue	SR-210 WB Ramps to SR-210 EB Ramps	8	24	23,710	45	0	6.2%	5.2%	71.0	127	400	1,265	4,000
43	Cherry Avenue	SR-210 EB Ramps to Baseline Avenue	4	11	27,420	45	0	6.3%	5.4%	71.1	129	407	1,287	4,071
44	Cherry Avenue	Baseline Avenue to Foothill Boulevard	6	18	36,930	45	0	6.5%	5.6%	72.7	188	596	1,884	5,957
45	Cherry Avenue	Foothill Boulevard to Arrow Route	6	16	41,100	40	0	6.5%	5.7%	72.4	172	545	1,722	5,445
46	Cherry Avenue	Arrow Route to Whittram Avenue	6	16	43,080	40	0	6.6%	5.8%	72.6	182	575	1,819	5,753
47	Cherry Avenue	Whittram Avenue to Merrill Avenue	4	0	47,470	40	0	6.5%	5.7%	72.7	187	591	1,869	5,912
48	Cherry Avenue	Merrill Avenue to Randall Avenue	6	5	45,720	50	0	6.6%	5.8%	74.4	277	877	2,772	8,766
49	Cherry Avenue	Randall Avenue to San Bernardino Avenue	6	18	46,400	50	0	6.6%	5.7%	74.6	288	909	2,876	9,094
50	Cherry Avenue	San Bernardino Avenue to Valley Boulevard	6	0	39,140	50	0	6.5%	5.7%	73.7	234	739	2,336	7,387
51	Cherry Avenue	Valley Boulevard to I-10 WB Ramps	7	25	48,850	50	0	6.3%	5.4%	74.9	310	979	3,097	9,792
52	Cherry Avenue	I-10 WB Ramps to I-10 EB Ramps	8	5	46,730	50	0	6.2%	5.3%	74.5	284	899	2,842	8,988
53	Cherry Avenue	I-10 EB Ramps to Slover Avenue	8	25	43,080	45	0	6.1%	5.1%	73.6	227	719	2,272	7,185
54	Cherry Avenue	South of Slover Avenue	6	15	27,780	45	0	6.1%	5.1%	71.2	133	420	1,330	4,204
55	Beech Avenue	Highland Avenue to Baseline Avenue	4	5	16,190	40	0	2.0%	1.0%	64.1	-	81	257	814
56	Beech Avenue	Foothill Boulevard to Arrow Route	2	0	9,370	40	0	2.3%	1.3%	62.0	-	50	159	503
57	Beech Avenue	Arrow Route to Merrill Avenue	2	0	14,310	40	0	2.2%	1.2%	63.8	-	75	239	755
58	Beech Avenue	Merrill Avenue to Randall Avenue	2	0	9,780	40	0	2.3%	1.3%	62.3	-	53	168	531
59	Beech Avenue	Randall Avenue to San Bernardino Avenue	2	0	8,970	40	0	2.2%	1.2%	61.8	-	47	150	475
60	Beech Avenue	San Bernardino to Valley Boulevard	2	0	12,610	40	0	2.0%	1.0%	62.9	-	62	197	622
61	Citrus Avenue	SR-210 WB Ramps to SR-210 EB Ramps	8	43	28,640	55	0	2.1%	1.1%	71.0	125	396	1,251	3,957
62	Citrus Avenue	SR-210 EB Ramps to Baseline Avenue	4	14	27,090	40	0	2.1%	1.1%	66.6	-	144	456	1,441
63	Citrus Avenue	Baseline Avenue to Foothill Boulevard	4	0	20,950	40	0	2.1%	1.1%	65.4	-	109	346	1,094
64	Citrus Avenue	Foothill Boulevard to Arrow Route	4	0	23,340	40	0	2.1%	1.1%	65.8	-	121	384	1,214
65	Citrus Avenue	Arrow Route to Merrill Avenue	4	12	26,000	35	0	2.1%	1.1%	65.1	-	103	325	1,028
66	Citrus Avenue	Merrill Avenue to Randall Avenue	4	0	21,720	35	0	2.1%	1.2%	64.3	-	86	271	858
67	Citrus Avenue	Randall Avenue to San Bernardino Avenue	4	0	21,970	40	0	2.3%	1.3%	65.8	-	121	381	1,205
68	Citrus Avenue	San Bernardino Avenue to Valley Boulevard	4	0	22,660	45	0	2.1%	1.1%	66.8	48	152	481	1,521
69	Citrus Avenue	Valley Boulevard to I-10 WB Ramps	6	15	35,070	45	0	2.3%	1.4%	69.3	85	268	846	2,676
70	Citrus Avenue	I-10 WB Ramps to I-10 EB Ramps	7	0	28,300	45	0	2.2%	1.3%	68.2	66	209	662	2,095
71	Sierra Avenue	SR-210 WB Ramps to SR-210 EB Ramps	6	20	33,840	55	0	2.1%	1.1%	70.9	124	392	1,239	3,917
72	Sierra Avenue	SR-210 EB Ramps to Highland Avenue	6	24	47,130	50	0	2.1%	1.1%	71.4	138	437	1,381	4,367
73	Sierra Avenue	Highland Avenue to Baseline Avenue	6	15	33,070	50	0	2.1%	1.2%	69.9	97	306	968	3,062
74	Sierra Avenue	Baseline Avenue to Foothill Boulevard	4	0	26,800	40	0	2.2%	1.2%	66.5	45	143	451	1,428
75	Sierra Avenue	Foothill Boulevard to Arrow Route	4	10	27,850	30	0	2.2%	1.2%	64.8	-	96	304	960
76	Sierra Avenue	Arrow Route to Merrill Avenue	4	10	26,370	30	0	2.3%	1.4%	64.8	-	95	301	951
77	Sierra Avenue	Merrill Avenue to Randall Avenue	4	13	26,920	40	0	2.1%	1.1%	66.5	-	140	442	1,398
78	Sierra Avenue	Randall Avenue to San Bernardino Avenue	4	13	29,600	40	0	2.2%	1.3%	67.1	51	162	512	1,619
79	Sierra Avenue	San Bernardino Avenue to Valley Boulevard	6	12	35,590	40	0	2.2%	1.2%	68.0	63	199	629	1,988
80	Sierra Avenue	Valley Boulevard to I-10 Ramps	9	4	55,450	35	0	2.1%	1.1%	68.8	77	242	765	2,420

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/17/2022
Case Description: Demolition

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residential NE	Residential	1.0	1.0	1.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	1900.0	0.0
Dozer	No	40		81.7	1900.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day L10	Evening Lmax	Evening L10	Night Lmax	Night L10	Day Lmax	Day L10	Evening Lmax	Evening L10	Night Lmax	Night L10
Concrete Saw	58.0	54.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	50.1	49.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	58.0	55.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/17/2022
Case Description: Road Construction/Utilities

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residential NE	Residential	1.0	1.0	1.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	1900.0	0.0
Dozer	No	40		81.7	1900.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Excavator	49.1	45.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	50.1	46.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	50.1	48.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/17/2022
Case Description: Excavation/Mass Site Grading

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residential NE	Residential	1.0	1.0	1.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85.0		1900.0	0.0
Roller	No	20		80.0	1900.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Grader	53.4	49.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	48.4	41.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	53.4	50.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/17/2022
Case Description: Concrete Pour

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residential NE	Residential	1.0	1.0	1.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	1900.0	0.0
Pumps	No	50		80.9	1900.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Crane	49.0	41.0			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pumps	49.3	46.3			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	49.3	47.4			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/17/2022
Case Description: Paving/Landscap/Site Finishes

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residential NE	Residential	1.0	1.0	1.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85.0		1900.0	0.0
Tractor	No	40	84.0		1900.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Grader	53.4	49.4			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	52.4	48.4			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	53.4	52.0			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/17/2022
Case Description: Architectural Coating

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residential NE	Residential	1.0	1.0	1.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	1900.0	0.0
Compressor (air)	No	40		77.7	1900.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Compressor (air)	46.1	42.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compressor (air)	46.1	42.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	46.1	45.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/17/2022
Case Description: Demolition

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residential N	Residential	1.0	1.0	1.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	1270.0	0.0
Dozer	No	40		81.7	1270.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Concrete Saw	61.5	54.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	53.6	49.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	61.5	55.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/17/2022
Case Description: Road Construction/Utilities

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residential N	Residential	1.0	1.0	1.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	1270.0	0.0
Dozer	No	40		81.7	1270.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Excavator	52.6	48.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	53.6	49.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	53.6	52.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/17/2022
Case Description: Excavation/Mass Site Grading

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residential N	Residential	1.0	1.0	1.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85.0		1270.0	0.0
Roller	No	20		80.0	1270.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Grader	56.9	52.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	51.9	44.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	56.9	53.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/17/2022
Case Description: Concrete Pour

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residential N	Residential	1.0	1.0	1.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	1270.0	0.0
Pumps	No	50		80.9	1270.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Crane	52.5	44.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pumps	52.8	49.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	52.8	50.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/17/2022
Case Description: Paving/Landscap/Site Finishes

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residential N	Residential	1.0	1.0	1.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85.0		1270.0	0.0
Tractor	No	40	84.0		1270.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Grader	56.9	52.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	55.9	51.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	56.9	55.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/17/2022
Case Description: Architectural Coating

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residential N	Residential	1.0	1.0	1.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	1270.0	0.0
Compressor (air)	No	40		77.7	1270.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Compressor (air)	49.6	45.6			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compressor (air)	49.6	45.6			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	49.6	48.6			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/17/2022
Case Description: Demolition

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residential N	Residential	1.0	1.0	1.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	3000.0	0.0
Dozer	No	40		81.7	3000.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Concrete Saw	54.0	47.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	46.1	42.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	54.0	48.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/17/2022
Case Description: Road Construction/Utilities

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residential N	Residential	1.0	1.0	1.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	3000.0	0.0
Dozer	No	40		81.7	3000.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Excavator	45.1	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	46.1	42.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	46.1	44.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/17/2022
Case Description: Excavation/Mass Site Grading

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residential N	Residential	1.0	1.0	1.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85.0		3000.0	0.0
Roller	No	20		80.0	3000.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Grader	49.4	45.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	44.4	37.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	49.4	46.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/17/2022
Case Description: Concrete Pour

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residential N	Residential	1.0	1.0	1.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	3000.0	0.0
Pumps	No	50		80.9	3000.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Crane	45.0	37.0			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pumps	45.4	42.4			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	45.4	43.5			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/17/2022
Case Description: Paving/Landscap/Site Finishes

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residential N	Residential	1.0	1.0	1.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85.0		3000.0	0.0
Tractor	No	40	84.0		3000.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Grader	49.4	45.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	48.4	44.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	49.4	48.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/17/2022
Case Description: Architectural Coating

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residential N	Residential	1.0	1.0	1.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	3000.0	0.0
Compressor (air)	No	40		77.7	3000.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Compressor (air)	42.1	38.1			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compressor (air)	42.1	38.1			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	42.1	41.1			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/17/2022
Case Description: Demolition

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residential N	Residential	1.0	1.0	1.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	2000.0	0.0
Dozer	No	40		81.7	2000.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Night	Day	Calculated (dBA) Evening	Night	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Lmax
Equipment		Lmax	Leq	Lmax	Leq	Lmax	Leq			
Leq	Lmax	Leq								
Concrete Saw		57.5	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	N/A	N/A				
Dozer		49.6	45.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A				
	Total	57.5	51.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A				

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/17/2022
Case Description: Road Construction/Utilities

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residential N	Residential	1.0	1.0	1.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	2000.0	0.0
Dozer	No	40		81.7	2000.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Excavator	48.7	44.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	49.6	45.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	49.6	48.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/17/2022
Case Description: Excavation/Mass Site Grading

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residential N	Residential	1.0	1.0	1.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85.0		2000.0	0.0
Roller	No	20		80.0	2000.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Grader	53.0	49.0			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	48.0	41.0			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	53.0	49.6			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/17/2022
Case Description: Concrete Pour

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residential N	Residential	1.0	1.0	1.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	2000.0	0.0
Pumps	No	50		80.9	2000.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Crane	48.5	40.6			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pumps	48.9	45.9			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	48.9	47.0			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/17/2022
Case Description: Paving/Landscap/Site Finishes

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residential N	Residential	1.0	1.0	1.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85.0		2000.0	0.0
Tractor	No	40	84.0		2000.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Grader	53.0	49.0			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	52.0	48.0			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	53.0	51.5			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/17/2022
Case Description: Architectural Coating

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residential N	Residential	1.0	1.0	1.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	2000.0	0.0
Compressor (air)	No	40		77.7	2000.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Compressor (air)	45.6	41.6			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compressor (air)	45.6	41.6			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	45.6	44.7			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A