WHITTIER BOULEVARD BUSINESS PARK NOISE IMPACT ANALYSIS

City of Whittier
January 28, 2022
Revised June 16, 2023

ganddini

Traffic Engineering ● Transportation Planning ● Parking ● Noise & Vibration
Air Quality ● Global Climate Change ● Health Risk Assessment

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Project No. 19391

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EXECUTIVE SUMMARY

The purpose of this report is to provide an assessment of the noise impacts associated with development and operation of the proposed 12352 Whittier Boulevard Industrial project and to identify mitigation measures that may be necessary to reduce those impacts. The noise issues related to the proposed land use and development have been evaluated in light of applicable federal, state and local policies, including those of the City of Whittier.

Although this is a technical report, effort has been made to write the report clearly and concisely. A list of acronyms and glossary are provided in Appendix A and Appendix B of this report to assist the reader with technical terms related to noise analysis.

PROJECT LOCATION

The 13.49-acre project site is located at 12352 Whittier Boulevard in the City of Whittier, California. The project site is currently developed with a 213,430 square foot industrial building formerly used for manufacturing. The existing industrial building is no longer in operation.

PROJECT DESCRIPTION

The proposed project involves demolition of the existing building and construction of a new building for industrial and warehousing uses totaling 295,959 square feet of floor area ["the Project"]. Vehicular access is proposed at the Whittier Boulevard frontage road via two project driveways. The north project driveway will be for automobiles only and the south project driveway will service both automobiles and trucks.

PROJECT IMPACTS

Construction Impacts

Modeled unmitigated construction noise levels reached up to 68.9 dBA L_{eq} at the residential property line to the west, 72.5 dBA L_{eq} at the nearest commercial and industrial property lines to the north and south, 69.8 dBA L_{eq} at the nearest hospital property line to the southwest, 65.8 dBA L_{eq} at the nearest commercial property lines to the east, and up to 63.6 dBA L_{eq} at the nearest residential property lines to the east/southeast of the project site.

Construction noise sources are regulated within the City of Whittier Municipal Code Section 8.32.040(L) which limits construction activities to between the hours of 7:00 AM and 6:00 PM on weekdays and 8:00 AM and 5:00 PM on Saturdays.

The City of Whittier has not adopted a numerical threshold that identifies what a substantial increase would be. For purposes of this analysis, the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment (2018) criteria will be used to establish significance thresholds. For residential uses, the daytime noise threshold is 80 dBA L_{eq} averaged over an 8-hour period ($L_{eq\ (8\text{-}hr)}$; and the nighttime noise threshold is 70 dBA $L_{eq\ (8\text{-}hr)}$. For commercial uses, the daytime and nighttime noise threshold is 85 dBA $L_{eq\ (8\text{-}hr)}$. In compliance with the City's Code, construction would not occur during the noise-sensitive nighttime hours.

Impacts would be less than significant, and no mitigation is required. However, impacts related to construction noise will be further minimized with adherence to applicable Municipal Ordinances and implementation of the recommended best management practices presented in Section 8 of this report.

Noise Impacts to Off-Site Receptors Due to Project Generated Trips

The roadway noise level increases from project generated vehicular traffic were modeled utilizing a computer program that replicates the FHWA Traffic Noise Prediction Model FHWA-RD-77-108.

Project generated vehicle trips would not result in either a 5 dBA or more increase where the ambient noise level would change from normally acceptable to conditionally acceptable; a 3 dBA or more increase where the existing ambient noise would change from conditionally acceptable to normally unacceptable; or a 1 dBA or more increase where the existing ambient noise level is already normally unacceptable or would change from normally unacceptable to clearly unacceptable.

Five of the modeled roadway segments would have noise level increase between 1.77 and 7.46 dB at the road right-of way. These include the roadway segments of Whittier Boulevard Frontage Road west of Wittier Boulevard, Whittier Boulevard Frontage Road north of Mar Vista Street, Whittier Boulevard Frontage Road south of Mar Vista Street, Mar Vista Street from Whittier Boulevard Frontage Road to Whittier Boulevard, and Pacific Place west of Whittier Boulevard. However, none of these roadways would change from the normally acceptable noise level category as a result of the proposed project. Therefore, the change in noise level due to project generated vehicle traffic would be considered less than significant. No mitigation is required.

Noise Impacts to Off-Site Receptors Due to On-Site Operational Noise

Compliance with Noise Ordinance Standards

Project operational noise levels (in Leq and Lmax) at adjacent properties and nearby residential and commercial land uses are shown on Figures 8 and 9. The quietest hourly noise level measured near the existing residential land uses to the west (LTNM1, Figure 5) was 59 dBA Lmax. Measured nighttime maximum noise events at this location ranged between 61 and 67 dBA Lmax. Noise measurement data is provided in Appendix C. The project could result in a peak hour Leq of 56 dBA Leq/Lmax at a distance of 50 feet on offsite property. Occasional vehicle parking lot noise is not likely to result in a violation of City of Whittier Ordinance 8.32.040. Truck parking is not proposed near sensitive receptors. Impacts would be less than significant. No mitigation is required.

Compliance with General Plan Noise Standards

As discussed previously, sensitive land uses that may be affected by project noise include the existing residential uses to the northeast and southeast and the multi- and single-family residential uses to the west of the project site. Although not explicitly stated, the City of Whittier General Plan Noise Element implies that the Land Use Compatibility Chart (see Table 3) should be used to assess stationary noise source impacts from one land use to another. The Community Noise Equivalent Level (CNEL) was calculated for project operational noise and added to measured ambient noise levels to assess the project's consistency with the Noise Compatibility Guidelines. As shown in Table 11, project operational noise will not result in any increases in the CNEL at any of the nearest sensitive receptors and will not cause the ambient noise level to exceed the applicable "normally acceptable" sound level at any of the adjacent or nearby properties. This impact would be less than significant. No mitigation is required.

Groundborne Vibration Impacts

Residential structures associated with the nearest sensitive receptors are located approximately 37 feet to the west of the western project boundary and would have vibration levels of up to 0.117 PPV in/sec. However, the nearest off-site buildings are the commercial and industrial uses with structures located adjacent to the northern and southern project boundaries. In order to avoid any vibration impacts, the use of vibratory rollers and large bulldozers will be avoided within 25 feet of these buildings. This Best Management Practice has

been added as a note on the project plans. A small bulldozer can be utilized instead. Temporary vibration levels associated with project construction would be less than significant. No mitigation is required.

As shown in Table 5, groundborne vibration associated with project construction may result in annoyance if it exceeds 0.04 PPV in./sec. at a sensitive receptor. Annoyance is expected to be short-term, occurring only during site grading and preparation. Recommended best management practices related to vibration presented in Section 8 of this report will further minimize any impacts. No mitigation is required.

Construction equipment is anticipated to be located at a distance of at least 37 feet or more from any structure associated with a sensitive receptor. However, commercial and industrial structures are located adjacent to the northern and southern property lines.

RECOMMENDED BEST MANAGEMENT PRACTICES

In addition to adherence to the City of Whittier Municipal Code which limits the construction hours of operation, the following best management practices will be implemented to reduce construction noise and vibrations, emanating from the proposed project:

1. During all project site excavation and grading on-site, construction contractors will equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturer standards.

2. The contractor will place all stationary construction equipment so that emitted noise is directed away from the noise sensitive receptors nearest the project site.

3. Equipment will be shut off and not left to idle when not in use.

4. The contractor will locate equipment staging in areas that will create the greatest distance between construction-related noise/vibration sources and sensitive receptors nearest the project site during all project construction.

5. Jackhammers, pneumatic equipment and all other portable stationary noise sources will be shielded, and noise will be directed away from sensitive receptors.

6. The project proponent will mandate that the construction contractor prohibit the use of music or sound amplification on the project site during construction.

7. The construction contractor will limit haul truck deliveries to the same hours specified for construction equipment.

8. The use of vibratory rollers, large bulldozers, or other similar vibratory equipment will be avoided within 25 feet of existing structures. Small bulldozers can be used instead. This BMP will be included on the project plans.

1. INTRODUCTION

This section describes the purpose of this analysis and the project location, proposed development, and study area.

PURPOSE AND OBJECTIVES

The purpose of this report is to provide an assessment of the noise impacts resulting from development of the proposed 12352 Whittier Boulevard Industrial project and to identify mitigation measures that may be necessary to reduce those impacts. The noise issues related to the proposed land use and development have been evaluated in light of applicable federal, state and local policies, including those of the City of Whittier.

Although this is a technical report, effort has been made to write the report clearly and concisely. A list of acronyms and glossary are provided in Appendix A and Appendix B of this report to assist the reader with technical terms related to noise analysis.

PROJECT LOCATION

The 13.49-acre project site is located at 12352 Whittier Boulevard in the City of Whittier, California. The project site is currently developed with a 213,430 square foot industrial building formerly used for manufacturing. The existing industrial building is no longer in operation. A vicinity map showing the project location is provided on Figure 1.

PROJECT DESCRIPTION

The proposed project involves demolition of the existing building and construction of a new building for industrial and warehousing uses totaling 295,959 square feet of floor area [“the Project”]. Vehicular access is proposed at the Whittier Boulevard frontage road via two project driveways. The north project driveway will be for automobiles only and the south project driveway will service both automobiles and trucks. Figure 2 illustrates the project site plan.

Figure 1
Project Location Map

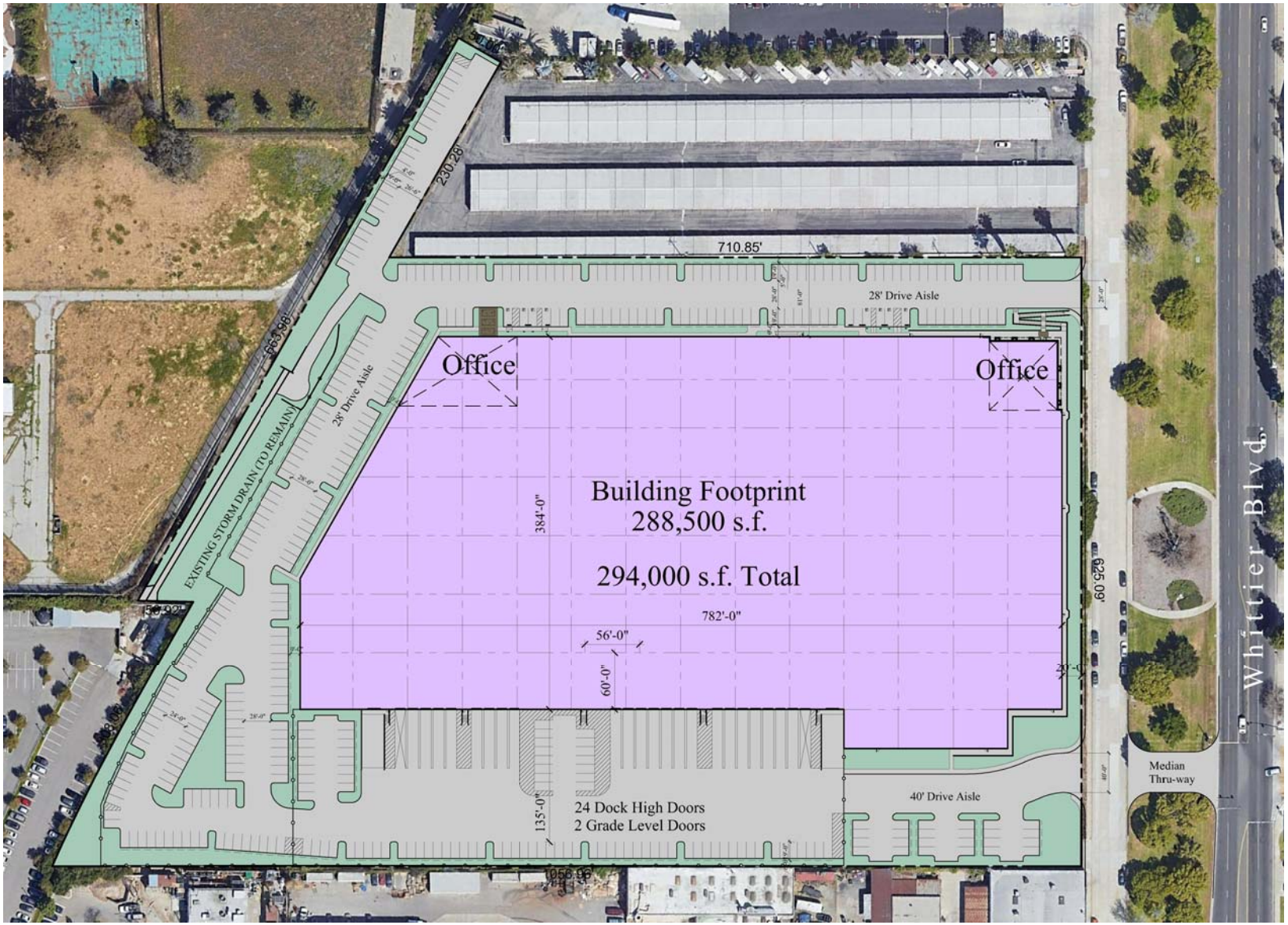


Figure 2
Site Plan

2. NOISE AND VIBRATION FUNDAMENTALS

NOISE FUNDAMENTALS

Sound is a pressure wave created by a moving or vibrating source that travels through an elastic medium such as air. Noise is defined as unwanted or objectionable sound. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and in extreme circumstances, hearing impairment.

Commonly used noise terms are presented in Appendix B. The unit of measurement used to describe a noise level is the decibel (dB). The human ear is not equally sensitive to all frequencies within the sound spectrum. Therefore, the "A-weighted" noise scale, which weights the frequencies to which humans are sensitive, is used for measurements. Noise levels using A-weighted measurements are written dB(A) or dBA.

From the noise source to the receiver, noise changes both in level and frequency spectrum. The most obvious is the decrease in noise as the distance from the source increases. The manner in which noise reduces with distance depends on whether the source is a point or line source as well as ground absorption, atmospheric effects and refraction, and shielding by natural and manmade features. Sound from point sources, such as air conditioning condensers, radiates uniformly outward as it travels away from the source in a spherical pattern. The noise drop-off rate associated with this geometric spreading is 6 dBA per each doubling of the distance (dBA/DD). Transportation noise sources such as roadways are typically analyzed as line sources, since at any given moment the receiver may be impacted by noise from multiple vehicles at various locations along the roadway. Because of the geometry of a line source, the noise drop-off rate associated with the geometric spreading of a line source is 3 dBA/DD.

Decibels are measured on a logarithmic scale, which quantifies sound intensity in a manner similar to the Richter scale used for earthquake magnitudes. Thus, a doubling of the energy of a noise source, such as a doubled traffic volume, would increase the noise levels by 3 dBA; halving of the energy would result in a 3 dBA decrease. Figure 3 shows the relationship of various noise levels to commonly experienced noise events.

Average noise levels over a period of minutes or hours are usually expressed as dBA L_{eq}, or the equivalent noise level for that period of time. For example, $L_{eq(3\text{-}hr)}$ would represent a 3-hour average. When no period is specified, a one-hour average is assumed.

Noise standards for land use compatibility are stated in terms of the Community Noise Equivalent Level (CNEL) and the Day-Night Average Noise Level (DNL). CNEL is a 24-hour weighted average measure of community noise. CNEL is obtained by adding five decibels to sound levels in the evening (7:00 PM to 10:00 PM), and by adding ten decibels to sound levels at night (10:00 PM to 7:00 AM). This weighting accounts for the increased human sensitivity to noise during the evening and nighttime hours. DNL is a very similar 24-hour average measure that weights only the nighttime hours.

It is widely accepted that the average healthy ear can barely perceive changes of 3 dBA; that a change of 5 dBA is readily perceptible, and that an increase (decrease) of 10 dBA sounds twice (half) as loud. This definition is recommended by the California Department of Transportation's Technical Noise Supplement to the Traffic Noise Analysis Protocol (2013).

VIBRATION FUNDAMENTALS

The way in which vibration is transmitted through the earth is called propagation. Propagation of earthborn vibrations is complicated and difficult to predict because of the endless variations in the soil through which waves travel. There are three main types of vibration propagation: surface, compression and shear waves. Surface waves, or Raleigh waves, travel along the ground's surface. These waves carry most of their energy along an expanding circular wave front, similar to ripples produced by throwing a rock into a pool of water.

Compression waves, or P-waves, are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal (i.e., in a "push-pull" fashion). P-waves are analogous to airborne sound waves. Shear waves, or S-waves, are also body waves that carry energy along an expanding spherical wave front. However, unlike P-waves, the particle motion is transverse or "side-to-side and perpendicular to the direction of propagation".

As vibration waves propagate from a source, the energy is spread over an ever-increasing area such that the energy level striking a given point is reduced with the distance from the energy source. This geometric spreading loss is inversely proportional to the square of the distance. Wave energy is also reduced with distance as a result of material damping in the form of internal friction, soil layering, and void spaces. The amount of attenuation provided by material damping varies with soil type and condition as well as the frequency of the wave.

Vibration amplitudes are usually expressed as either peak particle velocity (PPV) or the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous peak of the vibration signal in inches per second. The RMS of a signal is the average of the squared amplitude of the signal in vibration decibels (VdB), ref one micro-inch per second. The Federal Railroad Administration uses the abbreviation "VdB" for vibration decibels to reduce the potential for confusion with sound decibel.

PPV is appropriate for evaluating the potential of building damage and VdB is commonly used to evaluate human response. Decibel notation acts to compress the range of numbers required in measuring vibration. Similar to the noise descriptors, L_{eq} and L_{max} can be used to describe the average vibration and the maximum vibration level observed during a single vibration measurement interval. Figure 4 illustrates common vibration sources and the human and structural responses to ground-borne vibration. As shown in the figure, the threshold of perception for human response is approximately 65 VdB; however, human response to vibration is not usually substantial unless the vibration exceeds 70 VdB. Vibration tolerance limits for sensitive instruments such as magnetic resonance imaging (MRI) or electron microscopes could be much lower than the human vibration perception threshold.

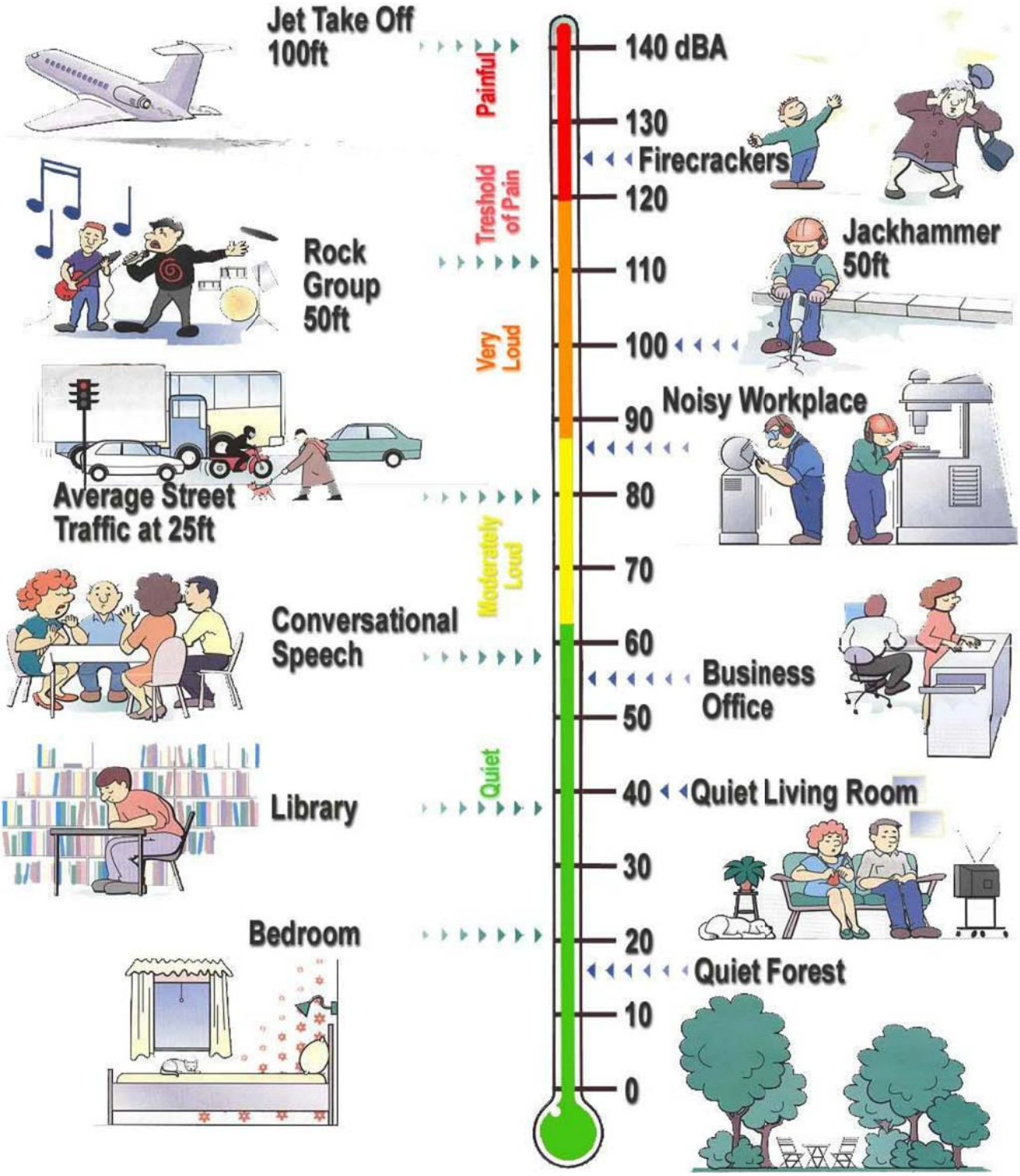
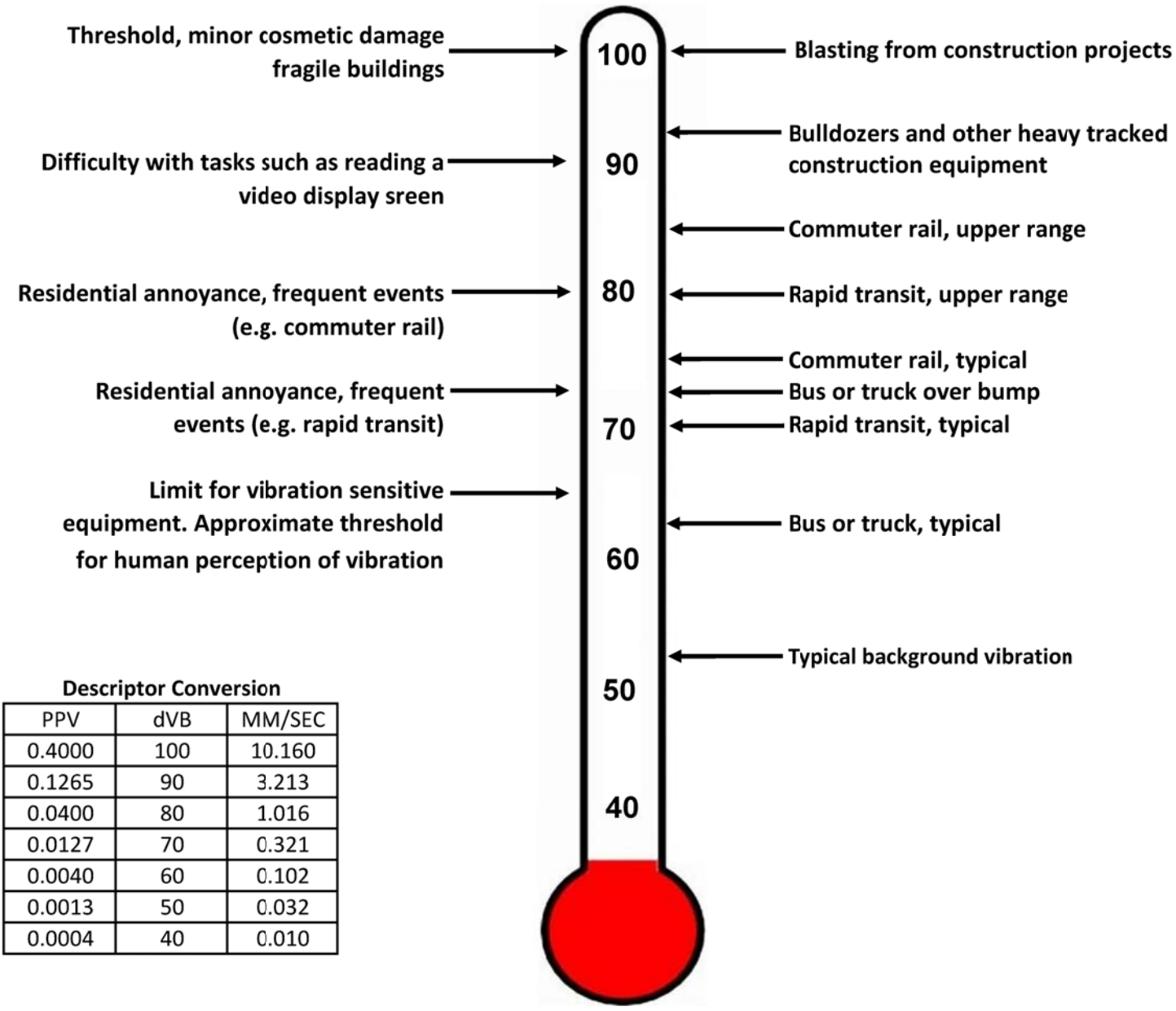


Figure 3
Weighted Sound Levels in Common Environments

Source: Bruel & Kjaer 2001



Descriptor Conversion

PPV	dVB	MM/SEC
0.4000	100	10.160
0.1265	90	3.213
0.0400	80	1.016
0.0127	70	0.321
0.0040	60	0.102
0.0013	50	0.032
0.0004	40	0.010

Source: FRA, 2012. Federal Railroad Administration High-Speed Ground Transportation Noise and Vibration Impact Assessment. Office of Railroad Policy Development, Washington, D.C. DOT/FRA/ORD-12/15. September.

Figure 4
Typical Levels of Groundborne Vibration

3. EXISTING NOISE ENVIRONMENT

EXISTING LAND USES AND SENSITIVE RECEPTORS

The project site is bordered by Whittier Boulevard to the east, commercial (self-storage) uses to the north, residential uses and a parking area for the Whittier Hospital to the west, and commercial uses to the south.

The State of California defines sensitive receptors as those land uses that require serenity or are otherwise adversely affected by noise events or conditions. Schools, libraries, churches, hospitals, single and multiple-family residential, including transient lodging, motels and hotel uses make up the majority of these areas. Sensitive land uses that may be affected by project noise include the existing multi- and single-family residential uses adjacent to the west, the multi-family residential uses approximately 335 feet southeast, and the single-family residential uses located approximately 700 feet northeast of the project site.

AMBIENT NOISE MEASUREMENTS

An American National Standards Institute (ANSI Section SI.4 2014, Class 1) Larson Davis model LxT sound level meter was used to document existing ambient noise levels. In order to document existing ambient noise levels in the project area, five (5) 15-minute daytime noise measurements were taken between 12:33 PM and 4:02 PM on September 21, 2021. In addition, one (1) long-term 24-hour noise measurement was also taken from September 21, 2021, to September 22, 2021. Field worksheets and noise measurement output data are included in Appendix C.

As shown on Figure 5, the noise meter was placed at the following locations:

- STNM1: represents the existing noise environment of the hospital use located to the southwest of the project site boundary. The noise meter was placed near the southwestern corner of the project site in the parking lot of the adjacent hospital use.

- STNM2: represents the existing noise environment of the commercial and industrial uses located adjacent to the south of the project site. The noise meter was placed just south of the project site's southern boundary near industrial/commercial buildings located at 12436 Putnam Street and 7635 Baldwin Place.

- STNM3: represents the existing noise environment of the commercial uses located to the east of the project site (east of Whittier Boulevard). The noise meter was placed between Whittier Boulevard and Whittier Boulevard just east of the project site.

- STNM4: represents the existing noise environment of the commercial self-storage facility located adjacent to the north of the project site. The noise meter was placed at the southwest corner of the public storage facility.

- STNM5: represents the existing noise environment of the multi- and single-family residential uses located adjacent to the west of the project site. The noise meter was placed between the residential buildings and the western boundary of the project site.

- LTNM1: represents the existing noise environment of the project site and the multi- and single-family residential uses located adjacent to the west of the project site. The noise meter was placed within the project site, near the project's western boundary.

Table 1 provides a summary of the short-term ambient noise data. Table 2 provides hourly interval ambient noise data from the long-term noise measurement. Short-term ambient noise levels were measured between

53.1 and 64 dBA L_{eq}. Long-term hourly noise measurement ambient noise levels ranged from 59 to 60.8 dBA L_{eq}. The dominant noise sources were from HVAC and other machinery equipment, vehicles traveling along Whittier Boulevard and other surrounding roadways, activities associated with the public storage facility, residential activity, and an emergency vehicle siren.

Table 1
Short-Term Noise Measurement Summary (dBA)

Daytime Measurements[1,2]								
Site Location	Time Started	Leq	Lmax	Lmin	L(2)	L(8)	L(25)	L(50)
STNM1	12:33 PM	58.5	63.6	57.4	60.7	59.6	58.6	58.3
STNM2	1:11 PM	63.5	75.9	60.5	69.5	64.3	62.9	62.3
STNM3	2:12 PM	64.0	82.4	52.0	71.5	65.5	62.3	60.1
STNM4	2:49 PM	53.1	67.6	43.8	63.1	56.0	51.7	49.3
STNM5	3:47 PM	53.5	61.9	48.7	58.5	54.2	53.6	51.8

Notes:
(1) See Figure 5 for noise measurement locations. Each noise measurement was performed over a 15-minute duration.
(2) Noise measurements performed on September 21, 2021.

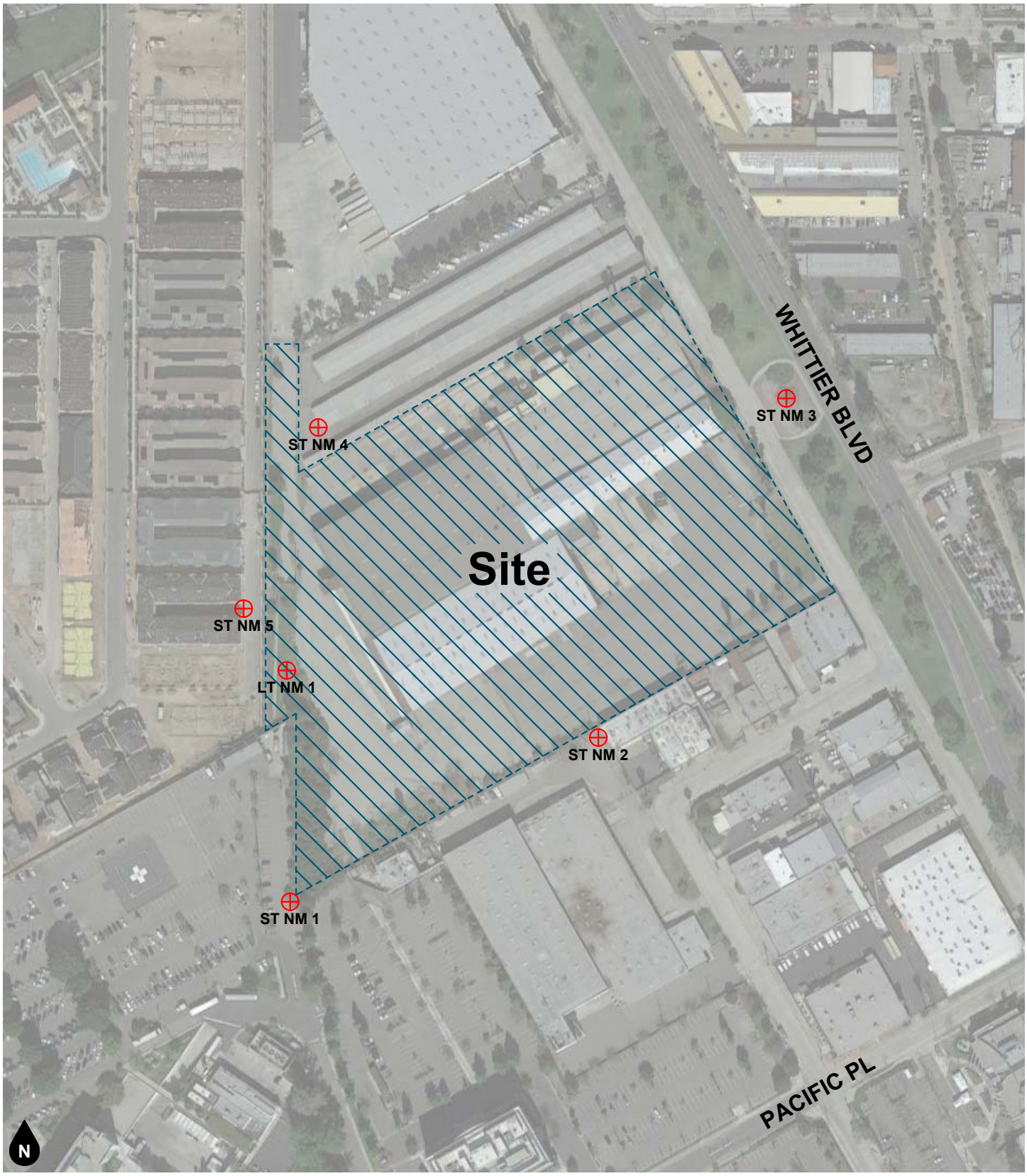
Table 2
Long-Term Noise Measurement Summary (dBA)

24-Hour Ambient Noise[1,2]								
Hourly Measurements	Time Started	Leq	Lmax	Lmin	L(2)	L(8)	L(25)	L(50)
Overall Summary	6:00 PM	60.0	79.3	55.9	62.0	60.9	60.3	59.7
1	6:00 PM	59.6	67.4	57.2	61.7	60.4	59.8	59.4
2	7:00 PM	59.5	64.4	57.5	61.5	60.4	59.7	59.3
3	8:00 PM	60.5	67.5	58.5	62.5	61.5	60.9	60.3
4	9:00 PM	60.2	70.1	58.7	62.4	60.8	60.2	59.9
5	10:00 PM	60.2	67.1	58.3	61.6	60.9	60.4	60.0
6	11:00 PM	60.4	64.3	59.3	61.7	61.0	60.6	60.3
7	12:00 AM	60.4	62.0	59.0	61.3	61.0	60.7	60.4
8	1:00 AM	59.1	62.8	57.8	60.2	59.9	59.4	59.1
9	2:00 AM	59.0	60.6	57.8	59.9	59.6	59.3	59.0
10	3:00 AM	59.7	64.8	58.6	60.6	60.3	59.9	59.6
11	4:00 AM	59.9	66.4	58.6	60.9	60.5	60.1	59.9
12	5:00 AM	60.3	65.6	59.0	61.3	60.8	60.5	60.2
13	6:00 AM	60.5	67.2	59.0	62.8	61.3	60.7	60.3
14	7:00 AM	60.3	65.9	58.2	62.7	61.2	60.5	60.1
15	8:00 AM	59.6	67.5	57.4	62.5	60.5	59.7	59.3
16	9:00 AM	59.6	62.6	57.6	61.2	60.5	59.8	59.4
17	10:00 AM	59.8	65.4	57.6	62.4	60.8	60.0	59.5
18	11:00 AM	60.0	66.6	57.7	62.1	61.1	60.3	59.8
19	12:00 PM	60.1	66.0	57.5	62.3	61.4	60.6	60.0
20	1:00 PM	60.4	71.1	56.9	64.8	61.7	60.5	59.8
21	2:00 PM	60.8	79.3	55.9	63.0	60.8	60.0	59.3
22	3:00 PM	59.3	68.8	56.8	61.7	60.4	59.6	59.1
23	4:00 PM	59.2	66.2	56.4	61.6	60.2	59.5	59.0
24	5:00 PM	59.8	64.6	56.9	62.2	60.9	60.1	59.6

Notes:

(1) See Figure 5 for noise measurement locations. Noise measurement was performed over a 24-hour duration.

(2) Noise measurement performed from September 21, 2021 to September 22, 2021.



Legend

⊕ NM 1 Noise Measurement Location

ST NM Short-Term Noise Measurement

LT NM Long-Term Noise Measurement

Figure 5
Noise Measurement Location Map

4. REGULATORY SETTING

FEDERAL REGULATION

Federal Noise Control Act of 1972

The U.S. Environmental Protection Agency (EPA) Office of Noise Abatement and Control was originally established to coordinate federal noise control activities. After its inception, EPA's Office of Noise Abatement and Control issued the Federal Noise Control Act of 1972, establishing programs and guidelines to identify and address the effects of noise on public health, welfare, and the environment. In response, the EPA published Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety (Levels of Environmental Noise). The Levels of Environmental Noise recommended that the Ldn should not exceed 55 dBA outdoors or 45 dBA indoors to prevent significant activity interference and annoyance in noise-sensitive areas.

In addition, the Levels of Environmental Noise identified five (5) dBA as an "adequate margin of safety" for a noise level increase relative to a baseline noise exposure level of 55 dBA Ldn (i.e., there would not be a noticeable increase in adverse community reaction with an increase of five dBA or less from this baseline level). The EPA did not promote these findings as universal standards or regulatory goals with mandatory applicability to all communities, but rather as advisory exposure levels below which there would be no risk to a community from any health or welfare effect of noise.

In 1981, EPA administrators determined that subjective issues such as noise would be better addressed at lower levels of government. Consequently, in 1982 responsibilities for regulating noise control policies were transferred to State and local governments. However, noise control guidelines and regulations contained in EPA rulings in prior years remain in place by designated Federal agencies, allowing more individualized control for specific issues by designated Federal, State, and local government agencies.

STATE REGULATIONS

State of California General Plan Guidelines 2017

Though not adopted by law, the State of California General Plan Guidelines 2017, published by the California Governor's Office of Planning and Research (OPR) (OPR Guidelines), provides guidance for the compatibility of projects within areas of specific noise exposure. The OPR Guidelines identify the suitability of various types of construction relative to a range of outdoor noise levels and provide each local community some flexibility in setting local noise standards that allow for the variability in community preferences. Findings presented in the Levels of Environmental Noise Document (EPA 1974) influenced the recommendations of the OPR Guidelines, most importantly in the choice of noise exposure metrics (i.e., Ldn or CNEL) and in the upper limits for the normally acceptable outdoor exposure of noise-sensitive uses.

The OPR Guidelines include a Noise and Land Use Compatibility Matrix which identifies acceptable and unacceptable community noise exposure limits for various land use categories. Where the "normally acceptable" range is used, it is defined as the highest noise level that should be considered for the construction of the buildings which do not incorporate any special acoustical treatment or noise mitigation. The "conditionally acceptable" or "normally unacceptable" ranges include conditions calling for detailed acoustical study prior to the construction or operation of the proposed project. The City of Whittier has adopted their own version of the State Land Use Compatibility Guidelines for land use planning and to assess potential transportation noise impacts to proposed land uses (see Table 3).

California Environmental Quality Act

The California Environmental Quality Act Guidelines (Appendix G) establishes thresholds for noise impact analysis. This noise study includes analysis of noise and vibration impacts necessary to assess the project in light of the following Appendix G Checklist Thresholds.

Would the project result in:

a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Substantial increases in ambient noise levels are usually associated with project construction noise (temporary) and project operational noise (permanent).

Project Construction Noise: Construction noise sources are regulated within the City of Whittier Municipal Code Section 8.32.040(L) which limits construction activities to between the hours of 7:00 AM and 6:00 PM on weekdays and 8:00 AM and 5:00 PM on Saturdays. Furthermore, Section 8.32.080 exempts permitted construction activities during daytime hours from noise level regulations.

Although construction activity may be exempt from the noise standards in the City's Municipal Code, CEQA requires that potential noise impacts still be evaluated for significance.

The City of Whittier has not adopted a numerical threshold that identifies what a substantial increase would be. For purposes of this analysis, the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment (2018) criteria will be used to establish significance thresholds. The FTA provides reasonable criteria for assessing construction noise impacts based on the potential for adverse community reaction. For residential uses, the daytime noise threshold is 80 dBA L_{eq} averaged over an 8-hour period ($L_{eq\ (8\text{-}hr)}$; and the nighttime noise threshold is 70 dBA $L_{eq\ (8\text{-}hr)}$. For commercial uses, the daytime and nighttime noise threshold is 85 dBA $L_{eq\ (8\text{-}hr)}$. In compliance with the City's Code, construction would not occur during the noise-sensitive nighttime hours.

Project Operational Noise (permanent): The proposed project has the potential to generate on-site and off-site noise.

On-Site Generated Noise

City of Whittier Ordinance 8.32.040 also limits noise that is allowed to emanate from one property to another. Specifically, late night disturbances of any kind that are plainly audible by inhabitants or occupants of any adjacent or neighboring residential properties or units or are plainly audible at a distance of 50 feet from a real property boundary, that occur during nighttime hours, will be prima facie evidence of violation of this subsection. The equivalent noise level over a one-hour period (Leq) and the maximum expected noise event (Lmax) were modeled in SoundPLAN to determine the project's consistency with this ordinance.

The City of Whittier General Plan Noise Element implies that the use of their Land Use Compatibility Chart (see Table 3) should be used to assess stationary noise source impacts from one land use to another. The Community Noise Equivalent Level (CNEL) was calculated for project operational noise and added to measured ambient noise levels to assess the project's consistency with the Noise Compatibility Guidelines.

Off-Site Generated Noise

For off-site project generated noise, as stated in the City of Whittier General Plan Update and Housing Element Update Draft Environmental Impact Report (July 9, 2021), increases in ambient noise along affected roadways due to project generated vehicle traffic is considered substantial if they increase ambient noise levels at off-site locations by:

- 5 dBA or more where the ambient noise level would change from normally acceptable to conditionally acceptable;
- 3 dBA or more where the existing ambient noise would change from conditionally acceptable to normally unacceptable; or
- 1 dBA or more where the existing ambient noise level is already normally unacceptable or would change from normally unacceptable to clearly unacceptable.

b) Generate excessive groundborne vibration or groundborne noise levels?

As shown in Table 4, the threshold at which there is a risk to "architectural" damage to historic and some older buildings is a peak particle velocity (PPV) of 0.25, at older residential structures a PPV of 0.3, and at new residential structures a PPV of 0.5. Table 5 shows that a PPV of 0.04 is the threshold at which groundborne vibration becomes distinctly perceptible in regard to annoyance. Impacts would be significant if construction activities result in groundborne vibration of 0.25 PPV or higher at a sensitive receptor.

California Department of Transportation (Caltrans)

The California Department of Transportation has published one of the seminal works for the analysis of ground-borne noise and vibration relating to transportation- and construction-induced vibrations and although the project is not subject to these regulations, it serves as useful tools to evaluate vibration impacts. These guidelines recommend that a standard of 0.25 inches per second (in/sec) PPV not be exceeded for the protection of historic and some old buildings (California Department of Transportation, 2020).

LOCAL REGULATIONS

Envision Whittier General Plan

The City of Whittier has adopted their own version of the State Land Use Compatibility Guidelines for land use planning and to assess potential transportation noise impacts to proposed land uses (see Table 3).

The Envision Whittier General Plan Public Safety, Noise and Health Element (adopted October 12, 2021) contains goals and policies related to noise within the City. The General Plan goals and policies which apply to the proposed project are presented below.

Goal 10 Noise levels community-wide that allow residents to enjoy quiet neighborhoods and outdoor activities.

PSNH-10.1 Work toward the separation of buffering major roadways from noise-sensitive land uses such as residences, care facilities, schools, and hospitals.

PSNH-10.2 Consider steps to correct existing noise problems. Avoid future problems through design measures such as buffers and barriers or through abatement procedures.

PSNH-10.3 Control at their sources and sounds which exceed acceptable community noise levels.

PSNH-10.4 Consider noise impacts as part of the development review process, particularly the location of parking, recreational activities, crowd noises, ingress/egress/loading, and refuse collection areas relative to surrounding residential development and other noise-sensitive land uses.

PSNH-10.5 Use the provisions in the City's noise ordinance to abate unlawful noise.

PSNH-10.6 Enforce Municipal Code noise controls for construction projects.

PSNH-10.7 Minimize new residential or other noise-sensitive land use development in noise-impacted areas unless effective mitigation measures are incorporated into the project design to reduce outdoor activity area noise levels to a "normally acceptable" community noise equivalent level (CNEL).

PSNH-10.8 Require industrial uses and trucking-related uses to incorporate buffers that maintain acceptable noise levels for surrounding uses and areas.

PSNH-10.9 Regulate the use of sound-amplifying equipment to prevent impacts on sensitive receptors.

City of Whittier Municipal Code

Chapter 8.32 Noise Control of the City of Whittier Municipal Code contains the City's noise standards.

Section 8.32.040 Loud, Annoying, and Unnecessary Noises – Enumerated.

The City Council finds the following to be loud, annoying and unnecessary noises, which are hereby declared to be in violation of Chapter 8.32 Noise Control of the City's municipal code; this list is deemed illustrative and will not be construed in any way to be an exclusive or all-inclusive list of the noises prohibited by Chapter 8.32, it being the intent and purpose of Chapter 8.32 to include and prohibit all noises of the character described in this section. Where no specific distance is set for the determination of audibility, reference to noise disturbance will be deemed to mean plainly audible at a distance of 100 feet from the real property boundary of the source of the sound, if the sound occurs on privately owned property, or from the source of the sound, if the sound occurs on the public right-of-way, public property, or private property open to the public. References to "adjacent" or "neighboring" residences or units in this section will mean those residences or units located next to or in close proximity to the source of the noise, and no specific distance standard will be required for such locations.

G. Loudspeakers/Public Address System. The using, operating or playing, or permitting to be played, used or operated, of any radio receiving set, musical instrument, audio system, loudspeaker, sound amplifying equipment or other machine or device for the producing or reproducing of sound, which casts sound upon the streets for the purpose of commercial or noncommercial advertising, or attracting the attention of the public to any building, structure or attraction (1) such that the sound there from creates a loud, annoying or unnecessary noise across a residential area; or (2) on a public right-of-way or public space, except as provided in Section 8.32.080.

H. Radios, Musical Instruments and Similar Devices. The using, operating or playing, or the permitting to be played, used or operated, any stereo, radio receiving set, musical instrument, audio system, television set or any like machine or device that produces or reproduces sound, in such manner as to disturb at any time, the peace, quiet and comfort of the neighboring inhabitants, with louder volume than is necessary for convenient hearing for the person or persons who are in the room, vehicle, chamber or place in which the machine or device is operated and who are voluntarily listening thereto. The operation of any such machine or device during nighttime hours in such a manner as to be plainly audible by inhabitants or occupants of any adjacent or neighboring residential properties or units, or plainly audible at a distance of 50 feet from any nonresidential building, structure, vehicle or place in which it is located, will be prima facie evidence of a violation of this subsection.

L. Erection or demolition of buildings, excluding owner resident additions or remodeling, and the grading and excavation of land including the use of blasting, the startup and use of heavy equipment such as dump trucks and graders and the use of jack hammers except on weekdays between the hours of 7:00 AM and 6:00 PM and on Saturdays 8:00 AM to 5:00 PM. The city manager may waive any or all of the provisions of this subsection in cases of urgent necessity, or in the interest of public health and safety. The provisions of this subsection may also be waived or modified pursuant to a conditional use permit or other development entitlement processed and issued in accordance with the applicable city requirements and procedures.

M. Late night disturbances of any kind that are plainly audible by inhabitants or occupants of any adjacent or neighboring residential properties or units or are plainly audible at a distance of 50 feet from a real property boundary, that occur during nighttime hours, will be prima facie evidence of violation of this subsection.

Section 8.32.080 Exemptions and Waivers.

The following uses of any activity will be exempt from noise level regulations:

D. Any noise resulting from activities of a temporary duration permitted by law and/or for which a waiver has been granted by the director.

E. Refuse collection trucks provided the trucks do not collect refuse between the hours of 9:00 PM and 5:00 AM.

F. Permitted construction during daytime hours.

Table 3
Noise and Land Use Compatibility Guidelines

Land Use Category	Community Noise Exposure Limit (CNEL or DNL, DBA)			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential - Low-Density Single-Family, Duplex, Mobile Homes	60	70	75	75+
Residential - Multi-Family	65	70	75	75+
Transient Lodging- Motels, Hotels	65	70	80	80+
Schools, Libraries, Churches, Hospitals, Nursing Homes	70	70	80	80+
Auditoriums, Concert Halls, Amphitheaters	N/A	70	N/A	70+
Sports Arenas, Outdoor Spectator Sports	N/A	N/A	75	75+
Playgrounds, Neighborhood Parks	70	70	75	75+
Golf Courses, Riding Stables, Water Recreation, Cemeteries	75	N/A	80	80+
Office Buildings, Business, Commercial, and Professional	70	77.5	77.5+	N/A
Industrial, Manufacturing, Utilities, Agriculture	75	80	80+	N/A

Source: Envision Whittier General Plan Table PSNH-11 Noise, 2021.

Table 4
Guideline Vibration Damage Potential Threshold Criteria

Structure Condition	Maximum PPV (in/sec)	
	Transient Sources[1]	Continuous/Frequent Intermittent Sources[1]
Extremely fragile historic buildings, ruins, anceint monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: California Department of Transportation. Transportation and Construction Vibration Guidance Manual, Chapter 7 Table 19, April 2020.

Notes:

(1) Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Table 5
Guideline Vibration Annoyance Potential Criteria

Human Response	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.10
Severe	2.0	0.4

Source: California Department of Transportation. Transportation and Construction Vibration Guidance Manual, Chapter 7 Table 20, April 2020.

Notes:
(1) Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

5. ANALYTICAL METHODOLOGY AND MODEL PARAMETERS

This section discusses the analysis methodologies used to assess noise impacts.

CONSTRUCTION NOISE MODELING

Construction noise associated with the proposed project was calculated at the sensitive receptor locations, utilizing methodology presented in the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (2018) together with several key construction parameters including: distance to each sensitive receiver, equipment usage, percent usage factor, and baseline parameters for the project site. Distances to receptors were based on the acoustical center of the project site. The equipment used to calculate the construction noise levels for each phase were based on the assumptions provided in the CalEEMod modeling in the Air Quality, Global Climate Change, HRA, and Energy Impact Analysis prepared for the proposed project (Ganddini Group, Inc., 2023). For construction noise purposes, the distance measured from the project site to sensitive receptors was assumed to be the acoustical center of the project site to the property line of residential properties with existing residential buildings. Construction noise worksheets are provided in Appendix D.

FEDERAL HIGHWAY ADMINISTRATION (FHWA) TRAFFIC NOISE PREDICTION MODEL

The roadway noise level increases from project generated vehicular traffic were modeled utilizing a computer program that replicates the FHWA Traffic Noise Prediction Model FHWA-RD-77-108.

The FHWA Traffic Noise Prediction Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). In California the national REMELs are substituted with the California Vehicle Noise (Calveno) Emissions Levels.[1] Adjustments are then made to the REMEL to account for: total average daily traffic volumes, roadway classification (i.e., collector, secondary, major or arterial), the roadway active width (i.e., distance between the center of the outermost travel lanes on each side of the roadway), travel speed, truck mix (i.e., percentage of automobiles, medium trucks, and heavy trucks in the traffic volume), roadway grade and site conditions (hard or soft ground surface relating to the absorption of the ground, pavement, or landscaping). Research conducted by Caltrans identifies that the use of soft site conditions is appropriate for the application of the FHWA traffic noise prediction model.[2] Therefore, surfaces adjacent to all modeled roadways were assumed to have a "soft site". Possible reductions in noise levels due to intervening topography and buildings were not accounted for in this analysis.

Existing and Existing Plus Project average daily vehicle trips were calculated from the PM intersection turning movement volumes provided in the *Whittier Boulevard Business Park Traffic Impact Analysis* (Ganddini Group, January 24, 2022).[3] Neither the City of Whittier or the County of Los Angeles have vehicle/truck mixes and D/E/N splits for use in acoustical studies; therefore, vehicle/truck mixes and D/E/N splits for use in acoustical studies published by the Riverside County Department of Industrial Hygiene were utilized for noise modeling. Existing Plus Project vehicle mixes were calculated by adding the proposed project trips to existing conditions. FHWA spreadsheets are included in Appendix E.

[1] California Department of Transportation Environmental Program, Office of Environmental Engineering. Use of California Vehicle Noise Reference Energy Mean Emission Levels (Calveno REMELs) in FHWA Highway Traffic Noise Prediction. September 1995. TAN 95-03.

[2] California Department of Transportation. Traffic Noise Attenuation as a Function of Ground and Vegetation Final Report. June 1995. FHWA/CA/TL-95/23.

[3] The total AM and PM peak hour trips in the most recent project trip generation, as provided in the *12352 Whittier Boulevard Industrial Project Trip Generation Memorandum* (Ganddini Group, June 13, 2023), are lower than the total AM and PM peak hour trips provided in the *Whittier Boulevard Business Park Traffic Impact Analysis* (Ganddini Group, January 24, 2022). Therefore, to provide a conservative analysis, the PM intersection turning movement volumes from the 2022 Traffic Impact Analysis were utilized to estimate project generated average daily vehicle trips.

SoundPLAN Noise Model

The SoundPLAN acoustical modeling software was utilized to model project operational worst-case stationary noise impacts from the proposed project to adjacent sensitive uses (e.g., residences). SoundPLAN is capable of evaluating stationary noise sources (e.g., parking lots, drive-thru menus, carwash equipment, vacuums, etc.) and much more. The SoundPLAN software utilizes algorithms (based on the inverse square law) to calculate noise level projections. The software allows the user to input specific noise sources, spectral content, sound barriers, building placement, topography, and sensitive receptor locations. In addition to the information provided below, noise modeling input and outputs assumptions are provided in Appendix F.

The peak hour Leq, Lmax, and CNEL associated with project operation was modeled utilizing representative sound levels in the SoundPLAN model. Modeled noise sources include parking lot noise, loading/unloading areas and HVAC equipment. All noise sources were modeled to be in full operation. This is a conservative modeling effort, given that in actuality, not all noise sources are not in operation continuously for an entire hour.

Parking Lot Noise

Parking lot noise was calculated using SoundPLAN methodology. Specifically, the traffic volume of the parking lot is entered with the number of moves per parking, the hour and the number of parking bays. The user defines whether the parking lots are for automobiles, motorcycles, or trucks, and the emission level of a parking lot is automatically adjusted accordingly. The values for the number of parking moves for each time slice is the number of parking moves per reference unit (most often per parking bay), averaged for the hour[4].

SoundPLAN utilizes parking lot noise emission levels from the 6th revised edition of the parking lot study "Recommendations for the Calculation of Sound Emissions of Parking Areas, Motorcar Centers and Bus Stations as well as of Multi-Story Car Parks and Underground Car Parks" published by the Bavarian Landesamt für Umwelt provides calculation methods to determine the emissions of parking lots.

The parking lot emission table documents the reference level (Lw, ref) from the parking lot study.

Lw, ref = Lw0 + KPA + KI + KD + KStrO + 10 log(B) [dB(A)]

With the following parameters:

Lw0 = Basic sound power, sound power level of one motion / per hour on P+R areas = 63 dB(A)
KPA = Surcharge parking lot type
KI = Surcharge for impulse character
KD = Surcharge for the traffic passaging and searching for parking bays in the driving lanes 2,5 * lg (f * B - 9)
f = Parking bays per unit of the reference value
B = Reference value
KStrO = Surcharge for the road surface
B = Reference value

Car Alarm/Truck Backout Alarm

A point noise source was modeled in the parking area nearest to residential land uses to the west to represent a loud car radio[5] with a sound power level 97.7 dB and a point noise source was modeled in the loading area closest to the residential land uses to the west to represent a truck back up alarm[4], with a sound power level of 103 dB.

[4] SoundPLAN Essential 4.0 Manual. SoundPLAN International, LLC. May 2016.

[5] SoundPLAN Sound Library accessed January 19, 2022.

Loading/Unloading

The proposed loading area was modeled using a sound reference level of loading/unloading of pallet truck loading 92 dB per meter.[4]

Mechanical Equipment (HVAC Units) Noise

A noise reference level of 67.7 dBA at 3 feet (sound power level of 78.7 dB) was utilized to represent rooftop 5 Ton Carrier HVAC units.[6] A rooftop HVAC plan is not available at the time of this analysis so the exact location and number of units per building were estimated. A total of 75 rooftop units were modeled on the proposed rooftop. The noise source height for each HVAC unit was assumed at 1 meter above the roof top. Roof top is assumed to be approximately 12.2 meters (~40 feet) above grade.

[6] MD Acoustics, LLC Noise Measurement Data for RTU –Carrier 50TFQ0006 and car alarm.

6. IMPACT ANALYSIS

This impact discussion analyzes the potential for noise and/or groundborne vibration impacts to cause the exposure of a person to, or generation of, noise levels in excess of established City of Whittier standards related to construction, operation, and transportation noise related impacts to, or from, the proposed project.

IMPACTS RELATED TO CONSTRUCTION NOISE

The construction phases for the proposed project are anticipated to include demolition, site preparation, grading, building construction, paving and architectural coating. Assumptions for the phasing, duration, and required equipment for the construction of the proposed project were obtained from the project applicant.

The existing residential uses to the west and southeast, the hospital use to the southwest, and the commercial and industrial uses to the north, east, and south of the project site may be affected by short-term noise impacts associated with construction noise. Construction noise will vary depending on the construction process, type of equipment involved, location of the construction site with respect to sensitive receptors, the schedule proposed to carry out each task (e.g., hours and days of the week) and the duration of the construction work.

A summary of noise level data for a variety of construction equipment compiled by the U.S. Department of Transportation is presented in Table 6. Typical operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three to four minutes at lower power settings.

Construction noise associated with the proposed project was calculated utilizing methodology presented in the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (2018) together with several key construction parameters including: distance to each sensitive receiver, equipment usage, percent usage factor, and baseline parameters for the project site. Distances to receptors were based on the acoustical center of the proposed construction activity. Construction noise levels were calculated for each phase. Anticipated noise levels during each construction phase are presented in Table 7. Worksheets for each phase are included as Appendix D.

A comparison of existing noise levels and existing plus project construction noise levels are presented in Table 7. STNM5 was chosen to represent noise levels at the property line of the residential uses to the west, STNM2 was chosen to represent noise levels at the commercial and industrial property lines to the north and south of the project site, STNM1 was chosen to represent the hospital property lines to the southwest of the project site, and STNM3 was chosen to represent the residential and commercial property lines of properties to the east and southeast of the project site.

Modeled unmitigated construction noise levels reached up to 68.9 dBA L_{eq} at the residential property line to the west, 72.5 dBA L_{eq} at the nearest commercial and industrial property lines to the north and south, 69.8 dBA L_{eq} at the nearest hospital property line to the southwest, 65.8 dBA L_{eq} at the nearest commercial property lines to the east, and up to 63.6 dBA L_{eq} at the nearest residential property lines to the east/southeast of the project site. The expected duration of each phase and the loudest sound level at the nearest receptor (commercial and industrial uses adjacent to the north and south) is presented below:

Phase	Number of Days	Maximum dBA Leq
Demolition	52	70.9
Site Preparation	9	71.8
Grading	42	72.5
Building Construction	153	70.1
Paving	42	64.5
Architectural Coating	94	58.1

As discussed earlier, construction noise sources are regulated within the City of Whittier Municipal Code Section 8.32.040(L) which limits construction activities to between the hours of 7:00 AM and 6:00 PM on weekdays and 8:00 AM and 5:00 PM on Saturdays.

As stated previously, per FTA daytime construction noise levels should not exceed 80 dBA L_{eq} for an 8-hour period at residential uses and 85 dBA L_{eq} for an 8-hour period at commercial uses. Therefore, project construction would not be anticipated to exceed the FTA thresholds for either residential or commercial uses. Further, with compliance with the City's Municipal Code Section 8.32.040(L), construction would not occur during the noise-sensitive nighttime hours.

Impacts would be less than significant, and no mitigation is required. However, impacts related to construction noise will be further minimized with adherence to the above Municipal Ordinances and implementation of the recommended best management practices presented in Section 8 of this report.

NOISE IMPACTS TO OFF-SITE RECEPTORS DUE TO PROJECT GENERATED TRIPS

During operation, the proposed project is expected to generate approximately 998 average daily trips with 101 trips during the AM peak-hour and 101 trips during the PM peak-hour.[7] A project generated traffic noise level was modeled utilizing the FHWA Traffic Noise Prediction Model - FHWA-RD-77-108. Traffic noise levels were calculated at the right of way from the centerline of the analyzed roadway. The modeling is theoretical and does not take into account any existing barriers, structures, and/or topographical features that may further reduce noise levels. Therefore, the levels are shown for comparative purposes only to show the difference in with and without project conditions. Roadway input parameters including average daily traffic volumes (ADTs), speeds, and vehicle distribution data is shown in Table 8. The potential off-site noise impacts caused by an increase of traffic from operation of the proposed project on the nearby roadways were calculated for the following scenarios:

Existing Year (without Project): This scenario refers to existing year traffic noise conditions and is demonstrated in Table 9 and Table 10.

Existing Year (With Project): This scenario refers to existing year plus project traffic noise conditions and is demonstrated in Table 9.

Existing Year (With Project): This scenario refers to existing plus Project alternative with mar vista street extension noise conditions and is demonstrated in Table 10.

As shown in Table 9, modeled Existing traffic noise levels range between 58-77 dBA CNEL at the right-of-way of each modeled roadway segment; and the modeled Existing Plus Project traffic noise levels range between 65-77 dBA CNEL at the right-of-way of each modeled roadway segment. In addition, as shown in Table 10, modeled Existing traffic noise levels range between 58-77 dBA CNEL at the right-of-way of each modeled roadway segment; and the modeled Existing Plus Project Alternative With Mar Vista Street Extension traffic noise levels range between 60-77 dBA CNEL at the right-of-way of each modeled roadway segment.

As discussed previously, increases in ambient noise along affected roadways due to project generated vehicle traffic is considered substantial if they increase ambient noise levels at off-site locations by:

- 5 dBA or more where the ambient noise level would change from normally acceptable to conditionally acceptable;

[7] The total AM and PM peak hour trips in the most recent project trip generation, as provided in the *12352 Whittier Boulevard Industrial Project Trip Generation Memorandum* (Ganddini Group, June 13, 2023), are lower than the total AM and PM peak hour trips provided in the *Whittier Boulevard Business Park Traffic Impact Analysis* (Ganddini Group, January 24, 2022). Therefore, to provide a conservative analysis, the PM intersection turning movement volumes from the 2022 Traffic Impact Analysis were utilized to estimate project generated average daily vehicle trips. Please see Section 5, Analytical Methodology and Model Parameters for further details.

- 3 dBA or more where the existing ambient noise would change from conditionally acceptable to normally unacceptable; or
- 1 dBA or more where the existing ambient noise level is already normally unacceptable or would change from normally unacceptable to clearly unacceptable.

As shown in Table 9 and Table 10, the roadway segments of Whittier Boulevard Frontage Road west of Wittier Boulevard, Whittier Boulevard Frontage Road north of Mar Vista Street, Whittier Boulevard Frontage Road south of Mar Vista Street, Mar Vista Street from Whittier Boulevard Frontage Road to Whittier Boulevard, and Pacific Place west of Whittier Boulevard have noise level increases above 1 dB. These roadway segments and their associated noise level increases have been discussed individually below.

- The existing land uses adjacent to the segment of Whittier Boulevard Frontage Road west of Wittier Boulevard are industrial uses. The modeled existing noise level is 58.25 dBA CNEL and the modeled existing plus project noise levels would be 64.84 dBA CNEL resulting in a 6.59 dB increase under the Project scenario and 59.53 dBA CNEL resulting in a 1.28 dB increase under the Project Alternative with Mar Vista Street Extension Scenario. As shown in Table 3, noise levels of up to 75 dBA CNEL are considered normally acceptable for industrial uses. Therefore, with incorporation of the proposed project, noise levels would still fall in the normally acceptable noise level category for industrial uses. No mitigation is necessary, impacts would be considered less than significant.

- The existing land uses adjacent to the segment of Whittier Boulevard Frontage Road north of Mar Vista Street are industrial uses. The modeled existing noise level is 58.51 dBA CNEL and the modeled existing plus project noise levels would be 65.97 dBA CNEL resulting in a 7.46 dB increase under the Project scenario and 64.2 dBA CNEL resulting in a 5.69 dB increase under the Project Alternative with Mar Vista Street Extension Scenario. As shown in Table 3, noise levels of up to 75 dBA CNEL are considered normally acceptable for industrial uses. Therefore, with incorporation of the proposed project, noise levels would still fall in the normally acceptable noise level category for industrial uses. No mitigation is necessary, impacts would be considered less than significant.

- The existing land uses adjacent to the segment of Whittier Boulevard Frontage Road south of Mar Vista Street include commercial and industrial uses. The modeled existing noise level is 58.51 dBA CNEL and the modeled existing plus project noise levels would be 66.71 dBA CNEL resulting in an 8.2 dB increase under the Project scenario and 64.28 dBA CNEL resulting in a 5.77 dB increase under the Project Alternative with Mar Vista Street Extension Scenario. As shown in Table 3, noise levels of up to 70 dBA CNEL are considered normally acceptable for commercial uses and up to 75 dBA CNEL are considered normally acceptable for industrial uses. Therefore, with incorporation of the proposed project, noise levels would still fall in the normally acceptable noise level category for commercial and industrial uses. No mitigation is necessary, impacts would be considered less than significant.

- There are no existing land uses adjacent to the segment of Mar Vista Street from Whittier Boulevard Frontage Road to Whittier Boulevard. In addition, this roadway segment is not an existing roadway segment and; therefore, is only included in the Project Alternative with Mar Vista Street Extension Scenario. The modeled existing noise level is 68.05 dBA CNEL and the modeled existing plus project noise levels would be 69.82 dBA CNEL resulting in a 1.77 dB increase under the Project Alternative with Mar Vista Street Extension Scenario. As there are no sensitive receptors located adjacent to this roadway segment, no mitigation is necessary, and impacts would be considered less than significant.

- The existing land uses adjacent to the segment of Pacific Place west of Whittier Boulevard include commercial and industrial uses. The modeled existing noise level is 64.79 dBA CNEL and the modeled existing plus project noise levels would be 68.45 dBA CNEL resulting in a 3.66 dB increase under the Project scenario and 66.97 dBA CNEL resulting in a 2.18 dB increase under the Project Alternative with Mar Vista Street Extension Scenario. As shown in Table 3, noise levels of up to 70 dBA CNEL are considered normally acceptable for commercial uses and up to 75 dBA CNEL are considered normally

acceptable for industrial uses. Therefore, with incorporation of the proposed project, noise levels would still fall in the normally acceptable noise level category for commercial and industrial uses. No mitigation is necessary, impacts would be considered less than significant.

Therefore, although the five modeled roadway segments listed above have noise levels increases above 1 dB, none of the five roadways would change from the normally acceptable noise level category as a result of the proposed project. A change in noise level as a result of project generated vehicle traffic would be considered less than significant. No mitigation is required.

NOISE IMPACTS TO OFF-SITE RECEPTORS DUE TO ON-SITE OPERATIONAL NOISE

Compliance with Noise Ordinance Standards

City of Whittier Ordinance 8.32.040 also limits noise that is allowed to emanate from one property to another. Specifically, late night disturbances of any kind that are plainly audible by inhabitants or occupants of any adjacent or neighboring residential properties or units or are plainly audible at a distance of 50 feet from a real property boundary, that occur during nighttime hours, will be prima facie evidence of violation of this subsection. The equivalent noise level over a one-hour period (Leq) and the maximum expected noise event (Lmax) were modeled in SoundPLAN to determine the project's consistency with this ordinance.

Project operational noise levels (in Leq and Lmax) at adjacent properties and nearby residential and commercial land uses are shown on Figures 8 and 9. The quietest hourly noise level measured near the existing residential land uses to the west (LTNM1, Figure 5) was 59 dBA Lmax. Measured nighttime maximum noise events at this location ranged between 61 and 67 dBA Lmax. Noise measurement data is provided in Appendix C. The project could result in a peak hour Leq of 56 dBA Leq/Lmax at a distance of 50 feet on offsite property. Occasional vehicle parking lot noise is not likely to result in a violation of City of Whittier Ordinance 8.32.040. Truck parking is not proposed near sensitive receptors. Impacts would be less than significant. No mitigation is required.

Compliance with General Plan Noise Standards

As discussed previously, sensitive land uses that may be affected by project noise include the existing residential uses to the northeast, southeast, and west of the project site. Although not explicitly stated, the City of Whittier General Plan Noise Element implies that the use of their Land Use Compatibility Chart (see Table 3) should be used to assess stationary noise source impacts from one land use to another. The Community Noise Equivalent Level (CNEL) was calculated for project operational noise and added to measured ambient noise levels to assess the project's consistency with the Noise Compatibility Guidelines. As shown in Table 11, project operational noise will not result in any increases in the CNEL at any of the nearest sensitive receptors and will not cause the ambient noise level to exceed the applicable "normally acceptable" sound level at any of the adjacent or nearby properties. This impact would be less than significant. No mitigation is required.

GROUNDBORNE VIBRATION IMPACTS

There are several types of construction equipment that can cause vibration levels high enough to annoy persons in the vicinity and/or result in architectural or structural damage to nearby structures and improvements. For example, as shown in Table 11, a vibratory roller could generate up to 0.21 PPV at a distance of 25 feet; and operation of a large bulldozer (0.089 PPV) at a distance of 25 feet (two of the most vibratory pieces of construction equipment). Groundborne vibration at sensitive receptors associated with this equipment would drop off as the equipment moves away. For example, as the vibratory roller moves further than 100 feet from the sensitive receptors, the vibration associated with it would drop below 0.0026 PPV. It should be noted that these vibration levels are reference levels and may vary slightly depending upon soil type and specific usage of each piece of equipment.

Annoyance to Persons

The primary effect of perceptible vibration is often a concern. However, secondary effects, such as the rattling of a china cabinet, can also occur, even when vibration levels are well below perception. Any effect (primary perceptible vibration, secondary effects, or a combination of the two) can lead to annoyance. The degree to which a person is annoyed depends on the activity in which they are participating at the time of the disturbance. For example, someone sleeping, or reading will be more sensitive than someone who is running on a treadmill. Reoccurring primary and secondary vibration effects often lead people to believe that the vibration is damaging their home, although vibration levels are well below minimum thresholds for damage potential. (California Department of Transportation, 2020)

As shown in Table 5, vibration becomes distinctly perceptible to people in buildings at a PPV of 0.04 in/sec.

The nearest off-site structures are the commercial and industrial buildings located adjacent to the northern and southern project boundaries. Therefore, the use of a vibratory roller and/or large bulldozer could be considered annoying to the industrial and commercial receptors to the north and south. Recommended measures have been provided in Section 8 of this report to reduce potential vibration annoyance related impacts.

The buildings associated with the nearest sensitive receptors, the multi-family residential uses to the west, are located as close as approximately 37 feet to the west of the western project boundary. At 37 feet, use of a vibratory roller would be expected to generate a PPV of 0.117 in/sec and a bulldozer would be expected to generate a PPV of 0.049 in/sec. However, considering that the residential land uses range between 8 and 10 feet lower in elevation, the use of vibratory equipment on the project site is not likely to affect these land uses.

Structures associated with the hospital use to the southwest of the project site are located as close as approximately 250 feet to the southwest of the nearest project boundary. At 250 feet, use of a vibratory roller would be expected to generate a PPV of 0.007 in/sec and a bulldozer would be expected to generate a PPV of 0.003 in/sec. Use of a vibratory roller and/or a large bulldozer would not be considered annoying to the hospital receptor to the southwest.

Annoyance is expected to be short-term, occurring only during site grading and preparation. Recommended measures to reduce potential impacts related to annoyance are presented in Section 8 of this report.

Architectural Damage

Vibration generated by construction activity generally has the potential to damage structures. This damage could be structural damage, such as cracking of floor slabs, foundations, columns, beams, or wells, or cosmetic architectural damage, such as cracked plaster, stucco, or tile. (California Department of Transportation, 2020)

As shown in Table 4, the threshold at which there is a risk of “architectural” damage to historic structures is a peak particle velocity (PPV) of 0.25 in/sec, and a PPV of 0.3 in/sec at older residential structures. There is a risk of architectural damage at newer residential structures and modern commercial/industrial buildings at a PPV of 0.5 in/sec.

Residential structures associated with the nearest sensitive receptors are located approximately 37 feet to the west of the western project boundary and would have vibration levels of up to 0.117 PPV in/sec. However, the nearest off-site buildings are the commercial and industrial uses with structures located adjacent to the northern and southern project boundaries. In order to avoid any vibration impacts, the use of vibratory rollers and large bulldozers will be avoided within 25 feet of these buildings. This Best Management Practice has been added as a note on the project plans. A small bulldozer can be utilized instead. Temporary vibration levels associated with project construction would be less than significant. No mitigation is required.

Recommended best management practices related to vibration presented in Section 8 of this report will further minimize any impacts. No mitigation is required. Vibration worksheets are provided in Appendix G.

Table 6 (1 of 2)
CA/T Equipment Noise Emissions and Acoustical Usage Factor Database

Equipment Description	Impact Device?	Acoustical Use Factor (%)	Spec. Lmax @ 50ft (dBA, slow)	Actual Measured Lmax @ 50ft (dBA, slow)	No. of Actual Data Samples (Count)
All Other Equipment > 5 HP	No	50	85	-N/A-	0
Auger Drill Rig	No	20	85	84	36
Backhoe	No	40	80	78	372
Bar Bender	No	20	80	-N/A-	0
Blasting	Yes	-N/A-	94	-N/A-	0
Boring Jack Power Unit	No	50	80	83	1
Chain Saw	No	20	85	84	46
Clam Shovel (dropping)	Yes	20	93	87	4
Compactor (ground)	No	20	80	83	57
Compressor (air)	No	40	80	78	18
Concrete Batch Plant	No	15	83	-N/A-	0
Concrete Mixer Truck	No	40	85	79	40
Concrete Pump Truck	No	20	82	81	30
Concrete Saw	No	20	90	90	55
Crane	No	16	85	81	405
Dozer	No	40	85	82	55
Drill Rig Truck	No	20	84	79	22
Drum Mixer	No	50	80	80	1
Dump Truck	No	40	84	76	31
Excavator	No	40	85	81	170
Flat Bed Truck	No	40	84	74	4
Forklift[2,3]	No	50	n/a	61	n/a
Front End Loader	No	40	80	79	96
Generator	No	50	82	81	19
Generator (<25KVA, VMS signs)	No	50	70	73	74
Gradall	No	40	85	83	70
Grader	No	40	85	-N/A-	0
Grapple (on backhoe)	No	40	85	87	1
Horizontal Boring Hydr. Jack	No	25	80	82	6
Hydra Break Ram	Yes	10	90	-N/A-	0
Impact Pile Driver	Yes	20	95	101	11
Jackhammer	Yes	20	85	89	133
Man Lift	No	20	85	75	23
Mounted Impact hammer (hoe ram)	Yes	20	90	90	212
Pavement Scarafier	No	20	85	90	2
Paver	No	50	85	77	9
Pickup Truck	No	50	85	77	9
Paving Equipment	No	50	85	77	9
Pneumatic Tools	No	50	85	85	90

Table 6 (2 of 2)
CA/T Equipment Noise Emissions and Acoustical Usage Factor Database

Equipment Description	Impact Device?	Acoustical Use Factor (%)	Spec. Lmax @ 50ft (dBA, slow)	Actual Measured Lmax @ 50ft (dBA, slow)	No. of Actual Data Samples (Count)
Pumps	No	50	77	81	17
Refrigerator Unit	No	100	82	73	3
Rivit Buster/chipping gun	Yes	20	85	79	19
Rock Drill	No	20	85	81	3
Roller	No	20	85	80	16
Sand Blasting (Single Nozzle)	No	20	85	96	9
Scraper	No	40	85	84	12
Shears (on backhoe)	No	40	85	96	5
Slurry Plant	No	100	78	78	1
Slurry Trenching Machine	No	50	82	80	75
Soil Mix Drill Rig	No	50	80	-N/A-	0
Tractor	No	40	84	-N/A-	0
Vacuum Excavator (Vac-truck)	No	40	85	85	149
Vacuum Street Sweeper	No	10	80	82	19
Ventilation Fan	No	100	85	79	13
Vibrating Hopper	No	50	85	87	1
Vibratory Concrete Mixer	No	20	80	80	1
Vibratory Pile Driver	No	20	95	101	44
Warning Horn	No	5	85	83	12
Welder/Torch	No	40	73	74	5

Notes:

(1) Source: FHWA Roadway Construction Noise Model User's Guide January 2006.

(2) Warehouse & Forklift Noise Exposure - NoiseTesting.info Carl Stautins, November 4, 2014 http://www.noisetesting.info/blog/carl-strautins/page-3/

(3) Data provided Leq as measured at the operator. Sound Level at 50 feet is calculated using Inverse Square Law.

Table 7
Construction Noise Levels (dBA L_{eq})

Phase	Receptor Location	Existing Ambient Noise Levels (dBA Leq)[2]	Construction Noise Levels (dBA Leq)
Demolition	Residential to West	53.5	67.3
	Commercial to North and South	63.5	70.9
	Hospital to Southwest	58.5	68.2
	Commercial to East	64.0	64.2
	Multi-family Residential to East/Southeast	64.0	62.0
Site Preparation	Residential to West	53.5	68.3
	Commercial to North and South	63.5	71.8
	Hospital to Southwest	58.5	69.1
	Commercial to East	64.0	65.2
	Multi-family Residential to East/Southeast	64.0	62.9
Grading	Residential to West	53.5	68.9
	Commercial to North and South	63.5	72.5
	Hospital to Southwest	58.5	69.8
	Commercial to East	64.0	65.8
	Multi-family Residential to East/Southeast	64.0	63.6
Building Construction	Residential to West	53.5	66.5
	Commercial to North and South	63.5	70.1
	Hospital to Southwest	58.5	67.3
	Commercial to East	64.0	63.4
	Multi-family Residential to East/Southeast	64.0	61.2
Paving	Residential to West	53.5	61.0
	Commercial to North and South	63.5	64.5
	Hospital to Southwest	58.5	61.8
	Commercial to East	64.0	57.9
	Multi-family Residential to East/Southeast	64.0	55.6
Architectural Coating	Residential to West	53.5	54.6
	Commercial to North and South	63.5	58.1
	Hospital to Southwest	58.5	55.4
	Commercial to East	64.0	51.5
	Multi-family Residential to East/Southeast	64.0	49.2

Notes:

(1) Construction noise worksheets are provided in Appendix D.

(2) Per measured existing ambient noise levels. STNM5 used for residential receptors to the west, STNM2 used for commercial/industrial receptors to the north and south, STNM1 used for the hospital receptor to the southwest, and STNM3 used for the residential and commercial receptors to the east and southeast.

Table 8
Project Average Daily Traffic Volumes and Roadway Parameters

Roadway	Segment	Average Daily Traffic Volume[1]			Posted Travel Speeds (MPH)	Site Conditions
		Existing	Existing Plus Project	Existing Plus Project Alternative with Mar Vista Extension		
Whittier Blvd Frontage Road	West of Whittier Blvd	820	1,340	870	35	Hard
	North of Mar Vista St	870	1,580	1,290	35	Hard
	South of Mar Vista St	870	1,740	1,300	35	Hard
Whittier Blvd	North of Whittier Blvd Frontage Rd	22,660	23,350	23,300	45	Hard
	South of Whittier Blvd Frontage Rd	22,080	22,250	22,670	45	Hard
	North of Mar Vista St	20,650	20,820	21,240	45	Hard
	South of Mar Vista St	18,760	18,930	19,030	45	Hard
	North of Pacific Place	18,660	18,830	18,930	45	Hard
	South of Pacific Place	16,260	16,960	16,960	45	Hard
	North of Washington Blvd	11,550	12,120	12,120	45	Hard
	South of Washington Blvd	16,790	16,950	16,950	45	Hard
Mar Vista Street	Whittier Blvd Frontage Rd to Whittier Blvd Rd[2]	11,700	-	12,610	30	Hard
	East of Whittier Blvd	5,590	-	5,640	30	Hard
Pacific Place	West of Whittier Blvd	3,700	4,570	4,130	35	Hard
Washington Blvd (Santa Fe Springs Road)	West of Whittier Blvd	26770	27,150	27,150	45	Hard
	East of Whittier Blvd	23270	23300	23430	40	Hard

Vehicle Distribution (Light Mix)[3]			
Motor-Vehicle Type	Daytime % (7AM-7PM)	Evening % (7PM-10PM)	Night % (10PM-7AM)
Automobiles	75.56	13.96	10.49
Medium Trucks	48.91	2.17	48.91
Heavy Trucks	47.30	5.41	47.30

Vehicle Distribution (Heavy Mix)[3]			
Motor-Vehicle Type	Daytime % (7AM-7PM)	Evening % (7PM-10PM)	Night % (10PM-7AM)
Automobiles	75.54	14.02	10.43
Medium Trucks	48.00	2.00	50.00
Heavy Trucks	48.00	2.00	50.00

Notes:

(1) Existing and project average daily traffic volumes calculated from the PM peak hour intersection turning movement volumes provided in the Whittier Boulevard Business Park Traffic Impact Analysis prepared by Ganddini Group, Inc. (January 2022).

(2) There is no existing traffic data along the segment of Mar Vista Street from Whittier Boulevard Frontage Road to Whittier Boulevard. Therefore, the existing average daily traffic for this segment was estimated by use of the existing measured ambient noise level (See Table 1, STNM3).

(3) Existing vehicle percentages are based on the Riverside County Industrial Hygiene Letter for Traffic Noise.

Table 9
Change in Existing Noise Levels Along Roadways as a Result of Project (dBA CNEL)

Roadway	Segment	Distance from roadway centerline to right-of-way (feet)[2]	Modeled Noise Levels (dBA CNEL)[1]				
			Existing Without Project at right-of-way	Existing Plus Project at right-of-way	Change in Noise Level	Exceeds Standards[3]	Increase of 1 dB or More?
Whittier Blvd Frontage Rd	West of Whittier Blvd	30	58.25	64.84	6.59	No	Yes
	North of Mar Vista St	30	58.51	65.97	7.46	No	Yes
	South of Mar Vista St	30	58.51	66.71	8.20	No	Yes
Whittier Blvd	North of Whittier Blvd Frontage Rd	60	75.67	75.92	0.25	Yes	No
	South of Whittier Blvd Frontage Rd	60	75.56	75.62	0.06	Yes	No
	North of Mar Vista St	60	75.27	75.33	0.06	Yes	No
	South of Mar Vista St	60	74.85	74.92	0.07	No	No
	North of Pacific Place	60	74.83	74.90	0.07	Yes	No
	South of Pacific Place	60	74.23	74.57	0.34	Yes	No
	North of Washington Blvd	60	72.74	73.14	0.40	Yes	No
	South of Washington Blvd	60	74.37	74.45	0.08	Yes	No
Pacific Place	West of Whittier Blvd	30	64.79	68.45	3.66	No	Yes
Washington Blvd (Santa Fe Springs Rd)	West of Whittier Blvd	55	76.77	76.89	0.12	Yes	No
	East of Whittier Blvd	55	75.42	75.43	0.01	Yes	No

Notes:

(1) Exterior noise levels calculated 5 feet above pad elevation, perpendicular to subject roadway.

(2) Right of way per the City of Whittier General Plan Circulation Element.

(3) Per the City of Whittier normally acceptable standard for existing adjacent uses (see Table 3).

Table 10

Change in Existing Noise Levels Along Roadways as a Result of Project Alternative With Mar Vista Street Extension (dBA CNEL)

Roadway	Segment	Distance from roadway centerline to right-of-way (feet)[2]	Modeled Noise Levels (dBA CNEL)[1]				
			Existing Without Project at right-of-way	Existing Plus Project at right-of-way	Change in Noise Level	Exceeds Standards[3]	Increase of 1 dB or More?
Whittier Blvd Frontage Rd	West of Whittier Blvd	30	58.25	59.53	1.28	No	Yes
	North of Mar Vista St	30	58.51	64.20	5.69	No	Yes
	South of Mar Vista St	30	58.51	64.28	5.77	No	Yes
Whittier Blvd	North of Whittier Blvd Frontage Rd	60	75.67	75.90	0.23	Yes	No
	South of Whittier Blvd Frontage Rd	60	75.56	75.77	0.21	Yes	No
	North of Mar Vista St	60	75.27	75.50	0.23	Yes	No
	South of Mar Vista St	60	74.85	74.97	0.12	No	No
	North of Pacific Place	60	74.83	74.94	0.11	Yes	No
	South of Pacific Place	60	74.23	74.57	0.34	Yes	No
	North of Washington Blvd	60	72.74	73.14	0.40	Yes	No
	South of Washington Blvd	60	74.37	74.45	0.08	Yes	No
Mar Vista St	Whittier Blvd Frontage Rd to Whittier Blvd	33	68.05	69.82	1.77	No	Yes
	East of Whittier Blvd	33	64.85	65.09	0.24	Yes	No
Pacific Place	West of Whittier Blvd	30	64.79	66.97	2.18	No	Yes
Washington Blvd (Santa Fe Springs Rd)	West of Whittier Blvd	55	76.77	76.89	0.12	Yes	No
	East of Whittier Blvd	55	75.42	75.48	0.06	Yes	No

Notes:

(1) Exterior noise levels calculated 5 feet above pad elevation, perpendicular to subject roadway.

(2) Right of way per the City of Whittier General Plan Circulation Element.

(3) Per the City of Whittier normally acceptable standard for existing adjacent uses (see Table 3).

Table 11
Comparison of Existing and Project CNEL at Receptor Locations

Receptor[1]	Existing CNEL[2]	Project Operational CNEL[3]	Combined CNEL
1	65	50	65
2	65	55	65
3	65	33	65
4	65	64	65
5	65	62	65
6	65	53	65

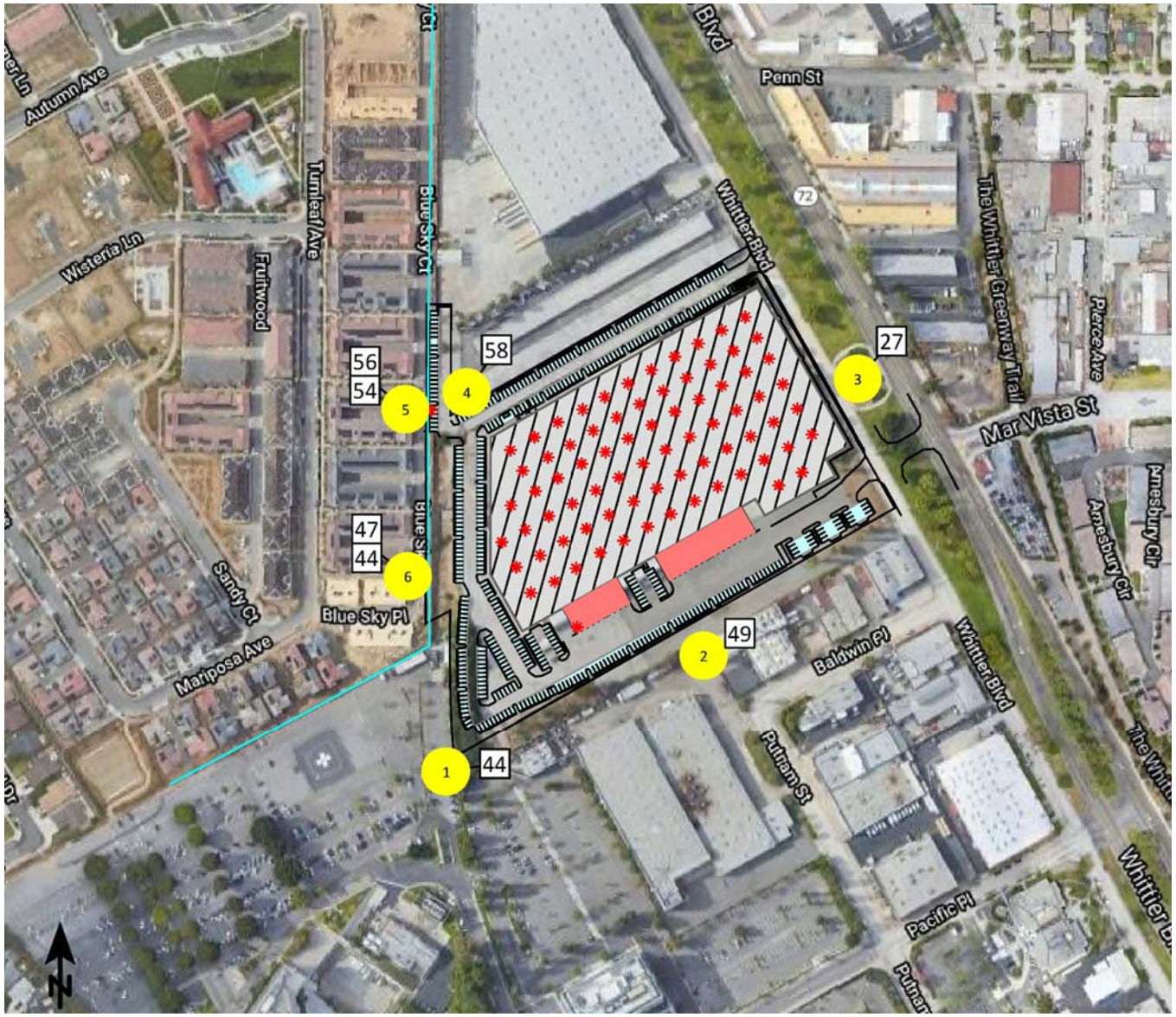
Notes:

1. Refer to Receptor Locations shown on Figure 6.
2. As measured (see Table 2).
3. As modeled (see Figure 6).

Table 12
Construction Equipment Vibration Source Levels

Equipment		PPV at 25 ft, in/sec	Approximate Lv* at 25 ft
Pile Driver (impact)	upper range	1.518	112
	typical	0.644	104
Pile Driver (sonic)	upper range	0.734	105
	typical	0.170	93
clam shovel drop (slurry wall)		0.202	94
Hydromill (slurry wall)	in soil	0.008	66
	in rock	0.017	75
Vibratory Roller		0.210	94
Hoe Ram		0.089	87
Large Bulldozer		0.089	87
Caisson Drilling		0.089	87
Loaded Trucks		0.076	86
Jackhammer		0.035	79
Small Bulldozer		0.003	58

Source: Federal Transit Administration: Transit Noise and Vibration Impact Assessment Manual, 2018.
*RMS velocity in decibels, VdB re 1 micro-in/sec



Signs and symbols

- Existing wall
- Receiver
- Point source
- Area source
- Parking lot
- 49 2nd Floor
- 50 1st Floor

dBA/CNEL

Figure 6
Operational Noise Levels

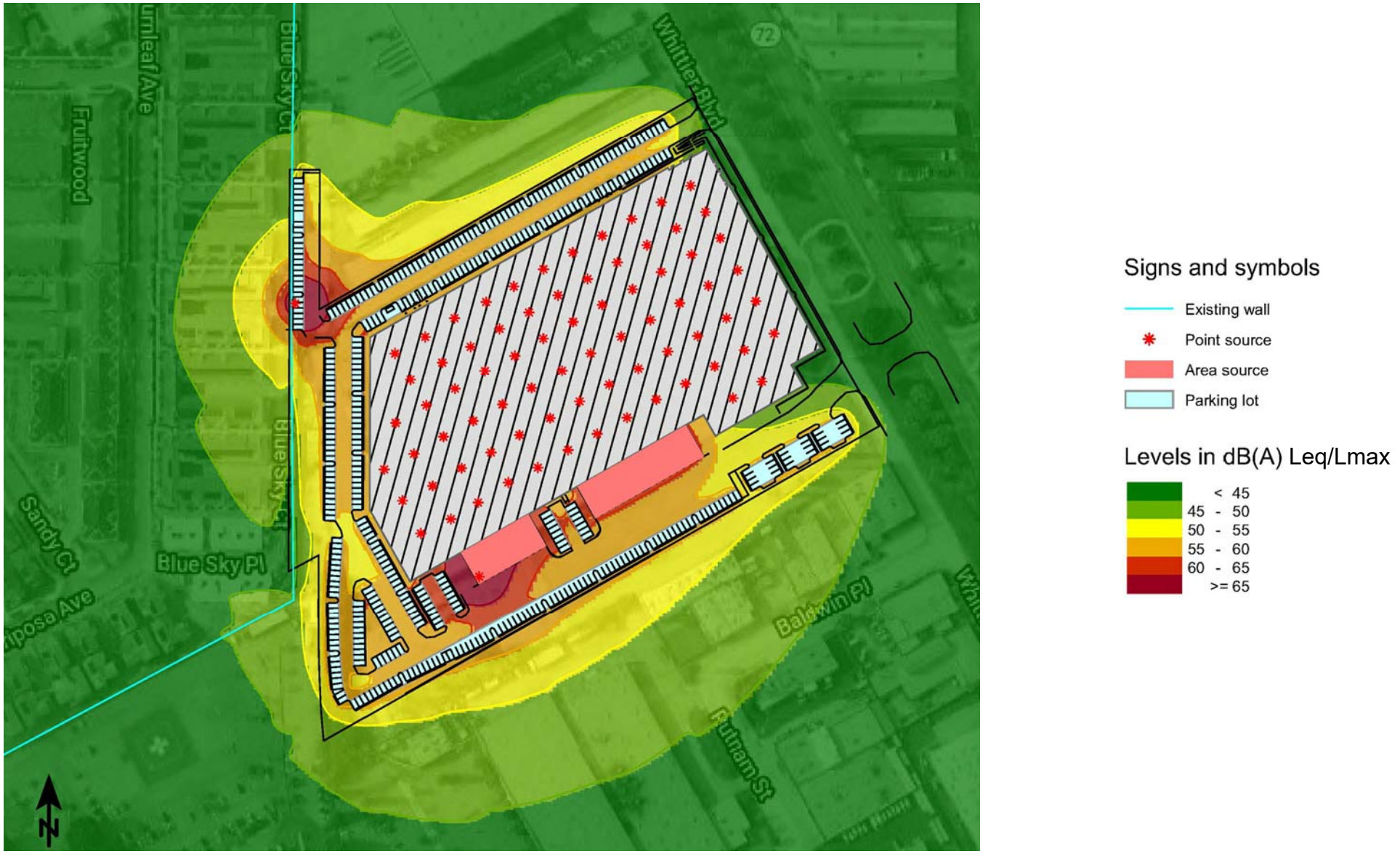


Figure 7
Operational Noise Level Contours

7. IMPACTS - CEQA THRESHOLDS

Will the project result in the:

a) *Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*

Less Than Significant:

Operational Noise – Generated Onsite

City of Whittier Ordinance 8.32.040 limits noise that is allowed to emanate from one property to another. Specifically, late night disturbances of any kind that are plainly audible by inhabitants or occupants of any adjacent or neighboring residential properties or units or are plainly audible at a distance of 50 feet from a real property boundary, that occur during nighttime hours, will be prima facie evidence of violation of this subsection. The equivalent noise level over a one-hour period (Leq) and the maximum expected noise event (Lmax) were modeled in SoundPLAN to determine the project's consistency with this ordinance.

The City of Whittier General Plan Noise Element also implies that the Land Use Compatibility Chart (see Table 3) should be used to assess stationary noise source impacts from one land use to another. The Community Noise Equivalent Level (CNEL) was calculated for project operational noise and added to measured ambient noise levels to assess the project's consistency with the Noise Compatibility Guidelines.

Operational Noise – Generated Offsite

For off-site project generated noise, as stated in the City of Whittier General Plan Update and Housing Element Update Draft Environmental Impact Report (July 9, 2021), increases in ambient noise along affected roadways due to project generated vehicle traffic is considered substantial if they increase ambient noise levels at off-site locations by:

- 5 dBA or more where the ambient noise level would change from normally acceptable to conditionally acceptable;
- 3 dBA or more where the existing ambient noise would change from conditionally acceptable to normally unacceptable; or
- 1 dBA or more where the existing ambient noise level is already normally unacceptable or would change from normally unacceptable to clearly unacceptable.

The roadway noise level increases from project generated vehicular traffic were modeled utilizing a computer program that replicates the FHWA Traffic Noise Prediction Model FHWA-RD-77-108.

Project generated vehicle trips would not result in either a 5 dBA or more increase where the ambient noise level would change from normally acceptable to conditionally acceptable; a 3 dBA or more increase where the existing ambient noise would change from conditionally acceptable to normally unacceptable; or a 1 dBA or more increase where the existing ambient noise level is already normally unacceptable or would change from normally unacceptable to clearly unacceptable.

Five of the modeled roadway segments would have noise level increase between 1.77 and 7.46 dB at the road right-of way. These include the roadway segments of Whittier Boulevard Frontage Road west of Wittier Boulevard, Whittier Boulevard Frontage Road north of Mar Vista Street, Whittier Boulevard Frontage Road south of Mar Vista Street, Mar Vista Street from Whittier Boulevard Frontage Road to Whittier Boulevard, and Pacific Place west of Whittier Boulevard. However, none of these roadways would change from the normally acceptable noise level category as a result of the proposed project. Therefore, the change in noise

level due to project generated vehicle traffic would be considered less than significant. No mitigation is required.

b) Generation of excessive groundborne vibration of groundborne noise levels?

Less Than Significant:

There are several types of construction equipment that can cause vibration levels high enough to cause architectural damage and/or annoyance to persons in the vicinity. For example, as shown in Table 10, a vibratory roller could generate up to 0.21 PPV at a distance of 25 feet; and operation of a large bulldozer (0.089 PPV) at a distance of 25 feet (two of the most vibratory pieces of construction equipment).

The Caltrans Transportation and Construction Vibration Guidance Manual (2020) provides a comprehensive discussion regarding groundborne vibration and the appropriate thresholds to use to assess the potential for damage. As shown in Table 4, the threshold at which there is a risk of "architectural" damage to historic structures is a peak particle velocity (PPV) of 0.25 in/sec, and a PPV of 0.3 in/sec at older residential structures. There is a risk of architectural damage at newer residential structures and modern commercial/industrial buildings at a PPV of 0.5 in/sec. In addition, the Caltrans Noise and Vibration Manual identifies 0.04 PPV in./sec. as the level that is "distinctly perceptible" (Table 5).

Residential structures associated with the nearest sensitive receptors are located approximately 37 feet to the west of the western project boundary and would have vibration levels of up to 0.117 PPV in/sec. However, the nearest off-site buildings are the commercial and industrial uses with structures located adjacent to the northern and southern project boundaries. In order to avoid any vibration impacts, the use of vibratory rollers and large bulldozers will be avoided within 25 feet of these buildings. This Best Management Practice has been added as a note on the project plans. A small bulldozer can be utilized instead. Temporary vibration levels associated with project construction would be less than significant. No mitigation is required.

As shown in Table 5, groundborne vibration associated with project construction may result in annoyance if it exceeds 0.04 PPV in./sec. at a sensitive receptor. The nearest existing off-site structures are the commercial and industrial buildings located adjacent to the northern and southern project boundaries. Therefore, the use of a vibratory roller and/or large bulldozer may be considered annoying to the industrial and commercial receptors to the north and south. In addition, structures associated with the nearest sensitive receptors include the multi-family residential buildings located as close as approximately 37 feet from the western property line and the hospital buildings located as close as approximately 250 feet to the southwest of the project boundaries. Use of a vibratory roller and/or a large bulldozer would not be considered annoying to the residential receptors to the west and southwest of the project site. Annoyance is expected to be short-term, occurring only during site grading and preparation. Recommended best management practices related to vibration presented in Section 8 of this report will further minimize any impacts. No mitigation is required.

Operation of the proposed project will involve the movement of passenger vehicles and trucks. Driving surfaces associated with the project will be paved and will generally be smooth. Loaded trucks generally have a PPV of 0.076 at a distance of 25 feet (Caltrans 2020). Groundborne vibration levels associated with passenger vehicles is much lower. The movement of vehicles on the project site would not result in the generation of excessive groundborne vibration or groundborne noise. Impacts would be less than significant. No mitigation is required.

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the area to excessive noise levels?

No Impact:

The closest airport to the project site is San Gabriel Valley Airport (El Monte Airport), with runways located as close as approximately 7.36 miles to the north of the project site. The El Monte Master Plan Report (1995) shows that the project site is well outside the 60 dBA CNEL noise contour for the airport. The project is not located within two miles of a public airport or public use airport and would not expose people residing or working in the project area to excessive noise levels associated with airports. This impact would be less than significant. No mitigation is required.

8. BEST MANAGEMENT PRACTICES

In addition to adherence to the City of Whittier Municipal Code which limits the construction hours of operation, the following best management practices are recommended to reduce construction noise and vibrations, emanating from the proposed project:

1. During all project site excavation and grading on-site, construction contractors will equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturer standards.

2. The contractor will place all stationary construction equipment so that emitted noise is directed away from the noise sensitive receptors nearest the project site.

3. Equipment will be shut off and not left to idle when not in use.

4. The contractor will locate equipment staging in areas that will create the greatest distance between construction-related noise/vibration sources and sensitive receptors nearest the project site during all project construction.

5. Jackhammers, pneumatic equipment and all other portable stationary noise sources will be shielded, and noise will be directed away from sensitive receptors.

6. The project proponent will mandate that the construction contractor prohibit the use of music or sound amplification on the project site during construction.

7. The construction contractor will limit haul truck deliveries to the same hours specified for construction equipment.

8. The use of vibratory rollers, large bulldozers, or other similar vibratory equipment will be avoided within 25 feet of existing structures. Small bulldozers can be used instead. This BMP will be included on the project plans.

9. REFERENCES

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APPENDICES

Appendix A List of Acronyms
Appendix B Definitions of Acoustical Terms
Appendix C Noise Measurement Field Worksheets
Appendix D Construction Noise Modeling
Appendix E Project Traffic Noise / FHWA Worksheets
Appendix F SoundPLAN Input and Output
Appendix G Vibration Worksheets

APPENDIX A

LIST OF ACRONYMS

Term	Definition
ADT	Average Daily Traffic
ANSI	American National Standard Institute
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
D/E/N	Day / Evening / Night
dB	Decibel
dBA or dB(A)	Decibel "A-Weighted"
dBA/DD	Decibel per Double Distance
dBA L_{eq}	Average Noise Level over a Period of Time
EPA	Environmental Protection Agency
FHWA	Federal Highway Administration
L_{02},L_{08},L_{50},L_{90}	A-weighted Noise Levels at 2 percent, 8 percent, 50 percent, and 90 percent, respectively, of the time period
DNL	Day-Night Average Noise Level
$L_{eq(x)}$	Equivalent Noise Level for '"x" period of time
L_{eq}	Equivalent Noise Level
L_{max}	Maximum Level of Noise (measured using a sound level meter)
L_{min}	Minimum Level of Noise (measured using a sound level meter)
Lp	Sound Pressure Level
LOS C	Level of Service C
Lw	Sound Power Level
OPR	California Governor's Office of Planning and Research
PPV	Peak Particle Velocities
RCNM	Road Construction Noise Model
REMEL	Reference Energy Mean Emission Level
RMS	Root Mean Square

APPENDIX B

DEFINITIONS OF ACOUSTICAL TERMS

Term	Definition
Ambient Noise Level	The all-encompassing noise environment associated with a given environment, at a specified time, usually a composite of sound from many sources, at many directions, near and far, in which usually no particular sound is dominant.
A-Weighted Sound Level, dBA	The sound level obtained by use of A-weighting. 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.
CNEL	Community Noise Equivalent Level. CNEL is a weighted 24-hour noise level that is obtained by adding five decibels to sound levels in the evening (7:00 PM to 10:00 PM), and by adding ten decibels to sound levels at night (10:00 PM to 7:00 AM). This weighting accounts for the increased human sensitivity to noise during the evening and nighttime hours.
Decibel, dB	A logarithmic unit of noise level measurement that relates the energy of a noise source to that of a constant reference level; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
DNL, Ldn	Day Night Level. The DNL, or Ldn is a weighted 24-hour noise level that is obtained by adding ten decibels to sound levels at night (10:00 PM to 7:00 AM). This weighting accounts for the increased human sensitivity to noise during the nighttime hours.
Equivalent Continuous Noise Level, L_{eq}	A level of steady state sound that in a stated time period, and a stated location, has the same A-weighted sound energy as the time-varying sound.
Fast/Slow Meter Response	The fast and slow meter responses are different settings on a sound level meter. The fast response setting takes a measurement every 100 milliseconds, while a slow setting takes one every second.
Frequency, Hertz	In a function periodic in time, the number of times that the quantity repeats itself in one second (i.e., the number of cycles per second).
L_{02}, L_{08}, L_{50}, L_{90}	The A-weighted noise levels that are equaled or exceeded by a fluctuating sound level, 2 percent, 8 percent, 50 percent, and 90 percent of a stated time period, respectively.
L_{max}, L_{min}	Lmax is the RMS (root mean squared) maximum level of a noise source or environment measured on a sound level meter, during a designated time interval, using fast meter response. Lmin is the minimum level.
Offensive/ Offending/Intrusive Noise	The noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of sound depends on its amplitude, duration, frequency, and time of occurrence, and tonal information content as well as the prevailing ambient noise level.
Root Mean Square (RMS)	A measure of the magnitude of a varying noise source quantity. The name derives from the calculation of the square root of the mean of the squares of the values. It can be calculated from either a series of lone values or a continuous varying function.

APPENDIX C

NOISE MEASUREMENT FIELD WORKSHEETS

Noise Measurement
Field Data

Project Name: Whittier Business Park, City of Whittier. **Date:** September 21, 2021

Project #: 19391

Noise Measurement #: STNM1 Run Time: 15 minutes (1 x 15 minutes) **Technician:** Ian Edward Gallagher

Nearest Address or Cross Street: 12442 Putnam Street, Whittier, CA 90602

Site Description (Type of Existing Land Use and any other notable features): Project Site: Industrial, empty warehouses & other structures. Bordered by new residential homes & hospital uses to west, hospital/commercial medical uses to south, self-storage to north, & Whittier Blvd to east. Noise Measurement Site: Project site to N/NE, hospital parking lot to north, south, east & west. Hospital building to S/SW.

Weather: Clear skies, hazy sunshine. **Settings:** SLOW FAST

Temperature: 94 deg F **Wind:** 5-8mph **Humidity:** 45% **Terrain:** Flat

Start Time: 12:33 PM **End Time:** 12:48 PM **Run Time:**

Leq: 58.5 dB

Lmax 63.6 dB

L2 60.7 dB

L8 59.6 dB

L25 58.6 dB

L50 58.3 dB

Primary Noise Source: Machinery noise, soundded like large scale air conditioning noise coming from building 12442 Putnam Street, Whittier (ENE of STNM1).

Secondary Noise Sources: Parking lot ambiance, air conditionoing & machinery noise coming from the hospital 12401 Washington Boulevard, Whittier, overhead air traffic, bird song.

NOISE METER:	SoundTrack LXT Class 2	**CALIBRATOR:**	Larson Davis CAL200
MAKE:	Larson Davis	**MAKE:**	Larson Davis
MODEL:	LXT1	**MODEL:**	Cal 200
SERIAL NUMBER:	1152	**SERIAL NUMBER:**	15741
FACTORY CALIBRATION DATE:	3/31/2021	**FACTORY CALIBRATION DATE:**	7/23/2020
FIELD CALIBRATION DATE:	9/21/2021		

Noise Measurement
Field Data

PHOTOS:

STNM1 looking WSW across medical employee parking lot. Residences residing along Mariposa Avenue in view on the right. Chopper landing site also on the right, situated in employee parking lot.

STNM1 looking N along eastern edge of employee parking lot. Southwestern edge of project site north of meter.

Summary	
File Name on Meter	LxT_Data.151.s
File Name on PC	LxT_0001152-20210921 123332-LxT_Data
Serial Number	0001152
Model	SoundTrack LxT®
Firmware Version	2.404
User	Ian E#dward Gallagher
Location	STNM1 33°58'17.18"N 118° 2'55.70"W
Job Description	15 minute noise measurement (1 x 15 minutes)
Note	Ganddini 19391 Whittier Business Park, City of Whittier

Measurement	
Start	2021-09-21 12:33:32
Stop	2021-09-21 12:48:32
Duration	00:15:00.0
Run Time	00:15:00.0
Pause	00:00:00.0
Pre-Calibration	2021-09-21 12:33:12
Post-Calibration	None

Overall Settings	
RMS Weight	A Weighting
Peak Weight	Z Weighting
Detector	Slow
Preamplifier	PRMLxT1
Microphone Correction	Off
Integration Method	Linear
OBA Range	Low
OBA Bandwidth	1/1 and 1/3
OBA Frequency Weighting	Z Weighting
OBA Max Spectrum	Bin Max
Overload	144.0 dB

Results			
LA_{eq}	58.5		
LAE	88.1		
EA	71.488 µPa²h		
EA8	2.288 mPa²h		
EA40	11.438 mPa²h		
$LZ_{peak\ (max)}$	2021-09-21 12:33:36	106.5 dB	
LAS_{max}	2021-09-21 12:36:41	63.6 dB	
LAS_{min}	2021-09-21 12:35:46	57.4 dB	

		Statistics	
LC_{eq}	76.0 dB	**LA2.00**	60.7 dB
LA_{eq}	58.5 dB	**LA8.00**	59.6 dB
LC_{eq} - LA_{eq}	17.4 dB	**LA25.00**	58.6 dB
LAI_{eq}	59.6 dB	**LA50.00**	58.3 dB
LA_{eq}	58.5 dB	**LA66.60**	58.2 dB
LAI_{eq} - LA_{eq}	1.0 dB	**LA90.00**	57.9 dB
Overload Count	0		

Noise Measurement
Field Data

Project Name: Whittier Business Park, City of Whittier. **Date:** September 21, 2021

Project #: 19391

Noise Measurement #: STNM2 Run Time: 15 minutes (1 x 15 minutes) **Technician:** Ian Edward Gallagher

Nearest Address or Cross Street: 7635 Baldwin Pl, Whittier, CA 90602

Site Description (Type of Existing Land Use and any other notable features): Project Site: Industrial, empty warehouses & other structures. Bordered by new residential homes & hospital uses to west, hospital/commercial medical uses to south, self-storage to north, & Whittier Blvd to east. Noise Measurement Site: Industrial buidling & parking areas to S/SW, commercial/industrial building to east, & project site to north.

Weather: Clear skies, hazy sunshine. **Settings:** SLOW FAST

Temperature: 94 deg F **Wind:** 5-8mph **Humidity:** 45% **Terrain:** Flat

Start Time: 1:11 PM **End Time:** 1:28 PM **Run Time:**

Leq: 63.5 dB
Lmax 75.9 dB
L2 69.5 dB
L8 64.3 dB
L25 62.9 dB
L50 62.3 dB

Primary Noise Source: Machinery noise coming from work area in building 12436 Putnam St (to S) & machinery noise coming from building 12442 Putnam Street (to WSW).

Secondary Noise Sources: Traffic noise from vehicles traveling along Putnam Street, Baldwin Pl & other roads, overhead air traffic, bird song.

NOISE METER:	SoundTrack LXT Class 2	**CALIBRATOR:**	Larson Davis CAL200
MAKE:	Larson Davis	**MAKE:**	Larson Davis
MODEL:	LXT1	**MODEL:**	Cal 200
SERIAL NUMBER:	1152	**SERIAL NUMBER:**	15741
FACTORY CALIBRATION DATE:	3/31/2021	**FACTORY CALIBRATION DATE:**	7/23/2020
FIELD CALIBRATION DATE:	9/21/2021		

Noise Measurement
Field Data

PHOTOS:

STNM2 looking S towards building 12436 Putnam Street, Whittier. Industrial machinery noise emanating from openings in building.

STNM2 looking ENE towards W side of building 7635 Baldwin Pl, Whittier.

Summary	
File Name on Meter	LxT_Data.152.s
File Name on PC	LxT_0001152-20210921 131122-LxT_Da
Serial Number	0001152
Model	SoundTrack LxT®
Firmware Version	2.404
User	Ian Edward Gallagher
Location	STNM2 33°58'19.67"N 118° 2'49.41"W
Job Description	15 minute noise measurement (1 x 15 minutes)
Note	Ganddini 19391 Whittier Business Park, City of Whittier

Measurement	
Start	2021-09-21 13:11:22
Stop	2021-09-21 13:26:22
Duration	00:15:00.0
Run Time	00:15:00.0
Pause	00:00:00.0
Pre-Calibration	2021-09-21 13:11:10
Post-Calibration	None

Overall Settings	
RMS Weight	A Weighting
Peak Weight	Z Weighting
Detector	Slow
Preamplifier	PRMLxT1
Microphone Correction	Off
Integration Method	Linear
OBA Range	Low
OBA Bandwidth	1/1 and 1/3
OBA Frequency Weighting	Z Weighting
OBA Max Spectrum	Bin Max
Overload	144.0 dB

Results				
LA_{eq}	63.5			
LAE	93.0			
EA	223.260	µPa²h		
EA8	7.144	mPa²h		
EA40	35.722	mPa²h		
$LZ_{peak\ (max)}$	2021-09-21 13:14:15	91.7 dB		
LAS_{max}	2021-09-21 13:14:17	75.9 dB		
LAS_{min}	2021-09-21 13:14:05	60.5 dB		
			Statistics	
LC_{eq}	74.8 dB		**LA2.00**	69.5 dB
LA_{eq}	63.5 dB		**LA8.00**	64.3 dB
LC_{eq} - LA_{eq}	11.4 dB		**LA25.00**	62.9 dB
LAI_{eq}	65.7 dB		**LA50.00**	62.3 dB
LA_{eq}	63.5 dB		**LA66.60**	62.0 dB
LAI_{eq} - LA_{eq}	2.2 dB		**LA90.00**	61.4 dB
Overload Count	0			

Noise Measurement
Field Data

Project Name: Whittier Business Park, City of Whittier. **Date:** September 21, 2021

Project #: 19391

Noise Measurement #: STNM3 Run Time: 15 minutes (1 x 15 minutes) **Technician:** Ian Edward Gallagher

Nearest Address or Cross Street: 12352 Whittier Boulevard, Whittier, CA 90606

Site Description (Type of Existing Land Use and any other notable features): Project Site: Industrial, empty warehouses & other structures. Bordered by new residential homes & hospital uses to west, hospital/commercial medical uses to south, self-storage to north, & Whittier Blvd to east. Noise Measurement Site: Whittier Blvd to west w/ project site further west & Whittier blvd to east with commercial uses further east.

Weather: Clear skies, hazy sunshine. **Settings:** SLOW FAST

Temperature: 94 deg F **Wind:** 5-8mph **Humidity:** 45% **Terrain:** Flat

Start Time: 2:12 PM **End Time:** 2:27 PM **Run Time:**

Leq: 64 dB

Lmax 82.4 dB

L2 71.5 dB

L8 65.5 dB

L25 62.3 dB

L50 60.1 dB

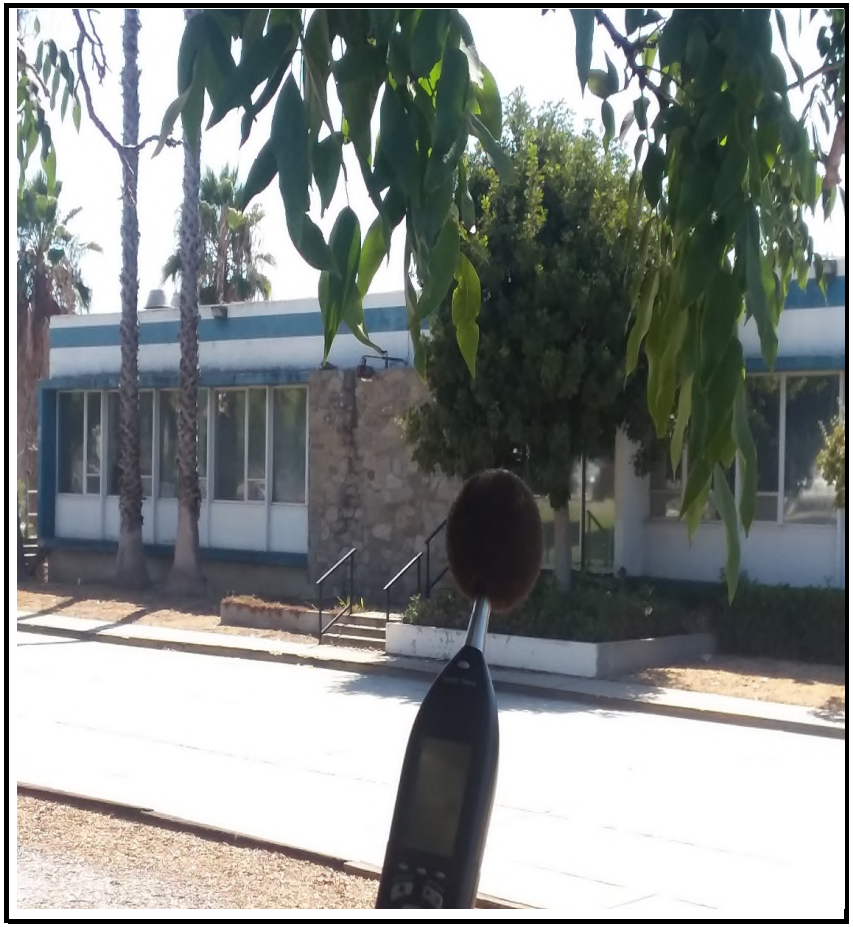
Primary Noise Source: 417 vehicles traveling along Whittier Boulevard during 15 minute noise measurement. Emergency vehicle siren at 2:25 PM.

Secondary Noise Sources: Overhead air traffic, leaf rustle from ~8 mph breeze.

NOISE METER:	SoundTrack LXT Class 2	**CALIBRATOR:**	Larson Davis CAL200
MAKE:	Larson Davis	**MAKE:**	Larson Davis
MODEL:	LXT1	**MODEL:**	Cal 200
SERIAL NUMBER:	1152	**SERIAL NUMBER:**	15741
FACTORY CALIBRATION DATE:	3/31/2021	**FACTORY CALIBRATION DATE:**	7/23/2020
FIELD CALIBRATION DATE:	9/21/2021		

Noise Measurement
Field Data

PHOTOS:



STNM3 looking SW across Whittier Boulevard towards building 12352 Whittier Boulevard, Whittier.

STNM3 looking NNW along Whittier Boulevard. Roads on either side of meter are Whittier Blvd.

Summary	
File Name on Meter	LxT_Data.153.s
File Name on PC	LxT_0001152-20210921 141239-LxT_Data.
Serial Number	0001152
Model	SoundTrack LxT®
Firmware Version	2.404
User	Ian Edward Gallagher
Location	STNM3 33°58'25.63"N 118° 2'45.67"W
Job Description	15 minute noise measurement (1 x 15 minutes)
Note	Ganddini 19391 Whittier Business Park, City of Whittier

Measurement	
Start	2021-09-21 14:12:39
Stop	2021-09-21 14:27:39
Duration	00:15:00.0
Run Time	00:15:00.0
Pause	00:00:00.0
Pre-Calibration	2021-09-21 14:12:23
Post-Calibration	None

Overall Settings	
RMS Weight	A Weighting
Peak Weight	Z Weighting
Detector	Slow
Preamplifier	PRMLxT1
Microphone Correction	Off
Integration Method	Linear
OBA Range	Low
OBA Bandwidth	1/1 and 1/3
OBA Frequency Weighting	Z Weighting
OBA Max Spectrum	Bin Max
Overload	143.9 dB

Results			
LAeq	64.0		
LAE	93.6		
EA	253.218	µPa²h	
EA8	8.103	mPa²h	
EA40	40.515	mPa²h	
LZpeak (max)	2021-09-21 14:26:32	102.3	dB
LASmax	2021-09-21 14:24:58	82.4	dB
LASmin	2021-09-21 14:20:04	52.0	dB

			Statistics		
LCeq	72.7	dB	**LA2.00**	71.5	dB
LAeq	64.0	dB	**LA8.00**	65.5	dB
LCeq - LAeq	8.6	dB	**LA25.00**	62.3	dB
LAIeq	66.7	dB	**LA50.00**	60.1	dB
LAeq	64.0	dB	**LA66.60**	58.8	dB
LAIeq - LAeq	2.6	dB	**LA90.00**	56.3	dB
Overload Count	0				

Noise Measurement
Field Data

Project Name: Whittier Business Park, City of Whittier. **Date:** September 21, 2021

Project #: 19391

Noise Measurement #: STNM4 Run Time: 15 minutes (1 x 15 minutes) **Technician:** Ian Edward Gallagher

Nearest Address or Cross Street: 12320 Whittier Boulevard, Whittier, CA 90602

Site Description (Type of Existing Land Use and any other notable features): Project Site: Industrial, empty warehouses & other structures. Bordered by new residential homes & hospital uses to west, hospital/commercial medical uses to south, self-storage to north, & Whittier Blvd to east. Noise Measurement Site: Public storage facility surrouding measurement with project site to south and new residential to west.

Weather: Clear skies, hazy sunshine. **Settings:** SLOW FAST

Temperature: 94 deg F **Wind:** 5-8mph **Humidity:** 45% **Terrain:** Flat

Start Time: 2:49 PM **End Time:** 3:04 PM **Run Time:**

Leq: 53.1 dB **Primary Noise Source:** Ambiance from customers attending their stored items at Public Storage.

Lmax 67.6 dB

L2 63.1 dB **Secondary Noise Sources:** Overhead air traffic, traffic ambiance.

L8 56.0 dB

L25 51.7 dB

L50 49.3 dB

NOISE METER:	SoundTrack LXT Class 2	**CALIBRATOR:**	Larson Davis CAL200
MAKE:	Larson Davis	**MAKE:**	Larson Davis
MODEL:	LXT1	**MODEL:**	Cal 200
SERIAL NUMBER:	1152	**SERIAL NUMBER:**	15741
FACTORY CALIBRATION DATE:	3/31/2021	**FACTORY CALIBRATION DATE:**	7/23/2020
FIELD CALIBRATION DATE:	9/21/2021		

Noise Measurement
Field Data

PHOTOS:

STNM4 looking NE across Public Storage area towards Whittier Boulevard.

STNM4 looking N across back area of Public Storage.

Summary	
File Name on Meter	LxT_Data.154.s
File Name on PC	LxT_0001152-20210921 144920-LxT_Data.154.lc
Serial Number	0001152
Model	SoundTrack LxT®
Firmware Version	2.404
User	Ian Edward Gallagher
Location	STNM4 33°58'24.88"N 118° 2'55.19"W
Job Description	15 minute noise measurement (1 x 15 minutes)
Note	Ganddini 19391 Whittier Business Park, City of Whittier

Measurement	
Start	2021-09-21 14:49:20
Stop	2021-09-21 15:04:20
Duration	00:15:00.0
Run Time	00:15:00.0
Pause	00:00:00.0
Pre-Calibration	2021-09-21 14:48:52
Post-Calibration	None

Overall Settings	
RMS Weight	A Weighting
Peak Weight	Z Weighting
Detector	Slow
Preamplifier	PRMLxT1
Microphone Correction	Off
Integration Method	Linear
OBA Range	Low
OBA Bandwidth	1/1 and 1/3
OBA Frequency Weighting	Z Weighting
OBA Max Spectrum	Bin Max
Overload	144.0 dB

Results			
LA_{eq}	53.1		
LAE	82.7		
EA	20.591 µPa²h		
EA8	658.902 µPa²h		
EA40	3.295 mPa²h		
$LZ_{peak\ (max)}$	2021-09-21 14:52:05	101.7 dB	
LAS_{max}	2021-09-21 14:58:33	67.6 dB	
LAS_{min}	2021-09-21 14:52:43	43.8 dB	

		Statistics	
LC_{eq}	65.5 dB	**LA2.00**	63.1 dB
LA_{eq}	53.1 dB	**LA8.00**	56.0 dB
LC_{eq} - LA_{eq}	12.4 dB	**LA25.00**	51.7 dB
LAI_{eq}	55.1 dB	**LA50.00**	49.3 dB
LA_{eq}	53.1 dB	**LA66.60**	47.9 dB
LAI_{eq} - LA_{eq}	2.0 dB	**LA90.00**	45.7 dB
Overload Count	0		

Noise Measurement
Field Data

Project Name: Whittier Business Park, City of Whittier. **Date:** September 21, 2021

Project #: 19391

Noise Measurement #: STNM5 Run Time: 15 minutes (1 x 15 minutes) **Technician:** Ian Edward Gallagher

Nearest Address or Cross Street: 12396 Blue Sky Ct, Whittier, CA 90606

Site Description (Type of Existing Land Use and any other notable features): Project Site: Industrial, empty warehouses & other structures. Bordered by new residential homes & hospital uses to west, hospital/commercial medical uses to south, self-storage to north, & Whittier Blvd to east. Noise Measurement Site: Multi-family residential neighborhood, drive area with elevated block wall to east of measurement between project site and residential uses.

Weather: Clear skies, hazy sunshine. **Settings:** SLOW FAST

Temperature: 94 deg F **Wind:** 5-8mph **Humidity:** 45% **Terrain:** Flat

Start Time: 3:47 PM **End Time:** 4:02 PM **Run Time:**

Leq: 53.5 dB **Primary Noise Source:** Residential ambiance, hum from multiple residential air conditioning units.

Lmax 61.9 dB

L2 58.5 dB **Secondary Noise Sources:** Overhead air traffic, traffic ambiance. Bird song.

L8 54.2 dB

L25 53.6 dB

L50 51.8 dB

NOISE METER:	SoundTrack LXT Class 2	**CALIBRATOR:**	Larson Davis CAL200
MAKE:	Larson Davis	**MAKE:**	Larson Davis
MODEL:	LXT1	**MODEL:**	Cal 200
SERIAL NUMBER:	1152	**SERIAL NUMBER:**	15741
FACTORY CALIBRATION DATE:	3/31/2021	**FACTORY CALIBRATION DATE:**	7/23/2020
FIELD CALIBRATION DATE:	9/21/2021		

Noise Measurement
Field Data

PHOTOS:

STNM5 looking ENE from walkway towards Blue Sky Ct, residence 12398 Blue Sky Ct on the left.

STNM5 looking N up Blue Sky Ct, residence 12398 Blue Sky Ct on the immediate left.

Summary	
File Name on Meter	LxT_Data.155.s
File Name on PC	LxT_0001152-20210921 154702-LxT_Data.15
Serial Number	0001152
Model	SoundTrack LxT®
Firmware Version	2.404
User	Ian Edward Gallagher
Location	STNM5 33°58'21.34"N 118° 2'56.39"W
Job Description	15 minute noise measurement (1 x 15 minutes)
Note	Ganddini 19391 Whittier Business Park, City of Whittier

Measurement	
Start	2021-09-21 15:47:02
Stop	2021-09-21 16:02:02
Duration	00:15:00.0
Run Time	00:15:00.0
Pause	00:00:00.0
Pre-Calibration	2021-09-21 15:46:36
Post-Calibration	None

Overall Settings	
RMS Weight	A Weighting
Peak Weight	Z Weighting
Detector	Slow
Preamplifier	PRMLxT1
Microphone Correction	Off
Integration Method	Linear
OBA Range	Low
OBA Bandwidth	1/1 and 1/3
OBA Frequency Weighting	Z Weighting
OBA Max Spectrum	Bin Max
Overload	144.0 dB

Results			
LAeq	53.5		
LAE	83.0		
EA	22.181 µPa²h		
EA8	709.785 µPa²h		
EA40	3.549 mPa²h		
LZpeak (max)	2021-09-21 15:53:13	93.5 dB	
LASmax	2021-09-21 15:56:26	61.9 dB	
LASmin	2021-09-21 15:54:49	48.7 dB	
		Statistics	
LCeq	65.7 dB	**LA2.00**	58.5 dB
LAeq	53.5 dB	**LA8.00**	54.2 dB
LCeq - LAeq	12.2 dB	**LA25.00**	53.6 dB
LAIeq	54.5 dB	**LA50.00**	53.2 dB
LAeq	53.5 dB	**LA66.60**	52.4 dB
LAIeq - LAeq	1.0 dB	**LA90.00**	51.8 dB
Overload Count	0		

Noise Measurement
Field Data

Project Name: Whittier Business Park, City of Whittier. **Date:** September 21-22 2021

Project #: 19391

Noise Measurement #: LTNM1 Run Time: 24 hours (24 x 1 hours) **Technician:** Ian Edward Gallagher

Nearest Address or Cross Street: 12398 Blue Sky Ct, Whittier, CA 90606

Site Description (Type of Existing Land Use and any other notable features): Project Site: Industrial, empty warehouses & other structures. Bordered by new residential homes & hospital uses to west, hospital/commercial medical uses to south, self-storage to north, & Whittier Blvd to east. Noise Measurement Site: Project site to east, residential to west, & hospital parking lot to southwest.

Weather: Clear skies, sunshine by day. Sunset/rise 6:50PM/6:40AM **Settings:** SLOW FAST

Temperature: 68-94 deg F **Wind:** 0-8 mph **Humidity:** 27-40% **Terrain:** Flat

Start Time: 6:00 PM **End Time:** 6:00 PM **Run Time:**

Leq: 60 dB **Primary Noise Source:** Constant machine noise from building 12442 Putnam Street (SSE of LTNM1).

Lmax 79.3 dB

L2 62.0 dB **Secondary Noise Sources:** Overhead air traffic, distant traffic ambiance. Bird song. Air conditioning units from nearby residences.

L8 60.9 dB

L25 60.3 dB

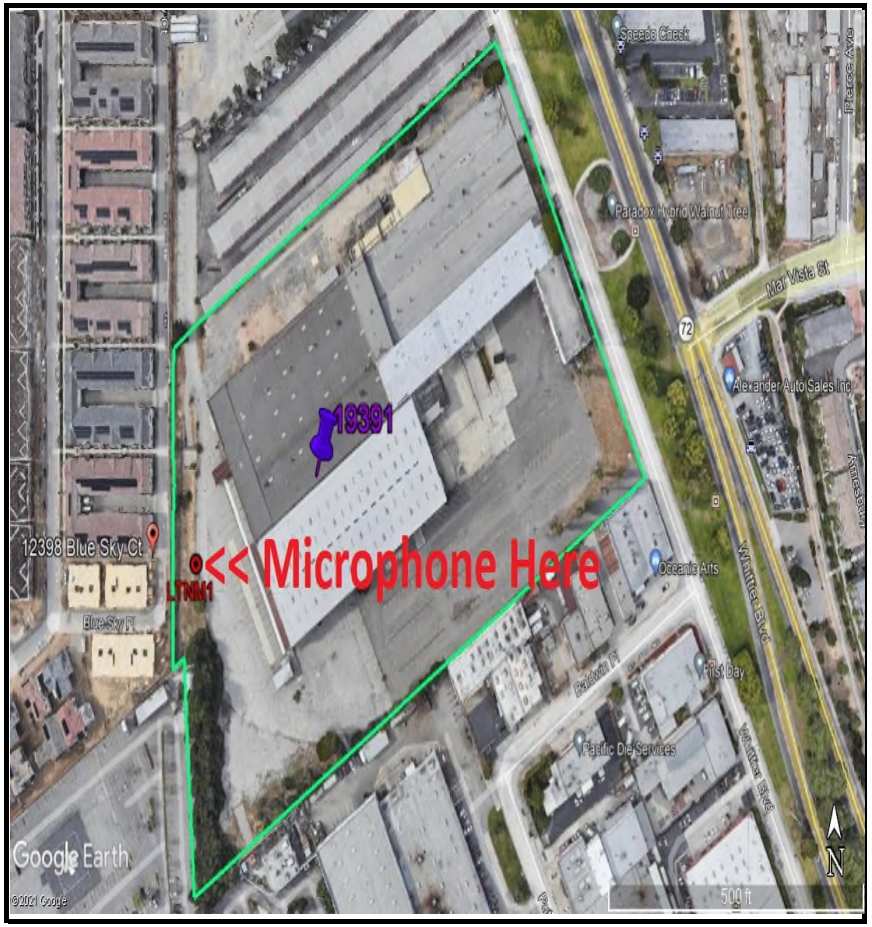
L50 59.7 dB

NOISE METER:	SoundTrack LXT Class 2	**CALIBRATOR:**	Larson Davis CAL200
MAKE:	Larson Davis	**MAKE:**	Larson Davis
MODEL:	LXT1	**MODEL:**	Cal 200
SERIAL NUMBER:	1152	**SERIAL NUMBER:**	15741
FACTORY CALIBRATION DATE:	3/31/2021	**FACTORY CALIBRATION DATE:**	7/23/2020
FIELD CALIBRATION DATE:	9/21/2021		

Noise Measurement
Field Data

PHOTOS:

LTNM1 looking W down embankment & over concrete block wall towards residence 12398 Blue Sky Ct.



LTNM1 looking down showing location of microphone relative to surrounding area.

Summary	
File Name on Meter	LxT_Data.156.s
File Name on PC	LxT_0001152-20210921 180000-LxT_Da
Serial Number	0001152
Model	SoundTrack LxT®
Firmware Version	2.404
User	Ian Edward Gallagher
Location	LTNM1 33°58'21.25"N 118° 2'55.47"W
Job Description	24 hour noise measurement (24 x 1 hours)
Note	Ganddini 19391 Whittier Business Park, City of Whittier

Measurement	
Start	2021-09-21 18:00:00
Stop	2021-09-22 18:00:00
Duration	24:00:00.0
Run Time	24:00:00.0
Pause	00:00:00.0
Pre-Calibration	2021-09-21 16:41:27
Post-Calibration	None

Overall Settings	
RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamplifier	PRMLxT1
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Frequency Weighting	A Weighting
OBA Max Spectrum	Bin Max
Overload	144.1 dB

Results				
LA_{eq}	60.0			
LAE	109.3			
EA	9.496	mPa^2h		
EA8	3.165	mPa^2h		
EA40	15.826	mPa^2h		
$LA_{peak\ (max)}$	2021-09-22 14:09:03	92.1 dB		
LAS_{max}	2021-09-22 14:09:03	79.3 dB		
LAS_{min}	2021-09-22 14:41:22	55.9 dB		

		Statistics	
LC_{eq}	73.8 dB	**LA2.00**	62.0 dB
LA_{eq}	60.0 dB	**LA8.00**	60.9 dB
LC_{eq} - LA_{eq}	13.9 dB	**LA25.00**	60.3 dB
LAI_{eq}	61.1 dB	**LA50.00**	59.7 dB
LA_{eq}	60.0 dB	**LA90.00**	58.8 dB
LAI_{eq} - LA_{eq}	1.1 dB	**LA99.00**	58.0 dB
Overload Count	0		

Record #	Date	Time	Run Duration	Run Time	Pause	LAeq	LASmin	LASmin Time	LASmax	LASmax Time	LAS2.00	LAS8.00	LAS25.00	LAS50.00	LAS90.00	LAS99.00
1	2021-09-21	18:00:00	01:00:00.0	01:00:00.0	00:00:00.0	59.6	57.2	18:46:19	67.4	18:30:43	61.7	60.4	59.8	59.4	58.6	58.0
2	2021-09-21	19:00:00	01:00:00.0	01:00:00.0	00:00:00.0	59.5	57.5	19:15:33	64.4	19:19:50	61.5	60.4	59.7	59.3	58.7	58.1
3	2021-09-21	20:00:00	01:00:00.0	01:00:00.0	00:00:00.0	60.5	58.5	20:01:32	67.5	20:44:50	62.5	61.5	60.9	60.3	59.5	59.1
4	2021-09-21	21:00:00	01:00:00.0	01:00:00.0	00:00:00.0	60.2	58.7	21:57:10	70.1	21:05:14	62.4	60.8	60.2	59.9	59.4	59.1
5	2021-09-21	22:00:00	01:00:00.0	01:00:00.0	00:00:00.0	60.2	58.3	22:15:43	67.1	22:48:52	61.6	60.9	60.4	60.0	59.3	58.8
6	2021-09-21	23:00:00	01:00:00.0	01:00:00.0	00:00:00.0	60.4	59.3	23:56:45	64.3	23:19:29	61.7	61.0	60.6	60.3	59.9	59.6
7	2021-09-22	00:00:00	01:00:00.0	01:00:00.0	00:00:00.0	60.4	59.0	00:17:09	62.0	00:34:14	61.3	61.0	60.7	60.4	59.9	59.5
8	2021-09-22	01:00:00	01:00:00.0	01:00:00.0	00:00:00.0	59.1	57.8	01:30:49	62.8	01:08:20	60.2	59.9	59.4	59.1	58.5	58.2
9	2021-09-22	02:00:00	01:00:00.0	01:00:00.0	00:00:00.0	59.0	57.8	02:17:06	60.6	02:39:20	59.9	59.6	59.3	59.0	58.5	58.2
10	2021-09-22	03:00:00	01:00:00.0	01:00:00.0	00:00:00.0	59.7	58.6	03:44:24	64.8	03:55:57	60.6	60.3	59.9	59.6	59.2	58.9
11	2021-09-22	04:00:00	01:00:00.0	01:00:00.0	00:00:00.0	59.9	58.6	04:04:23	66.4	04:21:37	60.9	60.5	60.1	59.9	59.3	58.9
12	2021-09-22	05:00:00	01:00:00.0	01:00:00.0	00:00:00.0	60.3	59.0	05:08:04	65.6	05:16:03	61.3	60.8	60.5	60.2	59.7	59.4
13	2021-09-22	06:00:00	01:00:00.0	01:00:00.0	00:00:00.0	60.5	59.0	06:54:48	67.2	06:40:05	62.8	61.3	60.7	60.3	59.7	59.4
14	2021-09-22	07:00:00	01:00:00.0	01:00:00.0	00:00:00.0	60.3	58.2	07:52:37	65.9	07:00:22	62.7	61.2	60.5	60.1	59.4	58.8
15	2021-09-22	08:00:00	01:00:00.0	01:00:00.0	00:00:00.0	59.6	57.4	08:17:42	67.5	08:01:25	62.5	60.5	59.7	59.3	58.6	58.1
16	2021-09-22	09:00:00	01:00:00.0	01:00:00.0	00:00:00.0	59.6	57.6	09:14:46	62.6	09:15:41	61.2	60.5	59.8	59.4	58.8	58.2
17	2021-09-22	10:00:00	01:00:00.0	01:00:00.0	00:00:00.0	59.8	57.6	10:10:48	65.4	10:02:00	62.4	60.8	60.0	59.5	58.8	58.1
18	2021-09-22	11:00:00	01:00:00.0	01:00:00.0	00:00:00.0	60.0	57.7	11:52:53	66.6	11:05:00	62.1	61.1	60.3	59.8	58.9	58.2
19	2021-09-22	12:00:00	01:00:00.0	01:00:00.0	00:00:00.0	60.1	57.5	12:56:16	66.0	12:03:36	62.3	61.4	60.6	60.0	58.8	58.1
20	2021-09-22	13:00:00	01:00:00.0	01:00:00.0	00:00:00.0	60.4	56.9	13:27:13	71.1	13:29:04	64.8	61.7	60.5	59.8	58.8	57.6
21	2021-09-22	14:00:00	01:00:00.0	01:00:00.0	00:00:00.0	60.8	55.9	14:41:22	79.3	14:09:03	63.0	60.8	60.0	59.3	58.4	57.5
22	2021-09-22	15:00:00	01:00:00.0	01:00:00.0	00:00:00.0	59.3	56.8	15:37:34	68.8	15:11:12	61.7	60.4	59.6	59.1	58.2	57.5
23	2021-09-22	16:00:00	01:00:00.0	01:00:00.0	00:00:00.0	59.2	56.4	16:54:17	66.2	16:23:23	61.6	60.2	59.5	59.0	58.0	57.2
24	2021-09-22	17:00:00	01:00:00.0	01:00:00.0	00:00:00.0	59.8	56.9	17:00:53	64.6	17:33:23	62.2	60.9	60.1	59.6	58.8	58.1

APPENDIX D

CONSTRUCTION NOISE MODELING

Receptor - Residential to West

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA
Demolition									
Concrete/Industrial Saws	1	90	470	20	0.20	-19.5	-7.0	70.5	63.5
Excavators	3	81	470	40	1.20	-19.5	0.8	61.5	62.3
Rubber Tired Dozers	2	82	470	40	0.80	-19.5	-1.0	62.5	61.6
							Log Sum	71.6	67.3
Site Preparation									
Rubber Tired Dozers	3	82	470	40	1.20	-19.5	0.8	62.5	63.3
Tractors/Loaders/Backhoes	4	84	470	40	1.60	-19.5	2.0	64.5	66.6
							Log Sum	66.7	68.3
Grading									
Excavator	2	81	470	40	0.80	-19.5	-1.0	61.5	60.6
Grader	1	85	470	40	0.40	-19.5	-4.0	65.5	61.6
Rubber Tired Dozers	1	82	470	40	0.40	-19.5	-4.0	62.5	58.6
Scrapers	2	84	470	40	0.80	-19.5	-1.0	64.5	63.6
Tractors/Loaders/Backhoes	2	84	470	40	0.80	-19.5	-1.0	64.5	63.6
							Log Sum	71.0	68.9
Building Construction									
Cranes	1	81	470	16	0.16	-19.5	-8.0	61.5	53.6
Forklifts [2]	3	48	470	40	1.20	-19.5	0.8	28.5	29.3
Generator Sets	1	81	470	50	0.50	-19.5	-3.0	61.5	58.5
Welders	1	74	470	40	0.40	-19.5	-4.0	54.5	50.6
Tractors/Loaders/Backhoes	3	84	470	40	1.20	-19.5	0.8	64.5	65.3
							Log Sum	67.8	66.5
Paving									
Pavers	2	77	470	50	1.00	-19.5	0.0	57.5	57.5
Paving Equipment	2	77	470	20	0.40	-19.5	-4.0	57.5	53.6
Rollers	2	80	470	20	0.40	-19.5	-4.0	60.5	56.6
							Log Sum	63.6	61.0
Architectural Coating									
Air Compressors	1	78	470	40	0.40	-19.5	-4.0	58.5	54.6
							Log Sum	58.5	54.6

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006) (https://www.nrc.gov/docs/ML1805/ML18059A141.pdf)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (structure).

Receptor - Commercial to North & South

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA
Demolition									
Concrete/Industrial Saws	1	90	311	20	0.20	-15.9	-7.0	74.1	67.1
Excavators	3	81	311	40	1.20	-15.9	0.8	65.1	65.9
Rubber Tired Dozers	2	82	311	40	0.80	-15.9	-1.0	66.1	65.2
							Log Sum	75.2	70.9
Site Preparation									
Rubber Tired Dozers	3	82	311	40	1.20	-15.9	0.8	66.1	66.9
Tractors/Loaders/Backhoes	4	84	311	40	1.60	-15.9	2.0	68.1	70.2
							Log Sum	70.2	71.8
Grading									
Excavator	2	81	311	40	0.80	-15.9	-1.0	65.1	64.2
Grader	1	85	311	40	0.40	-15.9	-4.0	69.1	65.1
Rubber Tired Dozers	1	82	311	40	0.40	-15.9	-4.0	66.1	62.1
Scrapers	2	84	311	40	0.80	-15.9	-1.0	68.1	67.2
Tractors/Loaders/Backhoes	2	84	311	40	0.80	-15.9	-1.0	68.1	67.2
							Log Sum	74.5	72.5
Building Construction									
Cranes	1	81	311	16	0.16	-15.9	-8.0	65.1	57.2
Forklifts [2]	3	48	311	40	1.20	-15.9	0.8	32.1	32.9
Generator Sets	1	81	311	50	0.50	-15.9	-3.0	65.1	62.1
Welders	1	74	311	40	0.40	-15.9	-4.0	58.1	54.1
Tractors/Loaders/Backhoes	3	84	311	40	1.20	-15.9	0.8	68.1	68.9
							Log Sum	71.4	70.1
Paving									
Pavers	2	77	311	50	1.00	-15.9	0.0	61.1	61.1
Paving Equipment	2	77	311	20	0.40	-15.9	-4.0	61.1	57.1
Rollers	2	80	311	20	0.40	-15.9	-4.0	64.1	60.1
							Log Sum	67.1	64.5
Architectural Coating									
Air Compressors	1	78	311	40	0.40	-15.9	-4.0	62.1	58.1
							Log Sum	62.1	58.1

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006) (https://www.nrc.gov/docs/ML1805/ML18059A141.pdf)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (structure).

Receptor - Hospital to Southwest

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA
Demolition									
Concrete/Industrial Saws	1	90	427	20	0.20	-18.6	-7.0	71.4	64.4
Excavators	3	81	427	40	1.20	-18.6	0.8	62.4	63.2
Rubber Tired Dozers	2	82	427	40	0.80	-18.6	-1.0	63.4	62.4
							Log Sum	72.5	68.2
Site Preparation									
Rubber Tired Dozers	3	82	427	40	1.20	-18.6	0.8	63.4	64.2
Tractors/Loaders/Backhoes	4	84	427	40	1.60	-18.6	2.0	65.4	67.4
							Log Sum	67.5	69.1
Grading									
Excavator	2	81	427	40	0.80	-18.6	-1.0	62.4	61.4
Grader	1	85	427	40	0.40	-18.6	-4.0	66.4	62.4
Rubber Tired Dozers	1	82	427	40	0.40	-18.6	-4.0	63.4	59.4
Scrapers	2	84	427	40	0.80	-18.6	-1.0	65.4	64.4
Tractors/Loaders/Backhoes	2	84	427	40	0.80	-18.6	-1.0	65.4	64.4
							Log Sum	71.8	69.8
Building Construction									
Cranes	1	81	427	16	0.16	-18.6	-8.0	62.4	54.4
Forklifts [2]	3	48	427	40	1.20	-18.6	0.8	29.4	30.2
Generator Sets	1	81	427	50	0.50	-18.6	-3.0	62.4	59.4
Welders	1	74	427	40	0.40	-18.6	-4.0	55.4	51.4
Tractors/Loaders/Backhoes	3	84	427	40	1.20	-18.6	0.8	65.4	66.2
							Log Sum	68.6	67.3
Paving									
Pavers	2	77	427	50	1.00	-18.6	0.0	58.4	58.4
Paving Equipment	2	77	427	20	0.40	-18.6	-4.0	58.4	54.4
Rollers	2	80	427	20	0.40	-18.6	-4.0	61.4	57.4
							Log Sum	64.4	61.8
Architectural Coating									
Air Compressors	1	78	427	40	0.40	-18.6	-4.0	59.4	55.4
							Log Sum	59.4	55.4

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006) (https://www.nrc.gov/docs/ML1805/ML18059A141.pdf)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (structure).

Receptor - Commercial to East

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA
Demolition									
Concrete/Industrial Saws	1	90	672	20	0.20	-22.6	-7.0	67.4	60.4
Excavators	3	81	672	40	1.20	-22.6	0.8	58.4	59.2
Rubber Tired Dozers	2	82	672	40	0.80	-22.6	-1.0	59.4	58.5
							Log Sum	68.5	64.2
Site Preparation									
Rubber Tired Dozers	3	82	672	40	1.20	-22.6	0.8	59.4	60.2
Tractors/Loaders/Backhoes	4	84	672	40	1.60	-22.6	2.0	61.4	63.5
							Log Sum	63.6	65.2
Grading									
Excavator	2	81	672	40	0.80	-22.6	-1.0	58.4	57.5
Grader	1	85	672	40	0.40	-22.6	-4.0	62.4	58.5
Rubber Tired Dozers	1	82	672	40	0.40	-22.6	-4.0	59.4	55.5
Scrapers	2	84	672	40	0.80	-22.6	-1.0	61.4	60.5
Tractors/Loaders/Backhoes	2	84	672	40	0.80	-22.6	-1.0	61.4	60.5
							Log Sum	67.9	65.8
Building Construction									
Cranes	1	81	672	16	0.16	-22.6	-8.0	58.4	50.5
Forklifts [2]	3	48	672	40	1.20	-22.6	0.8	25.4	26.2
Generator Sets	1	81	672	50	0.50	-22.6	-3.0	58.4	55.4
Welders	1	74	672	40	0.40	-22.6	-4.0	51.4	47.5
Tractors/Loaders/Backhoes	3	84	672	40	1.20	-22.6	0.8	61.4	62.2
							Log Sum	64.7	63.4
Paving									
Pavers	2	77	672	50	1.00	-22.6	0.0	54.4	54.4
Paving Equipment	2	77	672	20	0.40	-22.6	-4.0	54.4	50.5
Rollers	2	80	672	20	0.40	-22.6	-4.0	57.4	53.5
							Log Sum	60.4	57.9
Architectural Coating									
Air Compressors	1	78	672	40	0.40	-22.6	-4.0	55.4	51.5
							Log Sum	55.4	51.5

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006) (https://www.nrc.gov/docs/ML1805/ML18059A141.pdf)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (structure).

Receptor - Multi-Family Residential to East/Southeast

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA
Demolition									
Concrete/Industrial Saws	1	90	868	20	0.20	-24.8	-7.0	65.2	58.2
Excavators	3	81	868	40	1.20	-24.8	0.8	56.2	57.0
Rubber Tired Dozers	2	82	868	40	0.80	-24.8	-1.0	57.2	56.2
							Log Sum	66.3	62.0
Site Preparation									
Rubber Tired Dozers	3	82	868	40	1.20	-24.8	0.8	57.2	58.0
Tractors/Loaders/Backhoes	4	84	868	40	1.60	-24.8	2.0	59.2	61.3
							Log Sum	61.3	62.9
Grading									
Excavator	2	81	868	40	0.80	-24.8	-1.0	56.2	55.2
Grader	1	85	868	40	0.40	-24.8	-4.0	60.2	56.2
Rubber Tired Dozers	1	82	868	40	0.40	-24.8	-4.0	57.2	53.2
Scrapers	2	84	868	40	0.80	-24.8	-1.0	59.2	58.2
Tractors/Loaders/Backhoes	2	84	868	40	0.80	-24.8	-1.0	59.2	58.2
							Log Sum	65.6	63.6
Building Construction									
Cranes	1	81	868	16	0.16	-24.8	-8.0	56.2	48.3
Forklifts [2]	3	48	868	40	1.20	-24.8	0.8	23.2	24.0
Generator Sets	1	81	868	50	0.50	-24.8	-3.0	56.2	53.2
Welders	1	74	868	40	0.40	-24.8	-4.0	49.2	45.2
Tractors/Loaders/Backhoes	3	84	868	40	1.20	-24.8	0.8	59.2	60.0
							Log Sum	62.4	61.2
Paving									
Pavers	2	77	868	50	1.00	-24.8	0.0	52.2	52.2
Paving Equipment	2	77	868	20	0.40	-24.8	-4.0	52.2	48.2
Rollers	2	80	868	20	0.40	-24.8	-4.0	55.2	51.2
							Log Sum	58.2	55.6
Architectural Coating									
Air Compressors	1	78	868	40	0.40	-24.8	-4.0	53.2	49.2
							Log Sum	53.2	49.2

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006) (https://www.nrc.gov/docs/ML1805/ML18059A141.pdf)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (structure).

APPENDIX E

PROJECT TRAFFIC NOISE / FHWA WORKSHEETS

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard Frontage Road**

Segment: **West of Whittier Boulevard**

	DAYTIME			EVENING			NIGHTTIME			ADT	820.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	35.00
										DISTANCE	30.00
INPUT PARAMETERS											
Vehicles per hour	50.29	0.61	0.24	37.17	0.11	0.11	9.31	0.82	0.32	% A	97.4
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	1.84
NOISE CALCULATIONS											
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05	% HT	0.74
ADJUSTMENTS											
Flow	11.27	-7.86	-11.96	9.95	-15.37	-15.36	3.94	-6.61	-10.71		
Distance	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	58.25
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	54.54
LEQ	53.53	44.12	45.24	52.21	36.61	41.84	46.20	45.37	46.48	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	54.54		EVENING LEQ	52.70		NIGHT LEQ	50.81		Use hour?	no
										GRADE dB	0.00
		CNEL	**58.25**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Plus Project Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard Frontage Road**

Segment: **West of Whittier Boulevard**

	DAYTIME			EVENING			NIGHTTIME			ADT	1340.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	35.00
										DISTANCE	30.00
INPUT PARAMETERS											
Vehicles per hour	78.09	1.10	2.86	57.71	0.20	1.31	14.45	1.47	3.82	% A	92.55
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	2.02
NOISE CALCULATIONS											
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05	% HT	5.42
ADJUSTMENTS											
Flow	13.18	-5.32	-1.18	11.87	-12.83	-4.57	5.85	-4.07	0.07		
Distance	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	64.84
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	59.01
LEQ	55.44	46.65	56.02	54.12	39.14	52.62	48.11	47.90	57.27	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	59.01		EVENING LEQ	56.53		NIGHT LEQ	58.19		Use hour?	no
										GRADE dB	0.00
		CNEL	**64.84**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard Frontage Road**

Segment: **North of Mar Vista Street**

	DAYTIME			EVENING			NIGHTTIME			ADT	870.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	35.00
										DISTANCE	30.00
INPUT PARAMETERS											
Vehicles per hour	53.36	0.65	0.25	39.43	0.12	0.12	9.88	0.87	0.34	% A	97.4
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	1.84
NOISE CALCULATIONS											
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05	% HT	0.74
ADJUSTMENTS											
Flow	11.53	-7.60	-11.70	10.21	-15.11	-15.10	4.20	-6.35	-10.45		
Distance	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	58.51
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	54.80
LEQ	53.78	44.38	45.49	52.47	36.87	42.10	46.46	45.62	46.74	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	54.80		EVENING LEQ	52.96		NIGHT LEQ	51.07		Use hour?	no
										GRADE dB	0.00
		CNEL	**58.51**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Plus Project Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard Frontage Road**

Segment: **North of Mar Vista Street**

	DAYTIME			EVENING			NIGHTTIME			ADT	1580.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	35.00
										DISTANCE	30.00
INPUT PARAMETERS											
Vehicles per hour	91.31	1.32	3.84	67.48	0.23	1.75	16.90	1.76	5.11	% A	91.78
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	2.05
NOISE CALCULATIONS											
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05	% HT	6.16
ADJUSTMENTS											
Flow	13.86	-4.55	0.09	12.55	-12.06	-3.30	6.53	-3.30	1.34		
Distance	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	65.97
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	60.00
LEQ	56.12	47.43	57.29	54.80	39.92	53.89	48.79	48.68	58.54	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	60.00		EVENING LEQ	57.46		NIGHT LEQ	59.36		Use hour?	no
										GRADE dB	0.00
		CNEL	**65.97**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard Frontage Road**

Segment: **South of Mar Vista Street**

	DAYTIME			EVENING			NIGHTTIME			ADT	870.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	35.00
										DISTANCE	30.00
INPUT PARAMETERS											
Vehicles per hour	53.36	0.65	0.25	39.43	0.12	0.12	9.88	0.87	0.34	% A	97.4
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	1.84
NOISE CALCULATIONS											
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05	% HT	0.74
ADJUSTMENTS											
Flow	11.53	-7.60	-11.70	10.21	-15.11	-15.10	4.20	-6.35	-10.45		
Distance	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	58.51
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	54.80
LEQ	53.78	44.38	45.49	52.47	36.87	42.10	46.46	45.62	46.74	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	54.80		EVENING LEQ	52.96		NIGHT LEQ	51.07		Use hour?	no
										GRADE dB	0.00
		CNEL	**58.51**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Plus Project Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard Frontage Road**

Segment: **South of Mar Vista Street**

	DAYTIME			EVENING			NIGHTTIME			ADT	1740.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	35.00
										DISTANCE	30.00
INPUT PARAMETERS											
Vehicles per hour	99.87	1.47	4.64	73.80	0.26	2.12	18.49	1.96	6.19	% A	91.15
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	2.07
NOISE CALCULATIONS											
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05	% HT	6.77
ADJUSTMENTS											
Flow	14.25	-4.08	0.92	12.93	-11.59	-2.47	6.92	-2.83	2.17		
Distance	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	66.71
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	60.63
LEQ	56.51	47.90	58.12	55.19	40.39	54.72	49.18	49.15	59.37	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	60.63		EVENING LEQ	58.05		NIGHT LEQ	60.12		Use hour?	no
										GRADE dB	0.00
		CNEL	**66.71**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard**

Segment: **North of Whittier Boulevard Frontage Road**

	DAYTIME			EVENING			NIGHTTIME			ADT	22660.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	45.00
										DISTANCE	60.00
INPUT PARAMETERS											
Vehicles per hour	1312.39	27.19	45.32	974.38	4.53	7.55	241.71	37.77	62.94	% A	92
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3
NOISE CALCULATIONS											
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14	% HT	5
ADJUSTMENTS											
Flow	24.34	7.51	9.72	23.05	-0.28	1.94	16.99	8.93	11.15		
Distance	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	75.67
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	70.37
LEQ	67.83	59.27	66.00	66.53	51.49	58.22	60.48	60.69	67.43	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	70.37		EVENING LEQ	67.25		NIGHT LEQ	68.93		Use hour?	no
										GRADE dB	0.00
		CNEL	**75.67**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Plus Project Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard**

Segment: **North of Whittier Boulevard Frontage Road**

	DAYTIME			EVENING			NIGHTTIME			ADT	23350.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	45.00
										DISTANCE	60.00
INPUT PARAMETERS											
Vehicles per hour	1349.27	27.83	48.85	1001.76	4.64	8.14	248.50	38.65	67.85	% A	91.79
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	2.98
NOISE CALCULATIONS											
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14	% HT	5.23
ADJUSTMENTS											
Flow	24.46	7.61	10.05	23.17	-0.17	2.27	17.12	9.03	11.48		
Distance	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	75.92
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	70.57
LEQ	67.95	59.37	66.33	66.65	51.59	58.55	60.60	60.79	67.76	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	70.57		EVENING LEQ	67.39		NIGHT LEQ	69.20		Use hour?	no
										GRADE dB	0.00
		CNEL	**75.92**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard**

Segment: **South of Whittier Boulevard Frontage Road**

	DAYTIME			EVENING			NIGHTTIME			ADT	22080.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	45.00
										DISTANCE	60.00
INPUT PARAMETERS											
Vehicles per hour	1278.80	26.50	44.16	949.44	4.42	7.36	235.52	36.80	61.33	% A	92
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3
NOISE CALCULATIONS											
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14	% HT	5
ADJUSTMENTS											
Flow	24.23	7.39	9.61	22.94	-0.39	1.83	16.88	8.82	11.04		
Distance	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	75.56
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	70.26
LEQ	67.71	59.15	65.89	66.42	51.37	58.11	60.37	60.58	67.32	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	70.26		EVENING LEQ	67.13		NIGHT LEQ	68.82		Use hour?	no
										GRADE dB	0.00
		CNEL	**75.56**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Plus Project Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard**

Segment: **South of Whittier Boulevard Frontage Road**

	DAYTIME			EVENING			NIGHTTIME			ADT	22250.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	45.00
										DISTANCE	60.00
INPUT PARAMETERS											
Vehicles per hour	1287.89	26.65	45.03	956.19	4.44	7.51	237.19	37.02	62.54	% A	91.95
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	2.99
NOISE CALCULATIONS											
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14	% HT	5.06
ADJUSTMENTS											
Flow	24.26	7.42	9.70	22.97	-0.36	1.92	16.91	8.85	11.12		
Distance	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	75.62
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	70.31
LEQ	67.74	59.18	65.98	66.45	51.40	58.20	60.40	60.61	67.40	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	70.31		EVENING LEQ	67.17		NIGHT LEQ	68.89		Use hour?	no
										GRADE dB	0.00
		CNEL	**75.62**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard**

Segment: **North of Mar Vista Street**

	DAYTIME			EVENING			NIGHTTIME			ADT	20650.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	45.00
										DISTANCE	60.00
INPUT PARAMETERS											
Vehicles per hour	1195.98	24.78	41.30	887.95	4.13	6.88	220.27	34.42	57.36	% A	92
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3
NOISE CALCULATIONS											
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14	% HT	5
ADJUSTMENTS											
Flow	23.94	7.10	9.32	22.65	-0.68	1.54	16.59	8.53	10.75		
Distance	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	75.27
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	69.97
LEQ	67.42	58.86	65.60	66.13	51.08	57.82	60.07	60.29	67.03	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	69.97		EVENING LEQ	66.84		NIGHT LEQ	68.53		Use hour?	no
										GRADE dB	0.00
		CNEL	**75.27**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Plus Project Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard**

Segment: **North of Mar Vista Street**

	DAYTIME			EVENING			NIGHTTIME			ADT	20820.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	45.00
										DISTANCE	60.00
INPUT PARAMETERS											
Vehicles per hour	1205.07	24.94	42.17	894.70	4.16	7.03	221.94	34.63	58.57	% A	91.94
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	2.99
NOISE CALCULATIONS											
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14	% HT	5.06
ADJUSTMENTS											
Flow	23.97	7.13	9.41	22.68	-0.65	1.63	16.62	8.56	10.84		
Distance	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	75.33
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	70.02
LEQ	67.45	58.89	65.69	66.16	51.11	57.91	60.11	60.32	67.12	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	70.02		EVENING LEQ	66.88		NIGHT LEQ	68.60		Use hour?	no
										GRADE dB	0.00
		CNEL	**75.33**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard**

Segment: **South of Mar Vista Street**

	DAYTIME			EVENING			NIGHTTIME			ADT	18760.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	45.00
										DISTANCE	60.00
INPUT PARAMETERS											
Vehicles per hour	1086.52	22.51	37.52	806.68	3.75	6.25	200.11	31.27	52.11	% A	92
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3
NOISE CALCULATIONS											
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14	% HT	5
ADJUSTMENTS											
Flow	23.52	6.69	8.90	22.23	-1.10	1.12	16.17	8.11	10.33		
Distance	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	74.85
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	69.55
LEQ	67.01	58.45	65.18	65.71	50.67	57.40	59.66	59.87	66.61	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	69.55		EVENING LEQ	66.43		NIGHT LEQ	68.11		Use hour?	no
										GRADE dB	0.00
		CNEL	**74.85**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Plus Project Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard**

Segment: **South of Mar Vista Street**

	DAYTIME			EVENING			NIGHTTIME			ADT	18930.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	45.00
										DISTANCE	60.00
INPUT PARAMETERS											
Vehicles per hour	1095.60	22.67	38.39	813.43	3.78	6.40	201.78	31.48	53.32	% A	91.94
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	2.99
NOISE CALCULATIONS											
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14	% HT	5.07
ADJUSTMENTS											
Flow	23.56	6.72	9.00	22.27	-1.07	1.22	16.21	8.14	10.43		
Distance	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	74.92
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	69.61
LEQ	67.04	58.48	65.28	65.75	50.70	57.50	59.69	59.90	66.71	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	69.61		EVENING LEQ	66.47		NIGHT LEQ	68.19		Use hour?	no
										GRADE dB	0.00
		CNEL	**74.92**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard**

Segment: **North of Pacific Place**

	DAYTIME			EVENING			NIGHTTIME			ADT	18660.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	45.00
										DISTANCE	60.00
INPUT PARAMETERS											
Vehicles per hour	1080.73	22.39	37.32	802.38	3.73	6.22	199.04	31.10	51.83	% A	92
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3
NOISE CALCULATIONS											
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14	% HT	5
ADJUSTMENTS											
Flow	23.50	6.66	8.88	22.21	-1.12	1.10	16.15	8.09	10.31		
Distance	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	74.83
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	69.53
LEQ	66.98	58.42	65.16	65.69	50.64	57.38	59.63	59.85	66.59	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	69.53		EVENING LEQ	66.40		NIGHT LEQ	68.09		Use hour?	no
										GRADE dB	0.00
		CNEL	**74.83**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Plus Project Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard**

Segment: **North of Pacific Place**

	DAYTIME			EVENING			NIGHTTIME			ADT	18830.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	45.00
										DISTANCE	60.00
INPUT PARAMETERS											
Vehicles per hour	1089.81	22.55	38.19	809.13	3.76	6.37	200.71	31.32	53.04	% A	91.94
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	2.99
NOISE CALCULATIONS											
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14	% HT	5.07
ADJUSTMENTS											
Flow	23.54	6.69	8.98	22.24	-1.09	1.20	16.19	8.12	10.41		
Distance	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	74.90
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	69.59
LEQ	67.02	58.45	65.26	65.72	50.67	57.48	59.67	59.88	66.69	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	69.59		EVENING LEQ	66.45		NIGHT LEQ	68.17		Use hour?	no
										GRADE dB	0.00
		CNEL	**74.90**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard**

Segment: **South of Pacific Place**

	DAYTIME			EVENING			NIGHTTIME			ADT	16260.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	45.00
										DISTANCE	60.00
INPUT PARAMETERS											
Vehicles per hour	941.73	19.51	32.52	699.18	3.25	5.42	173.44	27.10	45.17	% A	92
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3
NOISE CALCULATIONS											
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14	% HT	5
ADJUSTMENTS											
Flow	22.90	6.07	8.28	21.61	-1.72	0.50	15.55	7.49	9.71		
Distance	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	74.23
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	68.93
LEQ	66.38	57.83	64.56	65.09	50.04	56.78	59.04	59.25	65.99	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	68.93		EVENING LEQ	65.81		NIGHT LEQ	67.49		Use hour?	no
										GRADE dB	0.00
		CNEL	**74.23**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Plus Project Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard**

Segment: **South of Pacific Place**

	DAYTIME			EVENING			NIGHTTIME			ADT	16960.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	45.00
										DISTANCE	60.00
INPUT PARAMETERS											
Vehicles per hour	979.14	20.16	36.10	726.96	3.36	6.02	180.33	27.99	50.14	% A	91.71
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	2.97
NOISE CALCULATIONS											
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14	% HT	5.32
ADJUSTMENTS											
Flow	23.07	6.21	8.74	21.78	-1.58	0.96	15.72	7.63	10.16		
Distance	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	74.57
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	69.20
LEQ	66.55	57.97	65.02	65.26	50.18	57.24	59.21	59.39	66.44	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	69.20		EVENING LEQ	66.01		NIGHT LEQ	67.86		Use hour?	no
										GRADE dB	0.00
		CNEL	**74.57**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard**

Segment: **North of Washington Boulevard**

	DAYTIME			EVENING			NIGHTTIME			ADT	11550.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	45.00
										DISTANCE	60.00
INPUT PARAMETERS											
Vehicles per hour	668.94	13.86	23.10	496.65	2.31	3.85	123.20	19.25	32.08	% A	92
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3
NOISE CALCULATIONS											
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14	% HT	5
ADJUSTMENTS											
Flow	21.42	4.58	6.80	20.12	-3.20	-0.98	14.07	6.01	8.22		
Distance	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	72.74
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	67.44
LEQ	64.90	56.34	63.08	63.61	48.56	55.30	57.55	57.77	64.50	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	67.44		EVENING LEQ	64.32		NIGHT LEQ	66.01		Use hour?	no
										GRADE dB	0.00
		CNEL	**72.74**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Plus Project Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard**

Segment: **North of Washington Boulevard**

	DAYTIME			EVENING			NIGHTTIME			ADT	12120.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	45.00
										DISTANCE	60.00
INPUT PARAMETERS											
Vehicles per hour	699.40	14.38	26.02	519.27	2.40	4.34	128.81	19.98	36.14	% A	91.67
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	2.97
NOISE CALCULATIONS											
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14	% HT	5.37
ADJUSTMENTS											
Flow	21.61	4.74	7.31	20.32	-3.04	-0.47	14.26	6.17	8.74		
Distance	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	73.14
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	67.76
LEQ	65.09	56.50	63.59	63.80	48.72	55.81	57.74	57.93	65.02	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	67.76		EVENING LEQ	64.55		NIGHT LEQ	66.43		Use hour?	no
										GRADE dB	0.00
		CNEL	**73.14**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard**

Segment: **North of Washington Boulevard**

	DAYTIME			EVENING			NIGHTTIME			ADT	16790.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	45.00
										DISTANCE	60.00
INPUT PARAMETERS											
Vehicles per hour	972.42	20.15	33.58	721.97	3.36	5.60	179.09	27.98	46.64	% A	92
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3
NOISE CALCULATIONS											
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14	% HT	5
ADJUSTMENTS											
Flow	23.04	6.20	8.42	21.75	-1.58	0.64	15.69	7.63	9.85		
Distance	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	74.37
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	69.07
LEQ	66.52	57.96	64.70	65.23	50.18	56.92	59.18	59.39	66.13	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	69.07		EVENING LEQ	65.94		NIGHT LEQ	67.63		Use hour?	no
										GRADE dB	0.00
		CNEL	**74.37**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Plus Project Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard**

Segment: **North of Washington Boulevard**

	DAYTIME			EVENING			NIGHTTIME			ADT	16950.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	45.00
										DISTANCE	60.00
INPUT PARAMETERS											
Vehicles per hour	980.97	20.30	34.40	728.32	3.38	5.73	180.67	28.19	47.78	% A	91.93
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	2.99
NOISE CALCULATIONS											
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14	% HT	5.07
ADJUSTMENTS											
Flow	23.08	6.24	8.53	21.79	-1.55	0.75	15.73	7.66	9.95		
Distance	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	74.45
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	69.13
LEQ	66.56	58.00	64.81	65.27	50.21	57.03	59.21	59.42	66.23	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	69.13		EVENING LEQ	65.99		NIGHT LEQ	67.72		Use hour?	no
										GRADE dB	0.00
		CNEL	**74.45**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Pacific Place**

Segment: **West of Whittier Boulevard**

	DAYTIME			EVENING			NIGHTTIME			ADT	3700.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	35.00
										DISTANCE	30.00
INPUT PARAMETERS											
Vehicles per hour	226.92	2.77	1.08	167.70	0.49	0.49	42.00	3.70	1.44	% A	97.4
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	1.84
NOISE CALCULATIONS											
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05	% HT	0.74
ADJUSTMENTS											
Flow	17.81	-1.31	-5.42	16.50	-8.82	-8.81	10.49	-0.06	-4.17		
Distance	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	64.79
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	61.08
LEQ	60.07	50.66	51.78	58.76	43.15	48.38	52.74	51.91	53.03	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	61.08		EVENING LEQ	59.25		NIGHT LEQ	57.36		Use hour?	no
										GRADE dB	0.00
		CNEL	**64.79**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Plus Project Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Pacific Place**

Segment: **West of Whittier Boulevard**

	DAYTIME			EVENING			NIGHTTIME			ADT	4570.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	35.00
										DISTANCE	30.00
INPUT PARAMETERS											
Vehicles per hour	273.43	3.59	5.47	202.07	0.64	2.50	50.61	4.79	7.29	% A	95.02
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	1.93
NOISE CALCULATIONS											
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05	% HT	3.04
ADJUSTMENTS											
Flow	18.62	-0.20	1.63	17.31	-7.70	-1.76	11.30	1.05	2.88		
Distance	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	68.45
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	63.30
LEQ	60.88	51.78	58.83	59.57	44.27	55.43	53.55	53.03	60.08	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	63.30		EVENING LEQ	61.08		NIGHT LEQ	61.60		Use hour?	no
										GRADE dB	0.00
		CNEL	**68.45**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Washington Boulevard**

Segment: **West of Whittier Boulevard**

	DAYTIME			EVENING			NIGHTTIME			ADT	26770.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	45.00
										DISTANCE	55.00
INPUT PARAMETERS											
Vehicles per hour	1550.43	32.12	53.54	1151.11	5.35	8.92	285.55	44.62	74.36	% A	92
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3
NOISE CALCULATIONS											
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14	% HT	5
ADJUSTMENTS											
Flow	25.07	8.23	10.45	23.77	0.45	2.67	17.72	9.66	11.88		
Distance	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	76.77
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	71.47
LEQ	68.93	60.37	67.11	67.63	52.59	59.33	61.58	61.80	68.53	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	71.47		EVENING LEQ	68.35		NIGHT LEQ	70.04		Use hour?	no
										GRADE dB	0.00
		CNEL	**76.77**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Plus Project Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Washington Boulevard**

Segment: **West of Whittier Boulevard**

	DAYTIME			EVENING			NIGHTTIME			ADT	27150.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	45.00
										DISTANCE	55.00
INPUT PARAMETERS											
Vehicles per hour	1570.74	32.47	55.49	1166.19	5.41	9.25	289.29	45.10	77.06	% A	91.90
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	2.99
NOISE CALCULATIONS											
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14	% HT	5.11
ADJUSTMENTS											
Flow	25.12	8.28	10.60	23.83	0.50	2.82	17.78	9.70	12.03		
Distance	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	76.89
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	71.56
LEQ	68.98	60.42	67.26	67.69	52.63	59.48	61.64	61.84	68.69	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	71.56		EVENING LEQ	68.42		NIGHT LEQ	70.16		Use hour?	no
										GRADE dB	0.00
		CNEL	**76.89**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Washington Boulevard**

Segment: **East of Whittier Boulevard**

	DAYTIME			EVENING			NIGHTTIME			ADT	23270.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	40.00
										DISTANCE	55.00
INPUT PARAMETERS											
Vehicles per hour	1347.72	27.92	46.54	1000.61	4.65	7.76	248.21	38.78	64.64	% A	92
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3
NOISE CALCULATIONS											
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16	% HT	5
ADJUSTMENTS											
Flow	24.97	8.13	10.35	23.68	0.35	2.57	17.62	9.56	11.78		
Distance	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	75.42
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	69.84
LEQ	66.85	58.96	66.03	65.55	51.18	58.25	59.50	60.39	67.45	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	69.84		EVENING LEQ	66.42		NIGHT LEQ	68.78		Use hour?	no
										GRADE dB	0.00
		CNEL	**75.42**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Plus Project Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Washington Boulevard**

Segment: **East of Whittier Boulevard**

	DAYTIME			EVENING			NIGHTTIME			ADT	23300.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	40.00
										DISTANCE	55.00
INPUT PARAMETERS											
Vehicles per hour	1349.32	27.95	46.69	1001.80	4.66	7.78	248.51	38.82	64.85	% A	91.99
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3.00
NOISE CALCULATIONS											
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16	% HT	5.01
ADJUSTMENTS											
Flow	24.97	8.14	10.37	23.68	0.36	2.58	17.63	9.56	11.79		
Distance	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	75.43
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	69.85
LEQ	66.85	58.97	66.04	65.56	51.18	58.26	59.50	60.39	67.47	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	69.85		EVENING LEQ	66.43		NIGHT LEQ	68.79		Use hour?	no
										GRADE dB	0.00
		CNEL	**75.43**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard Frontage Road**

Segment: **West of Whittier Boulevard**

	DAYTIME			EVENING			NIGHTTIME			ADT	820.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	35.00
										DISTANCE	30.00
INPUT PARAMETERS											
Vehicles per hour	50.29	0.61	0.24	37.17	0.11	0.11	9.31	0.82	0.32	% A	97.4
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	1.84
NOISE CALCULATIONS											
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05	% HT	0.74
ADJUSTMENTS											
Flow	11.27	-7.86	-11.96	9.95	-15.37	-15.36	3.94	-6.61	-10.71		
Distance	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	58.25
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	54.54
LEQ	53.53	44.12	45.24	52.21	36.61	41.84	46.20	45.37	46.48	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	54.54		EVENING LEQ	52.70		NIGHT LEQ	50.81		Use hour?	no
										GRADE dB	0.00
		CNEL	**58.25**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Plus Project Alternative with Mar Vista Street Extension Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard Frontage Road**

Segment: **West of Whittier Boulevard**

	DAYTIME			EVENING			NIGHTTIME			ADT	870.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	35.00
										DISTANCE	30.00
INPUT PARAMETERS											
Vehicles per hour	52.96	0.66	0.49	39.14	0.12	0.22	9.80	0.88	0.66	% A	96.68
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	1.87
NOISE CALCULATIONS											
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05	% HT	1.43
ADJUSTMENTS											
Flow	11.49	-7.54	-8.83	10.18	-15.05	-12.23	4.17	-6.29	-7.58		
Distance	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	59.53
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	55.23
LEQ	53.75	44.44	48.36	52.44	36.93	44.97	46.43	45.69	49.61	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	55.23		EVENING LEQ	53.26		NIGHT LEQ	52.37		Use hour?	no
										GRADE dB	0.00
		CNEL	**59.53**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard Frontage Road**

Segment: **North of Mar Vista Street**

	DAYTIME			EVENING			NIGHTTIME			ADT	870.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	35.00
										DISTANCE	30.00
INPUT PARAMETERS											
Vehicles per hour	53.36	0.65	0.25	39.43	0.12	0.12	9.88	0.87	0.34	% A	97.4
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	1.84
NOISE CALCULATIONS											
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05	% HT	0.74
ADJUSTMENTS											
Flow	11.53	-7.60	-11.70	10.21	-15.11	-15.10	4.20	-6.35	-10.45		
Distance	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	58.51
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	54.80
LEQ	53.78	44.38	45.49	52.47	36.87	42.10	46.46	45.62	46.74	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	54.80		EVENING LEQ	52.96		NIGHT LEQ	51.07		Use hour?	no
										GRADE dB	0.00
		CNEL	**58.51**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Plus Project Alternative with Mar Vista Street Extension Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard Frontage Road**

Segment: **North of Mar Vista Street**

	DAYTIME			EVENING			NIGHTTIME			ADT	1290.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	35.00
										DISTANCE	30.00
INPUT PARAMETERS											
Vehicles per hour	75.81	1.05	2.37	56.02	0.19	1.09	14.03	1.39	3.16	% A	93.33
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	1.99
NOISE CALCULATIONS											
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05	% HT	4.67
ADJUSTMENTS											
Flow	13.05	-5.55	-1.99	11.74	-13.06	-5.39	5.72	-4.30	-0.74		
Distance	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	64.20
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	58.54
LEQ	55.31	46.43	55.20	54.00	38.92	51.80	47.98	47.68	56.45	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	58.54		EVENING LEQ	56.13		NIGHT LEQ	57.50		Use hour?	no
										GRADE dB	0.00
		CNEL	**64.20**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard Frontage Road**

Segment: **South of Mar Vista Street**

	DAYTIME			EVENING			NIGHTTIME			ADT	870.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	35.00
										DISTANCE	30.00
INPUT PARAMETERS											
Vehicles per hour	53.36	0.65	0.25	39.43	0.12	0.12	9.88	0.87	0.34	% A	97.4
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	1.84
NOISE CALCULATIONS											
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05	% HT	0.74
ADJUSTMENTS											
Flow	11.53	-7.60	-11.70	10.21	-15.11	-15.10	4.20	-6.35	-10.45		
Distance	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	58.51
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	54.80
LEQ	53.78	44.38	45.49	52.47	36.87	42.10	46.46	45.62	46.74	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	54.80		EVENING LEQ	52.96		NIGHT LEQ	51.07		Use hour?	no
										GRADE dB	0.00
		CNEL	**58.51**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Plus Project Alternative with Mar Vista Street Extension Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard Frontage Road**

Segment: **South of Mar Vista Street**

	DAYTIME			EVENING			NIGHTTIME			ADT	1300.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	35.00
										DISTANCE	30.00
INPUT PARAMETERS											
Vehicles per hour	76.34	1.06	2.42	56.42	0.19	1.11	14.13	1.41	3.23	% A	93.27
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	1.99
NOISE CALCULATIONS											
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05	% HT	4.73
ADJUSTMENTS											
Flow	13.08	-5.51	-1.90	11.77	-13.02	-5.30	5.76	-4.26	-0.65		
Distance	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	64.28
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	58.60
LEQ	55.34	46.46	55.29	54.03	38.96	51.90	48.01	47.71	56.54	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	58.60		EVENING LEQ	56.18		NIGHT LEQ	57.58		Use hour?	no
										GRADE dB	0.00
		CNEL	**64.28**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard**

Segment: **North of Whittier Boulevard Frontage Road**

	DAYTIME			EVENING			NIGHTTIME			ADT	22660.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	45.00
										DISTANCE	60.00
INPUT PARAMETERS											
Vehicles per hour	1312.39	27.19	45.32	974.38	4.53	7.55	241.71	37.77	62.94	% A	92
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3
NOISE CALCULATIONS											
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14	% HT	5
ADJUSTMENTS											
Flow	24.34	7.51	9.72	23.05	-0.28	1.94	16.99	8.93	11.15		
Distance	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	75.67
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	70.37
LEQ	67.83	59.27	66.00	66.53	51.49	58.22	60.48	60.69	67.43	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	70.37		EVENING LEQ	67.25		NIGHT LEQ	68.93		Use hour?	no
										GRADE dB	0.00
		CNEL	**75.67**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Plus Project Alternative with Mar Vista Street Extension Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard**

Segment: **North of Whittier Boulevard Frontage Road**

	DAYTIME			EVENING			NIGHTTIME			ADT	23300.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	45.00
										DISTANCE	60.00
INPUT PARAMETERS											
Vehicles per hour	1346.60	27.78	48.60	999.78	4.63	8.10	248.01	38.58	67.50	% A	91.80
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	2.98
NOISE CALCULATIONS											
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14	% HT	5.21
ADJUSTMENTS											
Flow	24.45	7.60	10.03	23.16	-0.18	2.25	17.11	9.03	11.45		
Distance	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	75.90
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	70.55
LEQ	67.94	59.36	66.31	66.64	51.58	58.53	60.59	60.79	67.73	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	70.55		EVENING LEQ	67.38		NIGHT LEQ	69.18		Use hour?	no
										GRADE dB	0.00
		CNEL	**75.90**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard**

Segment: **South of Whittier Boulevard Frontage Road**

	DAYTIME			EVENING			NIGHTTIME			ADT	22080.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	45.00
										DISTANCE	60.00
INPUT PARAMETERS											
Vehicles per hour	1278.80	26.50	44.16	949.44	4.42	7.36	235.52	36.80	61.33	% A	92
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3
NOISE CALCULATIONS											
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14	% HT	5
ADJUSTMENTS											
Flow	24.23	7.39	9.61	22.94	-0.39	1.83	16.88	8.82	11.04		
Distance	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	75.56
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	70.26
LEQ	67.71	59.15	65.89	66.42	51.37	58.11	60.37	60.58	67.32	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	70.26		EVENING LEQ	67.13		NIGHT LEQ	68.82		Use hour?	no
										GRADE dB	0.00
		CNEL	**75.56**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Plus Project Alternative with Mar Vista Street Extension Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard**

Segment: **South of Whittier Boulevard Frontage Road**

	DAYTIME			EVENING			NIGHTTIME			ADT	22670.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	45.00
										DISTANCE	60.00
INPUT PARAMETERS											
Vehicles per hour	1310.33	27.04	47.18	972.85	4.51	7.86	241.33	37.55	65.53	% A	91.82
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	2.98
NOISE CALCULATIONS											
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14	% HT	5.20
ADJUSTMENTS											
Flow	24.34	7.48	9.90	23.04	-0.30	2.12	16.99	8.91	11.33		
Distance	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	75.77
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	70.43
LEQ	67.82	59.24	66.18	66.53	51.46	58.40	60.47	60.67	67.61	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	70.43		EVENING LEQ	67.26		NIGHT LEQ	69.05		Use hour?	no
										GRADE dB	0.00
		CNEL	**75.77**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard**

Segment: **North of Mar Vista Street**

	DAYTIME			EVENING			NIGHTTIME			ADT	20650.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	45.00
										DISTANCE	60.00
INPUT PARAMETERS											
Vehicles per hour	1195.98	24.78	41.30	887.95	4.13	6.88	220.27	34.42	57.36	% A	92
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3
NOISE CALCULATIONS											
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14	% HT	5
ADJUSTMENTS											
Flow	23.94	7.10	9.32	22.65	-0.68	1.54	16.59	8.53	10.75		
Distance	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	75.27
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	69.97
LEQ	67.42	58.86	65.60	66.13	51.08	57.82	60.07	60.29	67.03	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	69.97		EVENING LEQ	66.84		NIGHT LEQ	68.53		Use hour?	no
										GRADE dB	0.00
		CNEL	**75.27**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Plus Project Alternative with Mar Vista Street Extension Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard**

Segment: **North of Mar Vista Street**

	DAYTIME			EVENING			NIGHTTIME			ADT	21240.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	45.00
										DISTANCE	60.00
INPUT PARAMETERS											
Vehicles per hour	1227.51	25.32	44.32	911.36	4.22	7.39	226.07	35.17	61.56	% A	91.80
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	2.98
NOISE CALCULATIONS											
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14	% HT	5.22
ADJUSTMENTS											
Flow	24.05	7.20	9.63	22.76	-0.58	1.85	16.70	8.62	11.05		
Distance	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	75.50
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	70.15
LEQ	67.54	58.96	65.91	66.24	51.18	58.13	60.19	60.38	67.33	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	70.15		EVENING LEQ	66.98		NIGHT LEQ	68.78		Use hour?	no
										GRADE dB	0.00
		CNEL	**75.50**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard**

Segment: **South of Mar Vista Street**

	DAYTIME			EVENING			NIGHTTIME			ADT	18760.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	45.00
										DISTANCE	60.00
INPUT PARAMETERS											
Vehicles per hour	1086.52	22.51	37.52	806.68	3.75	6.25	200.11	31.27	52.11	% A	92
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3
NOISE CALCULATIONS											
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14	% HT	5
ADJUSTMENTS											
Flow	23.52	6.69	8.90	22.23	-1.10	1.12	16.17	8.11	10.33		
Distance	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	74.85
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	69.55
LEQ	67.01	58.45	65.18	65.71	50.67	57.40	59.66	59.87	66.61	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	69.55		EVENING LEQ	66.43		NIGHT LEQ	68.11		Use hour?	no
										GRADE dB	0.00
		CNEL	**74.85**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Plus Project Alternative with Mar Vista Street Extension Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard**

Segment: **South of Mar Vista Street**

	DAYTIME			EVENING			NIGHTTIME			ADT	19030.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	45.00
										DISTANCE	60.00
INPUT PARAMETERS											
Vehicles per hour	1100.95	22.76	38.90	817.39	3.79	6.48	202.76	31.61	54.03	% A	91.90
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	2.99
NOISE CALCULATIONS											
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14	% HT	5.11
ADJUSTMENTS											
Flow	23.58	6.73	9.06	22.29	-1.05	1.28	16.23	8.16	10.49		
Distance	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	74.97
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	69.64
LEQ	67.06	58.49	65.34	65.77	50.71	57.56	59.71	59.92	66.77	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	69.64		EVENING LEQ	66.50		NIGHT LEQ	68.24		Use hour?	no
										GRADE dB	0.00
		CNEL	**74.97**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard**

Segment: **North of Pacific Place**

	DAYTIME			EVENING			NIGHTTIME			ADT	18660.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	45.00
										DISTANCE	60.00
INPUT PARAMETERS											
Vehicles per hour	1080.73	22.39	37.32	802.38	3.73	6.22	199.04	31.10	51.83	% A	92
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3
NOISE CALCULATIONS											
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14	% HT	5
ADJUSTMENTS											
Flow	23.50	6.66	8.88	22.21	-1.12	1.10	16.15	8.09	10.31		
Distance	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	74.83
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	69.53
LEQ	66.98	58.42	65.16	65.69	50.64	57.38	59.63	59.85	66.59	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	69.53		EVENING LEQ	66.40		NIGHT LEQ	68.09		Use hour?	no
										GRADE dB	0.00
		CNEL	**74.83**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Plus Project Alternative with Mar Vista Street Extension Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard**

Segment: **North of Pacific Place**

	DAYTIME			EVENING			NIGHTTIME			ADT	18930.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	45.00
										DISTANCE	60.00
INPUT PARAMETERS											
Vehicles per hour	1095.16	22.64	38.70	813.09	3.77	6.45	201.70	31.45	53.75	% A	91.90
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	2.99
NOISE CALCULATIONS											
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14	% HT	5.11
ADJUSTMENTS											
Flow	23.56	6.71	9.04	22.26	-1.07	1.26	16.21	8.14	10.47		
Distance	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	74.94
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	69.62
LEQ	67.04	58.47	65.32	65.75	50.69	57.54	59.69	59.90	66.75	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	69.62		EVENING LEQ	66.47		NIGHT LEQ	68.22		Use hour?	no
										GRADE dB	0.00
		CNEL	**74.94**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard**

Segment: **South of Pacific Place**

	DAYTIME			EVENING			NIGHTTIME			ADT	16260.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	45.00
										DISTANCE	60.00
INPUT PARAMETERS											
Vehicles per hour	941.73	19.51	32.52	699.18	3.25	5.42	173.44	27.10	45.17	% A	92
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3
NOISE CALCULATIONS											
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14	% HT	5
ADJUSTMENTS											
Flow	22.90	6.07	8.28	21.61	-1.72	0.50	15.55	7.49	9.71		
Distance	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	74.23
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	68.93
LEQ	66.38	57.83	64.56	65.09	50.04	56.78	59.04	59.25	65.99	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	68.93		EVENING LEQ	65.81		NIGHT LEQ	67.49		Use hour?	no
										GRADE dB	0.00
		CNEL	**74.23**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Plus Project Alternative with Mar Vista Street Extension Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard**

Segment: **South of Pacific Place**

	DAYTIME			EVENING			NIGHTTIME			ADT	16960.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	45.00
										DISTANCE	60.00
INPUT PARAMETERS											
Vehicles per hour	979.14	20.16	36.10	726.96	3.36	6.02	180.33	27.99	50.14	% A	91.71
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	2.97
NOISE CALCULATIONS											
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14	% HT	5.32
ADJUSTMENTS											
Flow	23.07	6.21	8.74	21.78	-1.58	0.96	15.72	7.63	10.16		
Distance	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	74.57
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	69.20
LEQ	66.55	57.97	65.02	65.26	50.18	57.24	59.21	59.39	66.44	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	69.20		EVENING LEQ	66.01		NIGHT LEQ	67.86		Use hour?	no
										GRADE dB	0.00
		CNEL	**74.57**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard**

Segment: **North of Washington Boulevard**

	DAYTIME			EVENING			NIGHTTIME			ADT	11550.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	45.00
										DISTANCE	60.00
INPUT PARAMETERS											
Vehicles per hour	668.94	13.86	23.10	496.65	2.31	3.85	123.20	19.25	32.08	% A	92
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3
NOISE CALCULATIONS											
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14	% HT	5
ADJUSTMENTS											
Flow	21.42	4.58	6.80	20.12	-3.20	-0.98	14.07	6.01	8.22		
Distance	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	72.74
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	67.44
LEQ	64.90	56.34	63.08	63.61	48.56	55.30	57.55	57.77	64.50	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	67.44		EVENING LEQ	64.32		NIGHT LEQ	66.01		Use hour?	no
										GRADE dB	0.00
		CNEL	**72.74**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Plus Project Alternative with Mar Vista Street Extension Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard**

Segment: **North of Washington Boulevard**

	DAYTIME			EVENING			NIGHTTIME			ADT	12120.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	45.00
										DISTANCE	60.00
INPUT PARAMETERS											
Vehicles per hour	699.40	14.38	26.02	519.27	2.40	4.34	128.81	19.98	36.14	% A	91.67
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	2.97
NOISE CALCULATIONS											
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14	% HT	5.37
ADJUSTMENTS											
Flow	21.61	4.74	7.31	20.32	-3.04	-0.47	14.26	6.17	8.74		
Distance	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	73.14
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	67.76
LEQ	65.09	56.50	63.59	63.80	48.72	55.81	57.74	57.93	65.02	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	67.76		EVENING LEQ	64.55		NIGHT LEQ	66.43		Use hour?	no
										GRADE dB	0.00
		CNEL	**73.14**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard**

Segment: **North of Washington Boulevard**

	DAYTIME			EVENING			NIGHTTIME			ADT	16790.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	45.00
										DISTANCE	60.00
INPUT PARAMETERS											
Vehicles per hour	972.42	20.15	33.58	721.97	3.36	5.60	179.09	27.98	46.64	% A	92
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3
NOISE CALCULATIONS											
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14	% HT	5
ADJUSTMENTS											
Flow	23.04	6.20	8.42	21.75	-1.58	0.64	15.69	7.63	9.85		
Distance	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	74.37
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	69.07
LEQ	66.52	57.96	64.70	65.23	50.18	56.92	59.18	59.39	66.13	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	69.07		EVENING LEQ	65.94		NIGHT LEQ	67.63		Use hour?	no
										GRADE dB	0.00
		CNEL	**74.37**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Plus Project Alternative with Mar Vista Street Extension Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Whittier Boulevard**

Segment: **North of Washington Boulevard**

	DAYTIME			EVENING			NIGHTTIME			ADT	16950.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	45.00
										DISTANCE	60.00
INPUT PARAMETERS											
Vehicles per hour	980.97	20.30	34.40	728.32	3.38	5.73	180.67	28.19	47.78	% A	91.93
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	2.99
NOISE CALCULATIONS											
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14	% HT	5.07
ADJUSTMENTS											
Flow	23.08	6.24	8.53	21.79	-1.55	0.75	15.73	7.66	9.95		
Distance	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	74.45
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	69.13
LEQ	66.56	58.00	64.81	65.27	50.21	57.03	59.21	59.42	66.23	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	69.13		EVENING LEQ	65.99		NIGHT LEQ	67.72		Use hour?	no
										GRADE dB	0.00
		CNEL	**74.45**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Mar Vista**

Segment: **Whitter Boulevard Frontage Road to Whittier Boulevard**

	DAYTIME			EVENING			NIGHTTIME			ADT	11700.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	30.00
										DISTANCE	33.00
INPUT PARAMETERS											
Vehicles per hour	717.56	8.77	3.41	530.28	1.56	1.56	132.82	11.70	4.55	% A	97.4
Speed in MPH	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	1.84
NOISE CALCULATIONS											
Reference levels	62.51	73.11	78.76	62.51	73.11	78.76	62.51	73.11	78.76	% HT	0.74
ADJUSTMENTS											
Flow	23.48	4.36	0.25	22.17	-3.15	-3.14	16.16	5.60	1.50		
Distance	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	68.05
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	64.00
LEQ	62.73	54.20	55.75	61.41	46.70	52.35	55.40	55.45	57.00	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	64.00		EVENING LEQ	62.05		NIGHT LEQ	60.79		Use hour?	no
										GRADE dB	0.00
		CNEL	**68.05**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Plus Project Alternative with Mar Vista Street Extension Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Mar Vista**

Segment: **Whitter Boulevard Frontage Road to Whittier Boulevard**

	DAYTIME			EVENING			NIGHTTIME			ADT	12610.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	30.00
										DISTANCE	33.00
INPUT PARAMETERS											
Vehicles per hour	766.20	9.63	8.00	566.24	1.71	3.66	141.83	12.84	10.67	% A	96.50
Speed in MPH	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	1.87
NOISE CALCULATIONS											
Reference levels	62.51	73.11	78.76	62.51	73.11	78.76	62.51	73.11	78.76	% HT	1.61
ADJUSTMENTS											
Flow	23.77	4.76	3.96	22.45	-2.75	0.56	16.44	6.01	5.21		
Distance	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	69.82
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	65.01
LEQ	63.01	54.61	59.45	61.70	47.10	56.06	55.69	55.86	60.70	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	65.01		EVENING LEQ	62.86		NIGHT LEQ	62.86		Use hour?	no
										GRADE dB	0.00
		CNEL	**69.82**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Mar Vista**

Segment: **East of Whittier Boulevard**

	DAYTIME			EVENING			NIGHTTIME			ADT	5590.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	30.00
										DISTANCE	33.00
INPUT PARAMETERS											
Vehicles per hour	342.83	4.19	1.63	253.36	0.74	0.75	63.46	5.59	2.17	% A	97.4
Speed in MPH	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	1.84
NOISE CALCULATIONS											
Reference levels	62.51	73.11	78.76	62.51	73.11	78.76	62.51	73.11	78.76	% HT	0.74
ADJUSTMENTS											
Flow	20.27	1.15	-2.95	18.96	-6.36	-6.35	12.95	2.40	-1.70		
Distance	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	64.85
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	60.79
LEQ	59.52	51.00	52.54	58.21	43.49	49.15	52.19	52.25	53.79	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	60.79		EVENING LEQ	58.84		NIGHT LEQ	57.58		Use hour?	no
										GRADE dB	0.00
		CNEL	**64.85**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Plus Project Alternative with Mar Vista Street Extension Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Mar Vista**

Segment: **East of Whittier Boulevard**

	DAYTIME			EVENING			NIGHTTIME			ADT	5640.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	30.00
										DISTANCE	33.00
INPUT PARAMETERS											
Vehicles per hour	345.51	4.24	1.88	255.33	0.75	0.86	63.96	5.65	2.51	% A	97.29
Speed in MPH	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	1.84
NOISE CALCULATIONS											
Reference levels	62.51	73.11	78.76	62.51	73.11	78.76	62.51	73.11	78.76	% HT	0.85
ADJUSTMENTS											
Flow	20.31	1.20	-2.33	18.99	-6.31	-5.73	12.98	2.45	-1.08		
Distance	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	65.09
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	60.92
LEQ	59.55	51.04	53.17	58.24	43.54	49.77	52.23	52.29	54.42	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	60.92		EVENING LEQ	58.95		NIGHT LEQ	57.87		Use hour?	no
										GRADE dB	0.00
		CNEL	**65.09**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Pacific Place**

Segment: **West of Whittier Boulevard**

	DAYTIME			EVENING			NIGHTTIME			ADT	3700.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	35.00
										DISTANCE	30.00
INPUT PARAMETERS											
Vehicles per hour	226.92	2.77	1.08	167.70	0.49	0.49	42.00	3.70	1.44	% A	97.4
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	1.84
NOISE CALCULATIONS											
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05	% HT	0.74
ADJUSTMENTS											
Flow	17.81	-1.31	-5.42	16.50	-8.82	-8.81	10.49	-0.06	-4.17		
Distance	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	64.79
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	61.08
LEQ	60.07	50.66	51.78	58.76	43.15	48.38	52.74	51.91	53.03	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	61.08		EVENING LEQ	59.25		NIGHT LEQ	57.36		Use hour?	no
										GRADE dB	0.00
		CNEL	**64.79**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Plus Project Alternative with Mar Vista Street Extension Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Pacific Place**

Segment: **West of Whittier Boulevard**

	DAYTIME			EVENING			NIGHTTIME			ADT	4130.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	35.00
										DISTANCE	30.00
INPUT PARAMETERS											
Vehicles per hour	249.91	3.18	3.25	184.68	0.56	1.49	46.26	4.24	4.33	% A	96.10
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	1.89
NOISE CALCULATIONS											
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05	% HT	2.00
ADJUSTMENTS											
Flow	18.23	-0.73	-0.63	16.92	-8.23	-4.03	10.91	0.52	0.62		
Distance	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	66.97
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	62.32
LEQ	60.49	51.25	56.57	59.18	43.74	53.17	53.16	52.50	57.81	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	62.32		EVENING LEQ	60.25		NIGHT LEQ	59.95		Use hour?	no
										GRADE dB	0.00
		CNEL	**66.97**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Washington Boulevard**

Segment: **West of Whittier Boulevard**

	DAYTIME			EVENING			NIGHTTIME			ADT	26770.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	45.00
										DISTANCE	55.00
INPUT PARAMETERS											
Vehicles per hour	1550.43	32.12	53.54	1151.11	5.35	8.92	285.55	44.62	74.36	% A	92
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3
NOISE CALCULATIONS											
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14	% HT	5
ADJUSTMENTS											
Flow	25.07	8.23	10.45	23.77	0.45	2.67	17.72	9.66	11.88		
Distance	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	76.77
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	71.47
LEQ	68.93	60.37	67.11	67.63	52.59	59.33	61.58	61.80	68.53	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	71.47		EVENING LEQ	68.35		NIGHT LEQ	70.04		Use hour?	no
										GRADE dB	0.00
		CNEL	**76.77**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Plus Project Alternative with Mar Vista Street Extension Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Washington Boulevard**

Segment: **West of Whittier Boulevard**

	DAYTIME			EVENING			NIGHTTIME			ADT	27150.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	45.00
										DISTANCE	55.00
INPUT PARAMETERS											
Vehicles per hour	1570.74	32.47	55.49	1166.19	5.41	9.25	289.29	45.10	77.06	% A	91.90
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	2.99
NOISE CALCULATIONS											
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14	% HT	5.11
ADJUSTMENTS											
Flow	25.12	8.28	10.60	23.83	0.50	2.82	17.78	9.70	12.03		
Distance	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	76.89
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	71.56
LEQ	68.98	60.42	67.26	67.69	52.63	59.48	61.64	61.84	68.69	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	71.56		EVENING LEQ	68.42		NIGHT LEQ	70.16		Use hour?	no
										GRADE dB	0.00
		CNEL	**76.89**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Washington Boulevard**

Segment: **East of Whittier Boulevard**

	DAYTIME			EVENING			NIGHTTIME			ADT	23270.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	40.00
										DISTANCE	55.00
INPUT PARAMETERS											
Vehicles per hour	1347.72	27.92	46.54	1000.61	4.65	7.76	248.21	38.78	64.64	% A	92
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3
NOISE CALCULATIONS											
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16	% HT	5
ADJUSTMENTS											
Flow	24.97	8.13	10.35	23.68	0.35	2.57	17.62	9.56	11.78		
Distance	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	75.42
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	69.84
LEQ	66.85	58.96	66.03	65.55	51.18	58.25	59.50	60.39	67.45	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	69.84		EVENING LEQ	66.42		NIGHT LEQ	68.78		Use hour?	no
										GRADE dB	0.00
		CNEL	**75.42**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Plus Project Alternative with Mar Vista Street Extension Traffic Noise

Project: **19391 Whittier Boulevard Business Park**

Road: **Washington Boulevard**

Segment: **East of Whittier Boulevard**

	DAYTIME			EVENING			NIGHTTIME			ADT	23430.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	40.00
										DISTANCE	55.00
INPUT PARAMETERS											
Vehicles per hour	1356.27	28.07	47.36	1006.96	4.68	7.89	249.79	38.99	65.78	% A	91.95
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3.00
NOISE CALCULATIONS											
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16	% HT	5.05
ADJUSTMENTS											
Flow	25.00	8.16	10.43	23.70	0.37	2.65	17.65	9.58	11.85		
Distance	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	75.48
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	69.88
LEQ	66.87	58.98	66.10	65.58	51.20	58.32	59.53	60.41	67.53	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	69.88		EVENING LEQ	66.46		NIGHT LEQ	68.84		Use hour?	no
										GRADE dB	0.00
		CNEL	**75.48**								

ADT'S BY LEG

FACTOR= 10.0 Use 10 (LA County), 12 (Riverside), or 11.5 (SB)

Intersection	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NORTH LEG	SOUTH LEG	EAST LEG	WEST LEG
Existing																	
Whittier Boulevard Frontage Road (NS) / Mar Vista Street (EW)	0	34	0	0	53	0	0	0	0	0	0	0	87	870	870	-	-
Whittier Boulevard (NS) / Whittier Boulevard Frontage Road (EW)	6	1140	0	0	1056	44	26	0	6	0	0	0	2,278	22,660	22,080	-	820
Whittier Boulevard (NS) / Mar Vista Street (EW)	0	876	121	157	815	0	0	0	0	64	0	217	2,250	20,650	18,760	5,590	-
Whittier Boulevard (NS) / Pacific Place (EW)	19	741	0	0	820	85	220	0	46	0	0	0	1,931	18,660	16,260	-	3,700
Whittier Boulevard (NS) / Washington Boulevard (EW)	264	387	236	0	443	86	158	1029	254	95	886	81	3,919	11,550	16,790	23,270	26,770
Project																	
Whittier Boulevard Frontage Road (NS) / Mar Vista Street (EW)	10	6	0	0	45	4	16	0	26	0	0	0	107	710	870	-	560
Whittier Boulevard (NS) / Whittier Boulevard Frontage Road (EW)	0	14	0	0	3	11	41	0	0	0	0	0	69	690	170	-	520
Whittier Boulevard (NS) / Mar Vista Street (EW)	0	14	0	0	3	0	0	0	0	0	0	0	17	170	170	-	-
Whittier Boulevard (NS) / Pacific Place (EW)	13	0	0	0	0	3	14	0	57	0	0	0	87	170	700	-	870
Whittier Boulevard (NS) / Washington Boulevard (EW)	0	3	0	0	13	31	7	0	0	0	0	3	57	570	160	30	380
Project w/ Alternative with Mar Vista Street Expansion																	
Whittier Boulevard Frontage Road (NS) / Mar Vista Street (EW)	0	0	0	4	17	0	0	61	26	0	5	21	134	420	430	910	920
Whittier Boulevard (NS) / Whittier Boulevard Frontage Road (EW)	0	47	0	0	12	1	4	0	0	0	0	0	64	640	590	-	50
Whittier Boulevard (NS) / Mar Vista Street (EW)	13	0	0	0	0	12	47	4	14	0	1	0	91	590	270	50	910
Whittier Boulevard (NS) / Pacific Place (EW)	0	13	0	0	14	0	0	0	43	0	0	0	70	270	700	-	430
Whittier Boulevard (NS) / Washington Boulevard (EW)	0	3	0	0	13	31	7	0	0	0	0	3	57	570	160	30	380
													-	-	-	-	-

APPENDIX F

SOUNDPLAN INPUT AND OUTPUT

Noise emissions of industry sources

Source n	Referer	Level		Frequency spectrum [dB(A)]																														Correctio		
				20	25	31	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1	1.3	1.6	2	2.5	3.2	4	5	6.3	8	10	12.5	16	20	Cwa	CI	C
			dB(A	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	kHz	kHz	kHz	kHz	kHz	kHz	kHz	kHz	kHz	kHz	kHz	kHz	kHz	kHz	dB	dB	dB
Loading	Lw/m²	Day	92.0	-	-	-	-	-	59	62	66	69	71	73	76	78	80	82	83	84	85	85	85	86	86	86	86	85	85	84	-	-	-	-	-	-	-
HVAC1	Lw/	Day	78.7	-28	-19	-8	0	18	27	24	39	44	46	50	52	56	59	62	67	69	66	69	70	68	69	66	67	64	64	58	51	48	41	33	-	-	-
HVAC2	Lw/	Day	78.7	-28	-19	-8	0	18	27	24	39	44	46	50	52	56	59	62	67	69	66	69	70	68	69	66	67	64	64	58	51	48	41	33	-	-	-
HVAC3	Lw/	Day	78.7	-28	-19	-8	0	18	27	24	39	44	46	50	52	56	59	62	67	69	66	69	70	68	69	66	67	64	64	58	51	48	41	33	-	-	-
HVAC4	Lw/	Day	78.7	-28	-19	-8	0	18	27	24	39	44	46	50	52	56	59	62	67	69	66	69	70	68	69	66	67	64	64	58	51	48	41	33	-	-	-
HVAC5	Lw/	Day	78.7	-28	-19	-8	0	18	27	24	39	44	46	50	52	56	59	62	67	69	66	69	70	68	69	66	67	64	64	58	51	48	41	33	-	-	-
HVAC6	Lw/	Day	78.7	-28	-19	-8	0	18	27	24	39	44	46	50	52	56	59	62	67	69	66	69	70	68	69	66	67	64	64	58	51	48	41	33	-	-	-
HVAC7	Lw/	Day	78.7	-28	-19	-8	0	18	27	24	39	44	46	50	52	56	59	62	67	69	66	69	70	68	69	66	67	64	64	58	51	48	41	33	-	-	-
HVAC8	Lw/	Day	78.7	-28	-19	-8	0	18	27	24	39	44	46	50	52	56	59	62	67	69	66	69	70	68	69	66	67	64	64	58	51	48	41	33	-	-	-
HVAC9	Lw/	Day	78.7	-28	-19	-8	0	18	27	24	39	44	46	50	52	56	59	62	67	69	66	69	70	68	69	66	67	64	64	58	51	48	41	33	-	-	-
HVAC10	Lw/	Day	78.7	-28	-19	-8	0	18	27	24	39	44	46	50	52	56	59	62	67	69	66	69	70	68	69	66	67	64	64	58	51	48	41	33	-	-	-
HVAC11	Lw/	Day	78.7	-28	-19	-8	0	18	27	24	39	44	46	50	52	56	59	62	67	69	66	69	70	68	69	66	67	64	64	58	51	48	41	33	-	-	-
HVAC12	Lw/	Day	78.7	-28	-19	-8	0	18	27	24	39	44	46	50	52	56	59	62	67	69	66	69	70	68	69	66	67	64	64	58	51	48	41	33	-	-	-
HVAC13	Lw/	Day	78.7	-28	-19	-8	0	18	27	24	39	44	46	50	52	56	59	62	67	69	66	69	70	68	69	66	67	64	64	58	51	48	41	33	-	-	-
HVAC14	Lw/	Day	78.7	-28	-19	-8	0	18	27	24	39	44	46	50	52	56	59	62	67	69	66	69	70	68	69	66	67	64	64	58	51	48	41	33	-	-	-
HVAC15	Lw/	Day	78.7	-28	-19	-8	0	18	27	24	39	44	46	50	52	56	59	62	67	69	66	69	70	68	69	66	67	64	64	58	51	48	41	33	-	-	-
HVAC16	Lw/	Day	78.7	-28	-19	-8	0	18	27	24	39	44	46	50	52	56	59	62	67	69	66	69	70	68	69	66	67	64	64	58	51	48	41	33	-	-	-
HVAC17	Lw/	Day	78.7	-28	-19	-8	0	18	27	24	39	44	46	50	52	56	59	62	67	69	66	69	70	68	69	66	67	64	64	58	51	48	41	33	-	-	-
HVAC18	Lw/	Day	78.7	-28	-19	-8	0	18	27	24	39	44	46	50	52	56	59	62	67	69	66	69	70	68	69	66	67	64	64	58	51	48	41	33	-	-	-
HVAC19	Lw/	Day	78.7	-28	-19	-8	0	18	27	24	39	44	46	50	52	56	59	62	67	69	66	69	70	68	69	66	67	64	64	58	51	48	41	33	-	-	-
HVAC20	Lw/	Day	78.7	-28	-19	-8	0	18	27	24	39	44	46	50	52	56	59	62	67	69	66	69	70	68	69	66	67	64	64	58	51	48	41	33	-	-	-

Noise emissions of parking lot traffic

Name	Parking lot type	Size	Movements per hour			Road surface	Separated method	Lw,ref
			Day	Evening	Night			dB(A)
Autos and Light Trucks	Visitors and staff	85 Parking bays	0.300	0.300	0.300	Asphaltic driving lanes	no	87.0
Truck Parking	Rest stop (Trucks)	37 Parking bays	0.100	0.100	0.100	Asphaltic driving lanes	no	96.3

Receiver list

No.	Receiver name	Building side	Floor	Limit Lden dB(A)	Level w/o NP Lden dB(A)	Level w NP Lden dB(A)	Difference Lden dB	Conflict Lden dB
1	2	-	1.Fl	-	32.9	0.0	-32.9	-
2		-	1.Fl	-	39.3	0.0	-39.3	-
3	3	-	1.Fl	-	33.9	0.0	-33.9	-

Noise emissions of industry sources

Source r	Refere	Level	Frequency spectrum [dB(A)]																													Correcti		
			20	25	31	40	50	63	80	10(	12!	16(	20(	25(	31!	40(	500	630	800	1	1.3	1.6	2	2.5	3.2	4	5	6.3	8	10	12.	16	20	Cwa	C	CT
		dB(A	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	kHz	kHz	kHz	kHz	kHz	kHz	kHz	kHz	kHz	kHz	kH	kHz	kHz	kH	dB	dB	dB
Loading	Lw/m²	Day 92.(	-	-	-	-	-	59	62	66	69	71	73	76	78	80	82.(	83.4	84.2	85.(	85.(	85.3	86.(	86.	86.3	86.(	85.(	85.(	84.(	-	-	-	-	-	-	-
HVAC1	Lw/	Day 78.7	-28	-19	-8.	0.	18	27	24	39	44	46	50	52	56	59	62.	67.5	69.5	66.4	69.(	70.4	68.(	69.(	66.(	67.3	64.5	64.3	58.5	51	48.	41	33	-	-	-
HVAC2	Lw/	Day 78.7	-28	-19	-8.	0.	18	27	24	39	44	46	50	52	56	59	62.	67.5	69.5	66.4	69.(	70.4	68.(	69.(	66.(	67.3	64.5	64.3	58.5	51	48.	41	33	-	-	-
HVAC3	Lw/	Day 78.7	-28	-19	-8.	0.	18	27	24	39	44	46	50	52	56	59	62.	67.5	69.5	66.4	69.(	70.4	68.(	69.(	66.(	67.3	64.5	64.3	58.5	51	48.	41	33	-	-	-
HVAC4	Lw/	Day 78.7	-28	-19	-8.	0.	18	27	24	39	44	46	50	52	56	59	62.	67.5	69.5	66.4	69.(	70.4	68.(	69.(	66.(	67.3	64.5	64.3	58.5	51	48.	41	33	-	-	-
HVAC5	Lw/	Day 78.7	-28	-19	-8.	0.	18	27	24	39	44	46	50	52	56	59	62.	67.5	69.5	66.4	69.(	70.4	68.(	69.(	66.(	67.3	64.5	64.3	58.5	51	48.	41	33	-	-	-
HVAC6	Lw/	Day 78.7	-28	-19	-8.	0.	18	27	24	39	44	46	50	52	56	59	62.	67.5	69.5	66.4	69.(	70.4	68.(	69.(	66.(	67.3	64.5	64.3	58.5	51	48.	41	33	-	-	-
HVAC7	Lw/	Day 78.7	-28	-19	-8.	0.	18	27	24	39	44	46	50	52	56	59	62.	67.5	69.5	66.4	69.(	70.4	68.(	69.(	66.(	67.3	64.5	64.3	58.5	51	48.	41	33	-	-	-
HVAC8	Lw/	Day 78.7	-28	-19	-8.	0.	18	27	24	39	44	46	50	52	56	59	62.	67.5	69.5	66.4	69.(	70.4	68.(	69.(	66.(	67.3	64.5	64.3	58.5	51	48.	41	33	-	-	-
HVAC9	Lw/	Day 78.7	-28	-19	-8.	0.	18	27	24	39	44	46	50	52	56	59	62.	67.5	69.5	66.4	69.(	70.4	68.(	69.(	66.(	67.3	64.5	64.3	58.5	51	48.	41	33	-	-	-
HVAC10	Lw/	Day 78.7	-28	-19	-8.	0.	18	27	24	39	44	46	50	52	56	59	62.	67.5	69.5	66.4	69.(	70.4	68.(	69.(	66.(	67.3	64.5	64.3	58.5	51	48.	41	33	-	-	-
HVAC11	Lw/	Day 78.7	-28	-19	-8.	0.	18	27	24	39	44	46	50	52	56	59	62.	67.5	69.5	66.4	69.(	70.4	68.(	69.(	66.(	67.3	64.5	64.3	58.5	51	48.	41	33	-	-	-
HVAC12	Lw/	Day 78.7	-28	-19	-8.	0.	18	27	24	39	44	46	50	52	56	59	62.	67.5	69.5	66.4	69.(	70.4	68.(	69.(	66.(	67.3	64.5	64.3	58.5	51	48.	41	33	-	-	-
HVAC13	Lw/	Day 78.7	-28	-19	-8.	0.	18	27	24	39	44	46	50	52	56	59	62.	67.5	69.5	66.4	69.(	70.4	68.(	69.(	66.(	67.3	64.5	64.3	58.5	51	48.	41	33	-	-	-
HVAC14	Lw/	Day 78.7	-28	-19	-8.	0.	18	27	24	39	44	46	50	52	56	59	62.	67.5	69.5	66.4	69.(	70.4	68.(	69.(	66.(	67.3	64.5	64.3	58.5	51	48.	41	33	-	-	-
HVAC15	Lw/	Day 78.7	-28	-19	-8.	0.	18	27	24	39	44	46	50	52	56	59	62.	67.5	69.5	66.4	69.(	70.4	68.(	69.(	66.(	67.3	64.5	64.3	58.5	51	48.	41	33	-	-	-
HVAC16	Lw/	Day 78.7	-28	-19	-8.	0.	18	27	24	39	44	46	50	52	56	59	62.	67.5	69.5	66.4	69.(	70.4	68.(	69.(	66.(	67.3	64.5	64.3	58.5	51	48.	41	33	-	-	-
HVAC17	Lw/	Day 78.7	-28	-19	-8.	0.	18	27	24	39	44	46	50	52	56	59	62.	67.5	69.5	66.4	69.(	70.4	68.(	69.(	66.(	67.3	64.5	64.3	58.5	51	48.	41	33	-	-	-
HVAC18	Lw/	Day 78.7	-28	-19	-8.	0.	18	27	24	39	44	46	50	52	56	59	62.	67.5	69.5	66.4	69.(	70.4	68.(	69.(	66.(	67.3	64.5	64.3	58.5	51	48.	41	33	-	-	-
HVAC19	Lw/	Day 78.7	-28	-19	-8.	0.	18	27	24	39	44	46	50	52	56	59	62.	67.5	69.5	66.4	69.(	70.4	68.(	69.(	66.(	67.3	64.5	64.3	58.5	51	48.	41	33	-	-	-
HVAC20	Lw/	Day 78.7	-28	-19	-8.	0.	18	27	24	39	44	46	50	52	56	59	62.	67.5	69.5	66.4	69.(	70.4	68.(	69.(	66.(	67.3	64.5	64.3	58.5	51	48.	41	33	-	-	-
Air Brak	Lw/uni	Day 110	-	-	-	-	-	77	80	84	87	89	91	94	96	98	100	101	102	103	103	103	104	104	104	104	103	103	102	-	-	-	-	-	-	-

Noise emissions of parking lot traffic

Name	Parking lot type	Size	Movements per hour		Road surface	Separated method	Lw,ref
			Day	Lmax			dB(A)
Autos and Light Trucks	Visitors and staff	85 Parking bays	0.300	0.300	Asphaltic driving lanes	no	87.0
Truck Parking	Rest stop (Trucks)	37 Parking bays	0.100	0.100	Asphaltic driving lanes	no	96.3

Receiver list

No.	Receiver name	Building side	Floor	Limit Day dB(A)	Level w/o NP Day dB(A)	Level w NP Day dB(A)	Difference Day dB
1	1	-	1.Fl	-	64.9	0.0	-64.9
2	2	-	1.Fl	-	50.1	0.0	-50.1
3	3	-	1.Fl	-	33.1	0.0	-33.1

APPENDIX G

VIBRATION WORKSHEETS

GROUNDBORNE VIBRATION ANALYSIS

Project:	19391 Whittier Boulevard Business Park		Date: 12/27/21
Source:	Vibratory Roller		
Scenario:	Unmitigated		
Location:	Multi-Family Residential to West		
Address:			

PPV = PPVref(25/D)^n (in/sec)

INPUT

Equipment Type	1	Vibratory Roller	INPUT SECTION IN GREEN
PPVref =	0.21	Reference PPV (in/sec) at 25 ft.	
D =	37.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	

Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.

RESULTS

PPV =	0.117	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS

Project:	19391 Whittier Boulevard Business Park	Date:	12/27/21
Source:	Large Bulldozer		
Scenario:	Unmitigated		
Location:	Multi-Family Residential to West		
Address:			

PPV = PPVref(25/D)^n (in/sec)

INPUT

Equipment Type	2	Large Bulldozer	INPUT SECTION IN GREEN
PPVref =	0.089	Reference PPV (in/sec) at 25 ft.	
D =	37.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	

Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.

RESULTS

PPV =	0.049	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS

Project:	19391 Whittier Boulevard Business Park		Date: 12/27/21
Source:	Vibratory Roller		
Scenario:	Unmitigated		
Location:	Hospital to Southwest		
Address:			

PPV = PPVref(25/D)^n (in/sec)

INPUT

Equipment = Type	1	Vibratory Roller	INPUT SECTION IN GREEN
PPVref =	0.21	Reference PPV (in/sec) at 25 ft.	
D =	250.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	

Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.

RESULTS

PPV =	0.007	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS

Project:	19391 Whittier Boulevard Business Park	Date:	12/27/21
Source:	Large Bulldozer		
Scenario:	Unmitigated		
Location:	Hospital to Southwest		
Address:			

PPV = PPVref(25/D)^n (in/sec)

INPUT

Equipment Type	2	Large Bulldozer	INPUT SECTION IN GREEN
PPVref =	0.089	Reference PPV (in/sec) at 25 ft.	
D =	250.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	

Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.

RESULTS

PPV =	0.003	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS

Project:	19391 Whittier Boulevard Business Park	Date:	12/27/21
Source:	Vibratory Roller		
Scenario:	Mitigated		
Location:	Commercial/Industrial to North/South		
Address:			

PPV = PPVref(25/D)^n (in/sec)

INPUT

Equipment Type =	1	Vibratory Roller	INPUT SECTION IN GREEN
PPVref =	0.21	Reference PPV (in/sec) at 25 ft.	
D =	23.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	

Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.

RESULTS

PPV =	0.238	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS

Project:	19391 Whittier Boulevard Business Park	Date:	12/27/21
Source:	Large Bulldozer		
Scenario:	Mitigated		
Location:	Commercial/Industrial to North/South		
Address:			

PPV = PPVref(25/D)^n (in/sec)

INPUT

Equipment Type =	2	Large Bulldozer	INPUT SECTION IN GREEN
PPVref =	0.089	Reference PPV (in/sec) at 25 ft.	
D =	13.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	

Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.

RESULTS

PPV =	0.237	IN/SEC	OUTPUT IN BLUE

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