# BEAUMONT VILLAGE NOISE IMPACT ANALYSIS

City of Beaumont
February 9, 2023
Revised November 16, 2023

gandini

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

# BEAUMONT VILLAGE
# NOISE IMPACT ANALYSIS

City of Beaumont

February 9, 2023
Revised November 16, 2023

*prepared by*
Roma Stromberg, INCE, MS
Catherine Howe, MS


**GANDDINI GROUP INC.**
555 Parkcenter Drive, Suite 225
Santa Ana, CA 92705
(714) 795-3100 | ganddini.com

Project No. 19-0001

# TABLE OF CONTENTS



**Appendices**

## List of Tables



## List of Figures

# EXECUTIVE SUMMARY

The 7.16-acre project site is located west of Beaumont Avenue and north of Oak Valley Parkway in the City of Beaumont, California. The project site is currently vacant.

The proposed project involves construction of a 39,801 square foot commercial center, including 10,504 square feet of fast-food restaurants with drive-through window, a 12 fueling position gasoline station with 3,130 square foot convenience market, a 3,605 square foot express car wash, and 22,562 square feet of strip retail plaza land uses. The proposed project is anticipated to be constructed and fully operational by year 2025.

*Existing Noise Environment*

Sensitive receptors that may be affected by project generated noise include the single-family detached residential dwelling units to the south (south of Oak Valley Parkway) and the multiple family attached residential dwelling units to the northeast (east of Beaumont Avenue).

Noise measurements were collected at three locations to document existing ambient noise levels in the project area (see Figure 5, Table 1, and Table 2).

*Construction Noise Impacts*

Project construction will not occur outside of the hours outlined in Section 9.02.110(F) of the City of Beaumont Municipal Code. Based on the modeled construction noise levels (see Table 10), interior noise levels are estimated to reach a maximum of 50 dBA at the nearest residential property line with windows closed based on typical exterior to interior noise transmission. Therefore, the project would not exceed City-established standards relating to construction noise. The project impact is less than significant; no mitigation is required.

Notwithstanding the above, best management practices (BMPs) are provided in the Project Description and should be added to project plans and in contract specifications to minimize construction noise emanating from the proposed project.

*Exterior Noise Impacts*

The project will not exceed City-established stationary noise standards at the exterior of nearby sensitive receptors, for both daytime and nighttime periods, with implementation of Mitigation Measure NOI-1 (see Table 11). The project impact is less than significant with mitigation incorporated.

*Interior Noise Impacts*

The project will not exceed City-established stationary noise standards at the interior of nearby sensitive receptors, for both daytime and nighttime periods, with implementation of Mitigation Measure NOI-1 (see Table 11). The project impact is less than significant with mitigation incorporated.

*Mobile Source Noise Impacts*

The addition of project trips is not expected to change noise levels more than the applicable threshold at any of the study roadway segments (see Table 12). The project impact is less than significant; no mitigation is required.

*Groundborne Vibration Impacts*

Groundborne vibration generated by project construction would not exceed the levels necessary to cause architectural damage or severe annoyance to persons living or working in nearby buildings. The project impact is less than significant; no mitigation is required.

*Air Traffic Impacts*

The project site is located well outside the 55 dBA CNEL noise contours for the Banning Municipal Airport. Therefore, the project would not expose people residing or working in the project area to excessive noise levels associated with airports. The impact would be less than significant; no mitigation is required.

*Mitigation Measures*

The following mitigation measure is recommended for compliance with the City-established exterior and interior noise standards:

**Mitigation Measure NOI-1:** Prohibit use of the car wash and associated vacuums between the hours of 10:00 PM and 7:00 AM.

# 1. INTRODUCTION

This section describes the purpose of this study and the proposed project.

## PURPOSE AND OBJECTIVES

The purpose of this report is to provide an assessment of the noise impacts resulting from development of the proposed 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 Beaumont.

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 and vibration analysis.

## PROJECT LOCATION

The 7.16-acre project site is located west of Beaumont Avenue and north of Oak Valley Parkway in the City of Beaumont, California. The project site is currently vacant. A vicinity map showing the project location is provided on Figure 1.

## PROJECT DESCRIPTION

The proposed project involves construction of a 39,801 square foot commercial center, including 10,504 square feet of fast-food restaurants with drive-through window, a 12 fueling position gasoline station with 3,130 square foot convenience market, a 3,605 square foot express car wash, and 22,562 square feet of strip retail plaza land uses. The proposed project is anticipated to be constructed and fully operational by year 2025. Figure 2 illustrates the project site plan.

The following best management practices (BMPs) shall be provided on project plans and in contract specifications to minimize construction and operational noise emanating from the proposed project:

1. All equipment, whether fixed or mobile, will be equipped with properly operating and maintained mufflers, consistent with manufacturer standards.
2. All stationary construction equipment will be placed so that emitted noise is directed away from the noise sensitive receptors nearest the project site.
3. As applicable, all equipment shall be shut off and not left to idle when not in use.
4. To the degree possible, equipment staging will be located in areas that create the greatest distance between construction-related noise and vibration sources and existing sensitive receptors.
5. Jackhammers, pneumatic equipment, and all other portable stationary noise sources will be directed away and shielded from existing residences in the vicinity of the project site. Either one-inch plywood or sound blankets can be utilized for this purpose. They should reach up from the ground and block the line of sight between equipment and existing residences. The shielding should be without holes and cracks.
6. No amplified music and/or voice will be allowed on the project site.
7. Haul truck deliveries will not occur outside of the hours presented as exempt for construction per City of Beaumont Municipal Code Section 9.02.110(F).

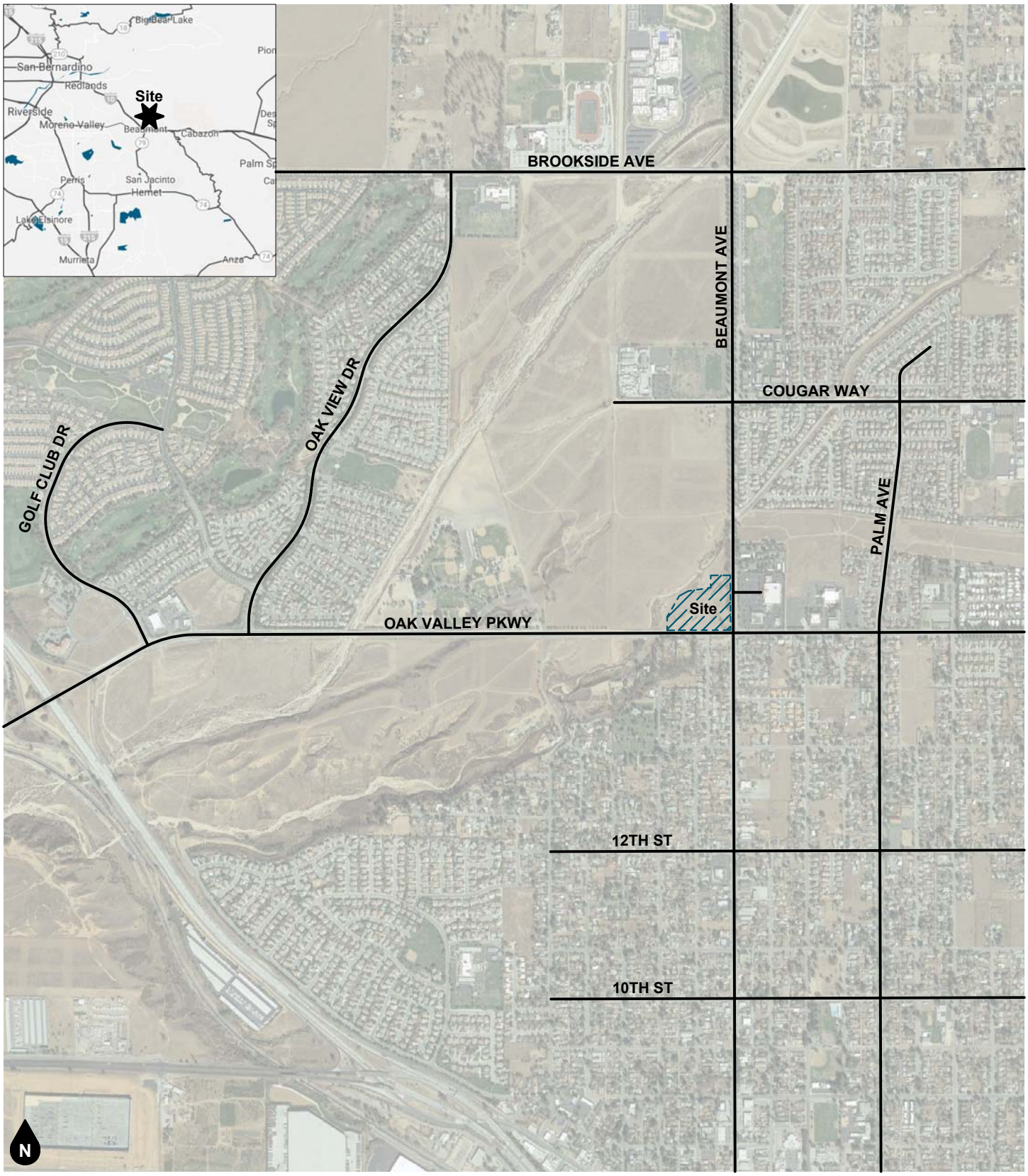



**Figure 1**
**Project Location Map**

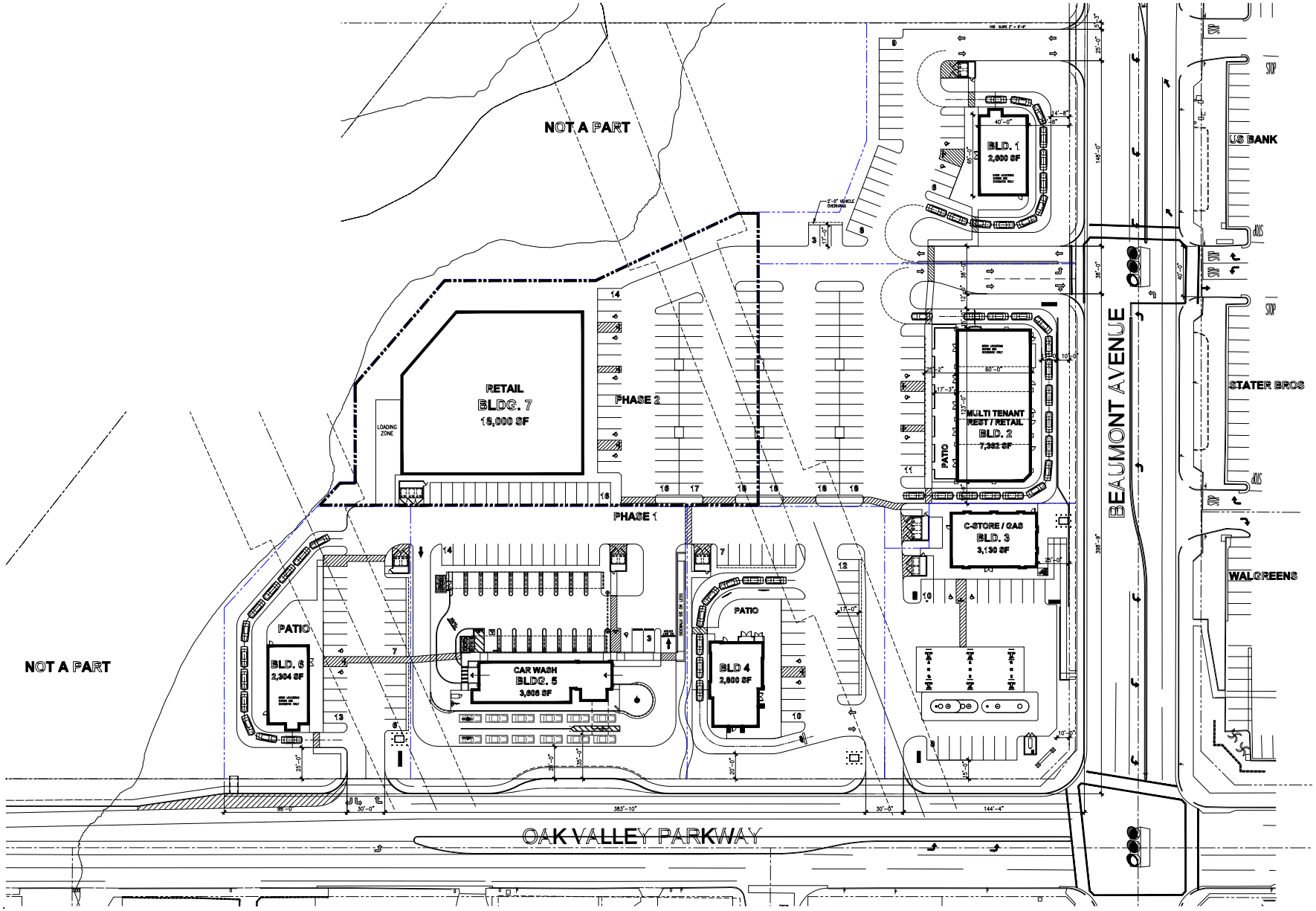



**Figure 2**
**Site Plan**

# 2. NOISE AND VIBRATION FUNDAMENTALS

This section provides an overview of key noise and vibration concepts.

## 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, $L_{eq(3)}$ 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 Rayleigh 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. Unlike P-waves, however, 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.

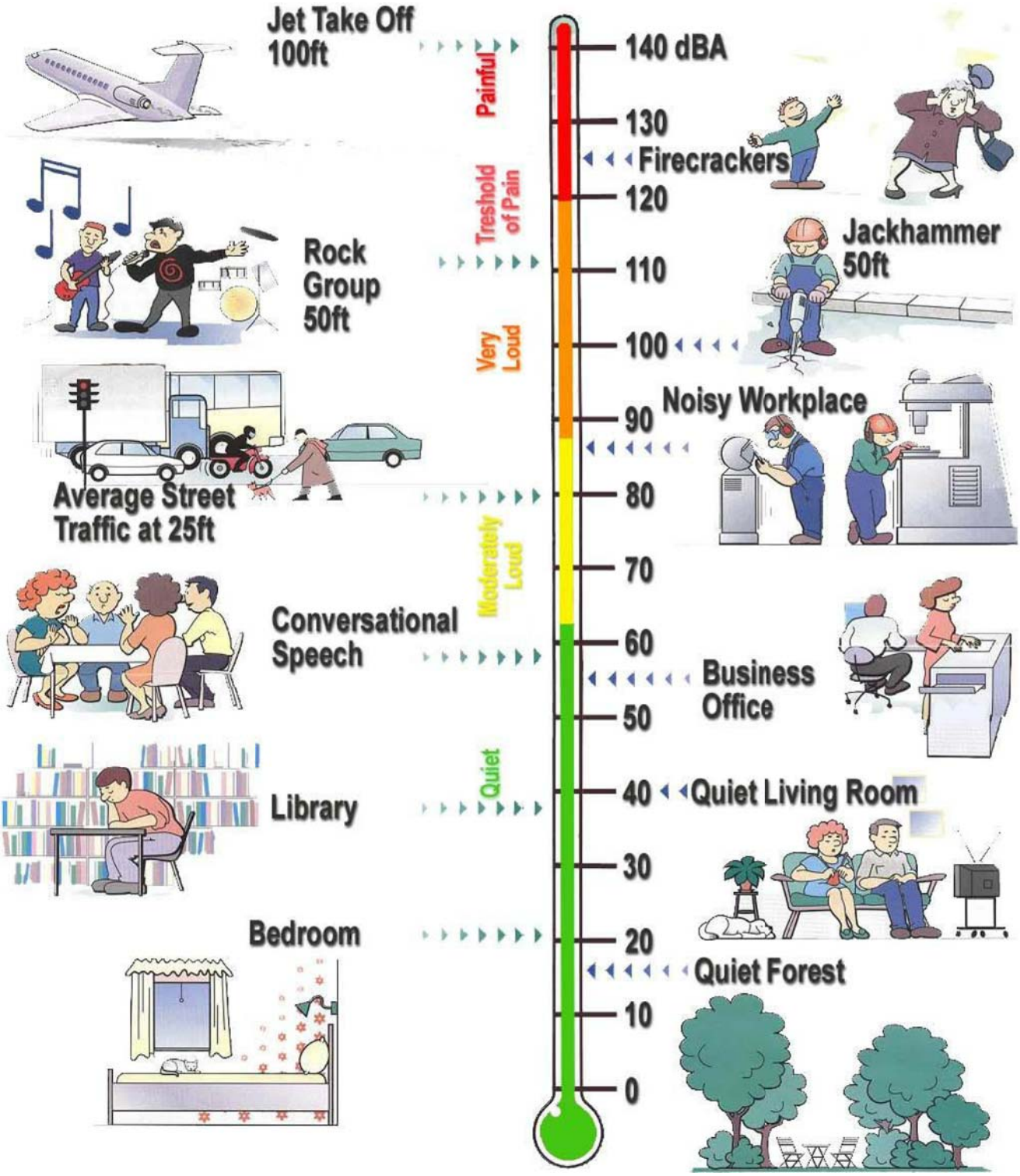
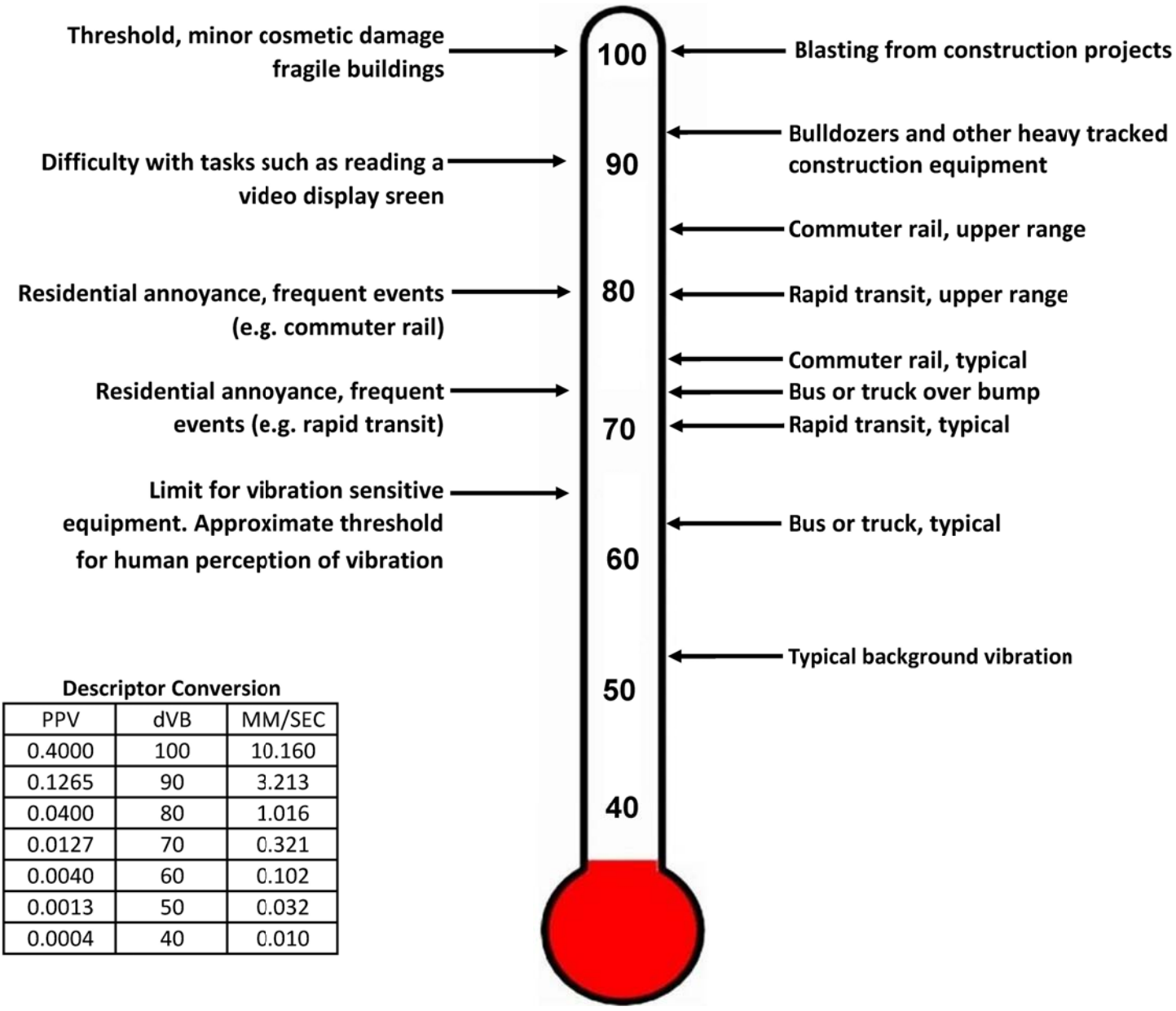



**Figure 3**
**Weighted Sound Levels and Human Response**

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

This section describes the existing noise setting in the project vicinity.

### EXISTING LAND USES AND SENSITIVE RECEPTORS

The project site is bordered by Beaumont Avenue to the east, Oak Valley Parkway to the south, and vacant land to the north and west.

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 receptors that may be affected by project generated noise include the single-family detached residential dwelling units to the south (south of Oak Valley Parkway) and the multiple family attached residential dwelling units to the northeast (east of Beaumont Avenue).

### AMBIENT NOISE MEASUREMENTS

An American National Standards Institute (ANSI Section SI4 1979, Type 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, two (2) 15-minute daytime noise measurements were taken between 2:12 PM and 3:02 PM on December 10, 2020. In addition, one (1) long-term 24-hour noise measurement was also taken from December 10, 2020, to December 11, 2020. Figure 5 shows the noise measurement location map. Field worksheets and noise measurement worksheets are provided in Appendix C.

As shown on Figure 5, the noise measurements were taken near the single-family residential uses to the south of the project site (across Oak Valley Parkway) (STNM1), near the multiple-family residential use to the northeast of the project site (across Beaumont Avenue) (STNM2), and near the southeastern corner of the project site (LTNM1).

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 69.7 and 70.7 dBA $L_{eq}$. Long-term hourly noise measurement ambient noise levels ranged from 47.8 to 61.1 dBA $L_{eq}$. The dominant noise sources were from vehicles traveling along Beaumont Avenue and Oak Valley Parkway.

**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 | 2:12 PM | 70.7 | 88.5 | 45.0 | 77.8 | 75.1 | 71.6 | 67.0 |
| STNM2 | 2:47 PM | 69.7 | 82.6 | 51.7 | 75.9 | 73.4 | 70.8 | 67.7 |

Notes:

(1) See Figure 5 for noise measurement locations. Each noise measurement was performed over a 15-minute duration.

(2) Noise measurements performed on December 10, 2020.

## 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 | 5:00 PM | 56.6 | 85.9 | 35.3 | 62.4 | 59.5 | 56.9 | 54.0 |
| 1 | 5:00 PM | 59.8 | 79.9 | 51.1 | 64.6 | 61.6 | 59.8 | 58.3 |
| 2 | 6:00 PM | 47.8 | 78.9 | 49.9 | 63.8 | 61.3 | 59.4 | 57.8 |
| 3 | 7:00 PM | 48.1 | 77.9 | 46.6 | 63.1 | 59.7 | 57.6 | 55.6 |
| 4 | 8:00 PM | 50.9 | 74.2 | 43.6 | 61.9 | 59.2 | 56.7 | 54.3 |
| 5 | 9:00 PM | 51.4 | 69.3 | 38.9 | 60.2 | 57.8 | 55.2 | 52.0 |
| 6 | 10:00 PM | 51.5 | 65.7 | 39.4 | 59.4 | 56.5 | 53.4 | 50.5 |
| 7 | 11:00 PM | 52.0 | 65.0 | 39.3 | 58.3 | 55.6 | 52.1 | 48.6 |
| 8 | 12:00 AM | 52.7 | 73.3 | 35.8 | 58.2 | 54.5 | 50.6 | 45.4 |
| 9 | 1:00 AM | 54.0 | 67.9 | 35.3 | 56.6 | 52.9 | 47.5 | 42.5 |
| 10 | 2:00 AM | 54.7 | 60.6 | 35.7 | 55.7 | 52.7 | 48.0 | 43.5 |
| 11 | 3:00 AM | 54.7 | 72.6 | 36.2 | 60.4 | 54.7 | 50.4 | 46.4 |
| 12 | 4:00 AM | 55.9 | 66.9 | 38.6 | 58.9 | 56.0 | 52.7 | 49.5 |
| 13 | 5:00 AM | 56.0 | 70.3 | 42.2 | 61.0 | 58.1 | 55.3 | 52.8 |
| 14 | 6:00 AM | 56.3 | 69.4 | 43.1 | 63.5 | 60.2 | 57.5 | 55.3 |
| 15 | 7:00 AM | 56.5 | 79.0 | 47.2 | 64.9 | 61.1 | 58.8 | 56.7 |
| 16 | 8:00 AM | 56.9 | 73.5 | 46.5 | 63.0 | 60.5 | 58.6 | 56.6 |
| 17 | 9:00 AM | 56.9 | 74.2 | 44.8 | 61.0 | 58.5 | 56.4 | 54.3 |
| 18 | 10:00 AM | 57.8 | 80.4 | 45.8 | 62.4 | 58.5 | 55.6 | 53.6 |
| 19 | 11:00 AM | 57.8 | 69.8 | 45.2 | 60.0 | 57.7 | 55.5 | 53.6 |
| 20 | 12:00 PM | 58.8 | 83.7 | 46.0 | 64.1 | 59.3 | 56.9 | 55.2 |
| 21 | 1:00 PM | 59.0 | 75.4 | 45.6 | 61.9 | 59.2 | 56.8 | 54.9 |
| 22 | 2:00 PM | 59.4 | 71.3 | 45.4 | 61.7 | 58.6 | 56.5 | 54.5 |
| 23 | 3:00 PM | 59.4 | 84.3 | 46.8 | 64.9 | 60.5 | 58.0 | 56.2 |
| 24 | 4:00 PM | 61.1 | 85.9 | 49.7 | 65.4 | 61.7 | 59.4 | 57.6 |
| CNEL | 61.4 | | | | | | | |

Notes:

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

(2) Noise measurement performed from December 10, 2020 to December 11, 2020.


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

This section documents the regulatory framework and applicable noise standards.

## 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 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.

### California Department of Transportation

The California Department of Transportation (Caltrans) has developed several publications on groundborne vibration. The *Transportation and Construction Vibration Guidance Manual* (Caltrans, 2020) provides informational content that supplements previous publications with improved knowledge and information relating to groundborne transportation- and construction-induced vibrations. Although the *Transportation and Construction Vibration Guidance Manual* is not an official policy, standard, specification, or regulation, it serves as a useful guide for evaluating vibration impacts.

Table 3 and Table 4 show the guideline criteria for potential damage and annoyance resulting from groundborne vibration. As shown in Table 3, these guidelines recommend that the threshold at which there is a risk of architectural damage is a peak particle velocity (PPV) of 0.25 inches/second (in/sec) for historic buildings, PPV of 0.3 in/sec at older residential structures, and a PPV of 0.5 in/sec at new residential structures and modern commercial/industrial buildings. Table 4 shows that a PPV of 0.4 in/sec is the threshold at which groundborne vibration becomes severe in regard to annoyance (Caltrans, 2020).

## LOCAL REGULATIONS

### City of Beaumont General Plan

The City of Beaumont General Plan establishes that the standard used for maximum outdoor noise levels in residential areas in California, and the City specifically, is a CNEL of 65 dBA; no land use compatibility standards are specified for other land uses in relation to transportation noise sources.

The City of Beaumont General Plan Noise Element also includes the following goals and policies in regards to noise which apply to the proposed project.

***Goal 10.1*** *A City where noise exposure is minimized for those living and working in the community.*

*Policies*

*10.1.1* *Protect public health and welfare by eliminating existing noise problems and by preventing significant degradation of the future acoustic environment.*

*10.1.2* *Adopt, maintain, and enforce planning guidelines that establish the acceptable noise standards identified in Section 9.02.050 and 9.02.070 of the City's Municipal Code.*

*10.1.3* *Protect noise-sensitive uses, such as residences, schools, health care facilities, hotels, libraries, parks and places of worship, from excessive noise levels through land use adjacency, building design, and noise ordinance enforcement.*

*10.1.4* *Incorporate noise considerations into land use planning decisions. Require the inclusion of noise mitigation measures, as may be necessary to meet standards, in the design of new development projects in the City.*

*10.1.5* *Require projects involving new development or modifications to existing development to implement measures, where necessary, to reduce noise levels to at least the normally compatible range. Design measures should focus on architectural features and building design and construction, rather than site design features, such as excessive setbacks, berms, and sound walls, to maintain compatibility with adjacent and surrounding uses.*

*10.1.6* *Encourage reduction of stationary noise impacts from commercial and industrial land uses, activities, events, and businesses on noise-sensitive land uses.*

*10.39* *Limit delivery or service hours for stores and businesses with loading areas, docks, or trash bins that front, side, border, or gain access on driveways next to residential and other noise sensitive areas, such as residences, schools, hospitals, religious meeting spaces, and recreation areas.*

*10.1.8* *Promote the effective enforcement of Federal, State, and City noise standards by all appropriate City departments.*

***Goal 10.2*** *A City with minimal mobile source-generated noise levels.*

*10.2.4* *Reduce the impacts of roadway noise on noise-sensitive receptors where roadway noise exceeds the normally compatible range.*

**City of Beaumont Municipal Code**

Chapter 9.02 of the City's Municipal Code establishes base ambient noise levels and establishes maximum exterior and interior noise level limits for stationary noise sources. As stated in the ordinance, *"exterior noise measurements exceeding the levels set forth hereinabove at the times and within the zones corresponding thereto shall be employed as the "base ambient noise level" referred to in this Chapter. Otherwise, no ambient noise shall be deemed to be less than the above specified levels."* In this case, all of the measured noise levels exceed the Base Ambient Noise Levels. In accordance with City's Municipal Code, Table 5 shows the adjusted exterior noise standards by land use. Although the City sets forth several noise criteria for exterior noise levels, the 30-minute $L_{eq}$ (referred to as $L_{eq}$ in the document) is the criteria used for this CEQA level of analysis; the other criteria are intended for use by City code enforcement officers.

Interior noise level standards are presented in Table 6. For interior noise levels, if the measured noise level exceeds the permissible within the first two noise limit categories in this section, the allowable noise exposure standard shall be increased in five-decibel increments in each category as appropriate to reflect the interior ambient noise level. In the event the interior ambient noise level exceeds the third noise limit category, the maximum allowable interior noise level under said category shall be increased to reflect the maximum interior ambient noise level. No interior noise measurements were conducted so no adjustments to these criteria were made.

Section 9.02.110 of the City's Municipal Code also contains the following special provisions:

***Section 9.02.110 Special Provisions.***

***F. Construction, landscape, maintenance or repair.***

1. *It shall be unlawful for any person to engage in or permit the generation of noise related to landscape maintenance, construction including erection, excavation, demolition, at the property line of the nearest adjacent occupied property, as to be in excess of the sound levels permitted under this Chapter, at other times than between the hours of 7:00 AM and 6:00 PM. The person engaged in such activity is hereby permitted to exceed sound levels otherwise set forth in this Chapter for the duration of the activity during the above-described hours for purposes of construction. However, nothing contained herein shall permit any person to cause sound levels to at any time exceed fifty-five dB(A) for intervals of more than fifteen minutes per hour as measured in the interior of the nearest occupied residence or school.*

2. *Whenever a construction site is within one-quarter mile of an occupied residence or residences, no construction activities shall be undertaken between the hours of 6:00 PM and 6:00 AM during the months of June through September and between the hours of 6:00 PM and 7:00 AM during the months of October through May. Exceptions to these standards shall be allowed only within the written consent of the building official.*

3. *Construction related noise as defined in subsection F (1 and 2) above may take place outside the time period set forth therein and above the relative sound levels in case of urgent necessity in the interest of the public health and safety, and then only with the prior permission of the building inspector. Such permit may be granted for a period not to exceed three days or until the emergency ends, whichever is less. The permit may be renewed for periods of three days while the emergency continues.*

4. *Unless exempted in this Chapter, if the building official should determine that the public health and safety will not be impaired by the construction related noise, the building inspector may issue a permit for construction within the hours of 6:00 PM and 7:00 AM, upon application being made at the time the permit for the work is awarded or during the progress of the work. The building official may place such conditions on the issuance of the permit that are appropriate to maintain the public health and safety, as determined by the building official.*

***G. Machinery, equipment, fans, and air conditioning.*** *It shall be unlawful for any person to operate, cause to operate or permit the operation of any machinery, equipment, device, pump, fan, compressor, air conditioning apparatus or similar mechanical device, including but not limited to the use of any steam shovel, pneumatic hammer, derrick, steam or electric hoist, blower or power fan, or any internal combustion engine, the operation of which causes noise due to the explosion of operating gases or fluids, or other appliance, in any manner so as to create any noise which would cause the noise level at the property line of the property upon which the equipment or machinery is operated to exceed the base ambient noise level by five dB(A).*

**Table 3**
**Guideline Criteria for Vibration Damage Potential**

| Structure Condition | Maximum PPV (in/sec) | |
|---|---|---|
| | Transient Sources | Continuous/Frequent Intermittent Sources |
| Extremely fragile historic buildings, ruins, ancient monuments | 0.12 | 0.08 |
| Fragile buildings | 0.20 | 0.10 |
| Historic and some old buildings | 0.50 | 0.25 |
| Older residential structures | 0.50 | 0.30 |
| New residential structures | 1.00 | 0.50 |
| Modern industrial/commercial buildings | 2.00 | 0.50 |

Notes:

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

(2) 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 4**
**Guideline Criteria for Vibration Annoyance Potential**

| 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 | 0.90 | 0.10 |
| Severe | 2.00 | 0.40 |

Notes:

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

(2) 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
## City of Beaumont Exterior Stationary Noise Standards by Land Use

| | Base Ambient Noise Level | | Adjusted Noise Standards (dBA, Leq) Daytime/Nighttime | | | | | |
|---|---|---|---|---|---|---|---|---|
| Affected Land Uses (Receiving Noise) | 7:00 AM to 10:00 PM dBA $L_{eq}$ (Daytime) | 10:00 PM to 7:00 AM dBA $L_{eq}$ (Nighttime) | Receiver 1[1,2] | Reciever 2[3,2] | Receiver 3[4,2] | Reciever 2[5,2] | Reciever 5[6] | Receiver 6[4,2] |
| Residential | 55 | 45 | 71/48 | 70/48 | 71/48 | 70/48 | 65/48 | 71/48 |

Notes:

(1) As measured; see Table 1 and Figure 5.

(2) The quietest measured nighttime noise levels as shown in Table 2.

(3) As measured. See Table 1 and Figure 5.

(4) Acoustically equivalent to NM 1 (see Table 1 and Figure 5).

(5) Acoustically equivalent to NM 2 (see Table 1 and Figure 5).

(6) Estimated from NM 1 using Inverse Square Law. Traffic noise is the dominant noise source in this area.

Source: City of Beaumont Municipal Code Section 9.02.050.

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

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

(A) The noise standard for the receiving land use as specified in Subsection B (Noise-impacted areas), above, for a cumulative period of more than 30 minutes in any hour.

(B) The noise standard plus 5 dB(A) for a cumulative period of more than 15 minutes in any hour.

(C) The noise standard plus 10 dB(A) for a cumulative period of more than five minutes in any hour.

(D) The noise standard plus 15 dB(A) for a cumulative period of more than one minute in any hour.

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

**Table 6**
**City of Beaumont Interior Stationary Noise Standards by Land Use**

| Decibels | Time Period | Land Use |
|---|---|---|
| 35 dB(A) | 10:00 PM - 7:00 AM | Residential |
| 45 dB(A) | 7:00 AM - 10:00 PM | Residential |
| 45 dB(A) | 7:00 AM - 10:00 PM<br>(while school is in session) | School |
| 45 dB(A) | Anytime | Hospital |

Source: City Beaumont Municipal Ordinance Section 9.02.080.

# 5. ANALYTICAL METHODOLOGY AND MODEL PARAMETERS

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

### CONSTRUCTION NOISE MODELING

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.

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, and Energy Impact Analysis prepared for the proposed project (Ganddini Group, Inc., 2023). For analysis 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. Sound emission levels associated with typical construction equipment as well as typical usage factors are provided in Table 7.

Typical construction generally provides 20 dBA noise level reduction from exterior to interior with windows closed. A "windows closed" condition assumes mechanical fresh air ventilation (e.g., air conditioning) is provided in habitable dwelling units. Thus, the projected interior noise level can be estimated by subtracting the building shell noise reduction from the modeled exterior noise level.

### STATIONARY SOURCE/OPERATIONAL NOISE MODELING

The SoundPLAN acoustical modeling software was utilized to model project operational stationary noise levels from the proposed project to adjacent sensitive uses (e.g., residences). SoundPLAN is capable of evaluating stationary noise sources (e.g., parking lots, drive-through menus, car wash equipment, vacuums, etc.). 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.

Operational noise levels were modeled utilizing representative sound levels in the SoundPLAN model. Modeled noise sources include car wash equipment, vacuum equipment, queuing, fast-food ordering speakers, parking lot noise, and HVAC equipment. All noise sources were modeled to be in full operation for an entire hour (60 minutes per hour) during daytime hours. This is a highly conservative modeling effort given that several of the noise sources will not operate continuously for an entire hour. A nighttime version of project operation was also modeled which assumed no car wash or vacuuming activity would occur between the hours of 10:00 PM and 7:00 AM and that fast food drive-through speakers would be in operation for 15 minutes per hour.

Car Wash Equipment Noise

The car wash drying system is by far the loudest noise source associated with the car wash tunnel. A representative sound level of 95.1 dBA $L_{eq}$[1] at a distance of five feet was utilized to model one blower/dryer

[1] Representative Noise Measurement for Peco Blower System, Surf Thru Car Wash. MD Acoustics, LLC.

in the SoundPLAN noise model. Fourteen-point noise sources were placed inside the tunnel, five-feet from the opening of the end of the car wash tunnel at a height of eight feet to represent dryer noise.

Vacuum Equipment Noise

A point noise source of 76.8 dB was assigned to each vacuum station to represent noise associated with general vacuuming/blowing activities. This noise level was collected at a Fast Five Car Wash in the City of Murrieta, California on November 7th, 2017. The measured 76.8 dB noise level at three feet is an average of three (3) five-minute noise measurements taken while cleaning the front seat area of a car.[2] This modeling methodology is very conservative as it assumes that all vacuum stations are being utilized at the same time 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 space, 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[3].

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 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

Mechanical Equipment (HVAC Units) Noise

It is expected that the buildings associated with the proposed project would include rooftop mounted heating, ventilation, and air conditioning (HVAC) units. The type, size and number of mechanical equipment are not known at this time. A conservative estimate was utilized for modeling purposes. The HVAC equipment was modeled as point sources placed on-top of each structure's roof. 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.[4]

[2] 2017 Noise Measurements, Fast Five Car Wash. City of Murrieta, November 7. Kunzman Associates, Inc.

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

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

Drive-Through Speakers

The drive-through speakers were modeled as point sources and a SoundPLAN noise reference level to represent loud human voices of 70 dBA utilized. It should be noted here that drive-through speakers that are sensitive to the ambient noise conditions are available. These speakers automatically adjust in volume to be just audible over the existing ambient noise levels as they fluctuate.

Service Station Fueling Area

The service station fueling area modeled by utilizing SoundPLAN noise reference level for a human voice at 61 dBA per square meter, resulting in an overall noise level of 65 dBA within the area during daytime hours and 57 dBA per square meter, resulting in an overall noise level of 60 dBA within the area during nighttime hours. This representative sound level is intended to represent fueling area activities including vehicles arriving and leaving, mechanical noise, and conversation.

## MOBILE SOURCE NOISE MODELING

Noise from vehicular traffic was projected using a computer program that replicates the FHWA Traffic Noise Prediction Model (FHWA-RD-77-108). The FHWA model arrives at the predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). Key model parameters and REMEL adjustments are presented below:

- Roadway classification (e.g., freeway, major arterial, arterial, secondary, collector, etc.)
- Roadway active width (distance between the center of the outer most travel lanes on each side of the roadway)
- Average Daily Traffic (ADT) Volumes, Travel Speeds, Percentages of automobiles, medium trucks and heavy trucks
- Roadway grade and angle of view
- Site conditions (e.g., soft vs. hard)
- Percentage of total ADT which flows each hour throughout a 24-hour period

Table 8 shows the roadway volumes, speeds, and site conditions used in the analysis. The following outlines key adjustments made to the REMEL for project site parameter inputs:

- Vertical and horizontal distances (sensitive receptor distance from noise source)
- Noise barrier vertical and horizontal distances (noise barrier distance from sound source and receptor).
- Traffic noise source spectra
- Topography

Traffic noise levels were calculated at the right-of-way based on distance 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 modeled noise levels are shown for comparative purposes only to show the difference between with and without project conditions.

## GROUNDBORNE VIBRATION MODELING

Groundborne vibration modeling was performed using vibration propagation equations and construction equipment source levels obtained from the FTA *Transit Noise and Vibration Impact Assessment Manual* (2018). Table 9 shows typical vibration levels associated with commonly used construction equipment based on data from the FTA.

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 9, a vibratory roller could generate up to 0.21 in/sec PPV at and operation of a large bulldozer could generate up to 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 in/sec 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.

The fundamental equation used to calculate vibration propagation through average soil conditions and distance is as follows:

$$PPV_{equipment} = PPV_{ref} (25/D_{rec})^n$$

Where: $PPV_{ref}$ = *reference PPV at 250ft.*
$D_{rec}$ = *distance from equipment to receiver in ft.*
n = 1.5 (*the value related to the attenuation rate through ground*)

## Table 7 (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 7 (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 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 | | |
| Golf Club Dr | North of Oak Valley Pkwy | 3,900 | 4,100 | 25 | Soft |
| Oak View Dr | Noth to Oak Valley Pkwy | 9,200 | 9,600 | 45 | Soft |
| Beaumont Ave | North of Brookside Ave | 12,300 | 12,500 | 50 | Soft |
| | Brookside Ave to Cougar Way | 12,100 | 12,700 | 40 | Soft |
| | Cougar Way to Project Driveway | 15,100 | 15,900 | 40 | Soft |
| | Project Driveway to Oak Valley Pkwy | 14,600 | 16,200 | 40 | Soft |
| | Oak Valley Pkwy to 12th St | 12,700 | 13,900 | 40 | Soft |
| | 12th St to 10th St | 11,600 | 12,400 | 40 | Soft |
| | South of 10th St | 11,900 | 12,300 | 30 | Soft |
| Palm Ave | Cougar Way to Oak Valley Pkwy | 3,300 | 3,500 | 40 | Soft |
| | Oak Valley Pkwy to 12th St | 2,900 | 3,300 | 30 | Soft |
| Brookside Ave | West of Beaumont Ave | 4,400 | 4,600 | 40 | Soft |
| | East of Beaumont Ave | 6,400 | 6,600 | 40 | Soft |
| Cougar Wy | Beaumont Ave to Palm Ave | 5,900 | 6,100 | 35 | Soft |
| Oak Valley Pkwy | West of Golf Club Drive | 18,100 | 18,500 | 45 | Soft |
| | Golf Club Drive to Oak View Drive | 17,000 | 17,600 | 45 | Soft |
| | Oak View Drive to Western Project Driveway | 14,700 | 15,800 | 45 | Soft |
| | Western Project Driveway to Beaumont Ave | 14,500 | 16,000 | 45 | Soft |
| | Beaumont Ave to Palm Ave | 13,200 | 14,200 | 35 | Soft |
| | East of Palm Ave | 12,500 | 12,900 | 35 | Soft |
| 12th Street | West of Beaumont Ave | 2,400 | 2,600 | 25 | Soft |
| | East of Beaumont Ave | 1,600 | 1,800 | 25 | Soft |
| 10th Street | West of Beaumont Ave | 1,400 | 1,600 | 25 | Soft |
| | East of Beaumont Ave | 1,700 | 1,900 | 25 | Soft |

| Vehicle Distribution (Light Mix)[2] | | | |
|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM-7 PM) | Evening % (7 PM-10 PM) | Night % (10 PM-7 AM) |
| 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)[2] | | | |
|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM-7 PM) | Evening % (7 PM-10 PM) | Night % (10 PM-7 AM) |
| 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) Source: *Beaumont Village Traffic Impact Analysis* (Ganddini Group, Inc., September 27, 2023).

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

**Table 9**
**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

# 6. NOISE AND VIBRATION IMPACTS

This section analyzes the significance of project-related noise and groundborne vibration impacts relative to standards established by the City of Beaumont and other applicable agencies in the context of CEQA. Appendix G of the California Environmental Quality Act Guidelines (Title 14, Division 6, Chapter 3 of the California Code of Regulations) includes an environmental checklist that identifies issues upon which findings of significance should be made. The CEQA Environmental Checklist Appendix G, XIII. Noise, requires determination if the project would 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?*

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

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

## NOISE IMPACTS

*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?*

**Finding: Less Than Significant With Mitigation Incorporated**

In relation to the Environmental Checklist noise issue "a", applicable standards established by the City of Beaumont can be categorized into the following areas:

- Construction Noise
- Stationary Source Noise
- Mobile Source Noise

**Construction Noise**

Construction noise is regulated within Section 9.02.110(F) of the City of Beaumont Municipal Code (see Regulatory Setting section of this report). Accordingly, the project would result in a significant impact if:

- Project construction occurs outside the hours of 6:00 AM and 6:00 PM during the months of June through September; or,
- Project construction occurs outside the hours of 7:00 AM and 6:00 PM during the months of October through May; or,
- Project construction noise exceeds 55 dBA at the interior of an occupied residence or school for any 15-minute period.

Project construction noise levels at nearby sensitive receptors were calculated using the FTA methodology. Construction noise modeling worksheets for each phase are provided in Appendix D. Anticipated noise levels during each construction phase are presented in Table 10.

As shown in Table 10, modeled construction noise levels reach up to 70 dBA $L_{eq}$ at the nearest commercial property line to the east, 66 dBA $L_{eq}$ at the nearest commercial property line to the southeast, 68 dBA $L_{eq}$ at the nearest residential property line to the northeast, and 70 dBA $L_{eq}$ at the nearest residential property line to the south of the project site.

Project construction will not occur outside of the hours outlined in Section 9.02.110(F) of the City of Beaumont Municipal Code. Based on the modeled construction noise levels (see Table 10), interior noise levels are estimated to reach a maximum of 50 dBA at the nearest residential property line with windows closed based on typical exterior to interior noise transmission. Therefore, the project would not exceed City-established standards relating to construction noise. The project impact is less than significant; no mitigation is required.

Notwithstanding the above, best management practices (BMPs) are provided in the Project Description and should be added to project plans and in contract specifications to minimize construction noise emanating from the proposed project.

**Stationary Source Noise**

Stationary noise source standards are established within Section 9.02.050 of the City of Beaumont Municipal Code (see Regulatory Setting section of this report). Accordingly, the project would result in a significant impact if:

- Project operational noise exceeds the City-established stationary noise standards at the exterior of nearby sensitive receptors (variable from 65-71 dBA $L_{eq}$; see in Table 5); or,
- Project operational noise exceeds the City-established stationary noise standards at the interior of nearby sensitive receptors (45 dBA $L_{eq}$ daytime or 35 dBA $L_{eq}$ at nighttime for residential uses; see Table 6).

Noise levels at nearby sensitive receptors were determined based on the SoundPLAN acoustical model developed for the project. SoundPLAN modeling worksheets are provided in Appendix F. Figure 6 shows the modeled project operational noise levels at the nearby sensitive receptors for a daytime scenario conservatively assuming all on-site noise sources are operating simultaneously. Figure 7 shows the modeled project operational noise levels at nearby sensitive receptors for a nighttime scenario assuming no car wash or vacuuming activities occur between the hours of 10:00 PM and 7:00 AM. Table 11 shows the modeled project operational noise levels relative to the City-established standards.

*Exterior Noise Levels*

Based on the operational noise modeling, full project operation would not exceed the daytime exterior adjusted stationary noise standards (65-71 dBA $L_{eq}$) but would exceed the nighttime exterior adjusted stationary noise standards (48 dBA $L_{eq}$) at all six sensitive receptors (see Table 11). This impact can be mitigated with implementation of the following mitigation measure:

**Mitigation Measure NOI-1:** Prohibit use of the car wash and associated vacuums between the hours of 10:00 PM and 7:00 AM.

Project operational noise levels without the car wash or vacuuming activities would range between 36.2 and 41.2 dBA $L_{eq}$ at the exterior of nearby sensitive receivers (see Table 11). Therefore, the project will not exceed City-established stationary noise standards at the exterior of nearby sensitive receptors, for both daytime and nighttime periods, with implementation of Mitigation Measure NOI-1. The project impact is less than significant with mitigation incorporated.

*Interior Noise Levels*

Based on the operational noise modeling, full project operational noise is expected to range between 31.9 and 43.6 dBA $L_{eq}$ at the interior of nearby sensitive receivers (see Table 11). Full project operation will not exceed the daytime interior stationary noise standard (45 dBA $L_{eq}$) but would exceed the nighttime interior stationary noise standard (35 dBA $L_{eq}$) at five of the six sensitive receptors (see Table 11). This impact can be mitigated with implementation of the previously identified Mitigation Measure NOI-1.

Project operational noise levels without the car wash or vacuuming activities would range between 16.2 and 21.2 dBA $L_{eq}$ at the interior of nearby sensitive receivers (see Table 11). Therefore, the project will not exceed City-established stationary noise standards at the interior of nearby sensitive receptors, for both daytime and nighttime periods, with implementation of Mitigation Measure NOI-1. The project impact is less than significant with mitigation incorporated.

**Mobile Source Noise**

The City of Beaumont General Plan establishes that the standard used for maximum outdoor noise levels in residential areas in California, and the City specifically, is a CNEL of 65 dBA; no land use compatibility standards are specified for other land uses that would pertain to mobile source noise.

California courts have rejected use of what is effectively a single "absolute noise level" threshold of significance (e.g., exceed 65 dBA CNEL) on the grounds that the use of such a threshold fails to consider the magnitude or severity of increases in noise levels attributable to the project in different environments (see *King and Gardiner Farms, LLC v. County of Kern* (2020) 45 Cal.App.5th 814). California courts have also upheld the use of "ambient plus increment" thresholds for assessing project noise impacts as consistent with CEQA, noting however, that the severity of existing noise levels should not be ignored by incorporating a smaller incremental threshold for areas where existing ambient noise levels were already high (see *Mission Bay Alliance v. Office of Community Investment and Infrastructure* (2016) 6 Cal.App.5th 160).

It is widely accepted that the average healthy human ear can barely perceive changes of 3 dBA in an outdoor environment and that a change of 5 dBA is readily perceptible.[5] Based on the City-established standard and considering relevant case law, the project would result in a significant impact if:

- The addition of project trips on surrounding roadways causes noise levels to increase by:
  - 5 dBA in residential areas where the existing ambient noise level is less than or equal to a CNEL of 65 dBA; or,
  - 3 dBA in residential areas where the existing ambient noise level exceeds a CNEL of 65 dBA.

*Project Operational Mobile Source Noise*

Roadway noise levels were calculated at roadways included in the *Beaumont Village Traffic Impact Analysis* (Ganddini Group, Inc., September 27, 2023) based on the FHWA Traffic Noise Prediction Model methodology. During operation, with incorporation of pass-by and internal trip reductions, the proposed project is expected to generate approximately 4,095 average daily trips with 335 trips during the AM peak-hour and 342 trips during the PM peak-hour. Roadway noise levels were calculated for the following scenarios:

- *Existing (without Project)*: This scenario refers to existing year traffic noise conditions.
- *Existing Plus Project*: This scenario refers to existing year plus project traffic noise conditions.

[5] California Department of Transportation's *Technical Noise Supplement to the Traffic Noise Analysis Protocol* (2013)

Table 12 shows the change in existing roadway noise levels with the addition of project-generated operational trips. FHWA Traffic Noise Prediction Model calculation worksheets are provided in Appendix E.

As shown in Table 12, modeled existing traffic noise levels range between 58-75 dBA CNEL and the modeled Existing Plus Project traffic noise levels range between 58-75 dBA CNEL at the right-of-way of each study roadway segment. The addition of project trips is not expected to change noise levels in excess of the applicable threshold at any of the study roadway segments (see Table 12). The project impact is less than significant; no mitigation is required.

*Construction Mobile Source Noise*

Construction truck trips would occur throughout the construction period. Given the project site's proximity to the Interstate 10 Freeway, it is anticipated that vendor and/or haul truck traffic would take the most direct route to the appropriate freeway ramps.

Beaumont Avenue currently handles approximately 11,600 to 14,600 in the vicinity of the project site and Oak Valley Parkway handles approximately 12,500 to 18,100 average daily vehicle trips.[6] According to the *Beaumont Village Air Quality, Global Climate Change, and Energy Impact Analysis* (Ganddini Group, Inc., 2023), the greatest number of construction-related vehicle trips per day would be during building construction at up to 21 vehicle trips per day (14 for worker trips and 7 for vendor trips). Therefore, vehicle traffic generated during project construction is nominal relative to existing roadway volumes and would not result in the doubling of traffic volume necessary to increase noise levels by 3 dBA. The project impact is less than significant; no mitigation is required.

### GROUNDBORNE VIBRATION IMPACTS

*Would the project result in:*

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

**Finding: Less Than Significant**

In relation to the Environmental Checklist noise issue "b", the City of Beaumont has not established thresholds of significance concerning groundborne vibration. In the absence of City-established thresholds, groundborne vibration impacts are based on guidance from the *Transportation and Construction Vibration Guidance Manual* (California Department of Transportation, 2020) (see Regulatory Setting section). Accordingly, the project would result in a significant impact if:

- Groundborne vibration levels generated by the project have the potential to cause architectural damage at nearby buildings by exceeding the following PPV:
  - 0.08 in/sec at extremely fragile historic buildings, ruins, ancient monuments
  - 0.10 in/sec at fragile buildings
  - 0.25 in/sec at historic and some old buildings
  - 0.30 in/sec at older residential structures
  - 0.50 in/sec at new residential structures and modern industrial/commercial buildings.
- Groundborne vibration levels generated by the project have the potential to cause severe annoyance to people living or working in nearby buildings by exceeding a PPV of 0.4 in/sec.

Groundborne vibration modeling worksheets are provided in Appendix G.

[6] Existing average daily traffic volumes obtained from the *Beaumont Village Traffic Impact Analysis* (Ganddini Group, Inc., September 27, 2023).

Based on the groundborne vibration modeling, use of a vibratory roller is expected to generate a PPV of 0.026 in/sec and use of a bulldozer is expected to generate a PPV of 0.011 in/sec at the closest off-site building, a residential use located approximately 100 feet south of the project site. Other equipment anticipated to be used during project construction generate lower PPV. Therefore, groundborne vibration generated by project construction would not exceed the levels necessary to cause architectural damage or severe annoyance to persons living or working in nearby buildings. The project impact is less than significant; no mitigation is required.

The most substantial sources of groundborne vibration during post-construction project operations will include the movement of passenger vehicles and trucks on paved and generally smooth surfaces. Loaded trucks generally have a PPV of 0.076 at a distance of 25 feet (Caltrans 2020), which is a substantially lower PPV than that of a vibratory roller (0.210 in/sec PPV at 25 feet). Therefore, groundborne vibration levels generated by project operation would not exceed those modeled for project construction.

### AIR TRAFFIC IMPACTS

*Would the project result in:*

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?*

**Finding: No Impact**

In relation to the Environmental Checklist noise issue "c", the closest airport to the project site is the Banning Municipal Airport, with airport runways located approximately 6.99 miles to the southeast of the project site. Per the Noise Compatibility Contour Map for the Banning Municipal Airport (Map BN-3) provided in the Riverside County Airport Land Use Compatibility Plan Policy Document (adopted October 2004), the project site is located well outside the airport's 55 dBA CNEL noise contours. Therefore, the project would not expose people residing or working in the project area to excessive noise levels associated with airports.

**Table 10**
**Construction Noise Levels (dBA $L_{eq}$)**

| Phase | Receptor Location | Exterior Construction Noise Levels (dBA Leq) | Interior Construction Noise Levels (dBA Leq) |
|---|---|---|---|
| Site Preparation | Commercial to East (Stater Brothers & Walgreens, 1430 & 1400 Beaumont Avenue, Beaumont) | 62 | 42 |
| | Commercial to Southeast (Oak Valley Animal Hospital, 1386 Beaumont Avenue, Beaumont) | 59 | 39 |
| | Residential to Northeast (Mountain View Apartments, 488 E 15th Street, Beaumont) | 60 | 40 |
| | Residential to South (315 Oak Valley Parkway, Beaumont) | 62 | 42 |
| Grading | Commercial to East (Stater Brothers & Walgreens, 1430 & 1400 Beaumont Avenue, Beaumont) | 70 | 50 |
| | Commercial to Southeast (Oak Valley Animal Hospital, 1386 Beaumont Avenue, Beaumont) | 66 | 46 |
| | Residential to Northeast (Mountain View Apartments, 488 E 15th Street, Beaumont) | 68 | 48 |
| | Residential to South (315 Oak Valley Parkway, Beaumont) | 70 | 50 |
| Building Construction | Commercial to East (Stater Brothers & Walgreens, 1430 & 1400 Beaumont Avenue, Beaumont) | 68 | 48 |
| | Commercial to Southeast (Oak Valley Animal Hospital, 1386 Beaumont Avenue, Beaumont) | 65 | 45 |
| | Residential to Northeast (Mountain View Apartments, 488 E 15th Street, Beaumont) | 66 | 46 |
| | Residential to South (315 Oak Valley Parkway, Beaumont) | 68 | 48 |
| Paving | Commercial to East (Stater Brothers & Walgreens, 1430 & 1400 Beaumont Avenue, Beaumont) | 66 | 46 |
| | Commercial to Southeast (Oak Valley Animal Hospital, 1386 Beaumont Avenue, Beaumont) | 63 | 43 |
| | Residential to Northeast (Mountain View Apartments, 488 E 15th Street, Beaumont) | 64 | 44 |
| | Residential to South (315 Oak Valley Parkway, Beaumont) | 67 | 47 |
| Architectural Coating | Commercial to East (Stater Brothers & Walgreens, 1430 & 1400 Beaumont Avenue, Beaumont) | 56 | 36 |
| | Commercial to Southeast (Oak Valley Animal Hospital, 1386 Beaumont Avenue, Beaumont) | 53 | 33 |
| | Residential to Northeast (Mountain View Apartments, 488 E 15th Street, Beaumont) | 54 | 34 |
| | Residential to South (315 Oak Valley Parkway, Beaumont) | 56 | 36 |

Notes:
(1) Construction noise worksheets are provided in Appendix D.
(2) Per measured existing ambient noise levels (Table 1). STNM1 was used for receptors to the south and southeast and STNM2 was used for receptors to the east and northeast.

## Table 11
## Project Operational Noise Levels

| Receiver | Daytime Scenario (Full Operation) | | | Nighttime Scenario (No Car Wash and Vacuuming Operations) | | |
|---|---|---|---|---|---|---|
| | Modeled Operational Noise Level (dBA Leq)[1] | Adjusted Noise Standards Day/Night (dBA Leq)[2,3] | Exceeds Standards? (Day/Night) | Modeled Operational Noise Level (dBA Leq)[4] | Adjusted Noise Standards Day/Night (dBA Leq)[2] | Exceeds Leq or Lmax Standards? (Day/Night) |
| Exterior Noise | | | | | | |
| R1 | 62.1 | 71/48 | No/Yes | 41.2 | 71/48 | No/No |
| R2 | 61.2 | 70/48 | No/Yes | 36.2 | 70/48 | No/No |
| R3 | 51.9 | 71/48 | No/Yes | 36.8 | 71/48 | No/No |
| R4 | 63.3 | 70/48 | No/Yes | 36.9 | 70/48 | No/No |
| R5 | 63.6 | 65/48 | No/Yes | 39.7 | 65/48 | No/No |
| R6 | 56.9 | 71/48 | No/Yes | 40.1 | 71/48 | No/No |
| Interior Noise | | | | | | |
| R1 | 42.1 | 45/35 | No/Yes | 21.2 | 45/35 | No/No |
| R2 | 41.2 | 45/35 | No/Yes | 16.2 | 45/35 | No/No |
| R3 | 31.9 | 45/35 | No/No | 16.8 | 45/35 | No/No |
| R4 | 43.3 | 45/35 | No/Yes | 16.9 | 45/35 | No/No |
| R5 | 43.6 | 45/35 | No/Yes | 19.7 | 45/35 | No/No |
| R6 | 36.9 | 45/35 | No/Yes | 20.1 | 45/35 | No/No |

Notes:

(1) Operational noise model worksheets are provided in Appendix F; noise levels are illustrated on Figure 6.

(2) See Table 6.

(3) See LTNM1 data in Table 2. This is a conservative analysis since receptors vary in distance from the roadways, which are the main noise source. Existing abmient nighttime noise levels are likely higher at several receptors.

(4) Operational noise model worksheets are provided in Appendix F; noise levels are illustrated on Figure 7.

## Table 12
## Project Operational Mobile Source Noise Impacts

| Roadway | Segment | Distance from roadway centerline to ROW (feet)[1] | Modeled Noise Levels (dBA CNEL)[2] | | | Threshold[3] (Change in dBA CNEL) | Significant Impact? |
|---|---|---|---|---|---|---|---|
| | | | Existing at ROW | Existing Plus Project at ROW | Change in Noise Level | | |
| Golf Club Dr | North of Oak Valley Pkwy | 40 | 61.0 | 61.2 | +0.2 | +3 | No |
| Oak View Dr | North to Oak Valley Pkwy | 39 | 69.9 | 70.1 | +0.2 | +5 | No |
| Beaumont Ave | North of Brookside Ave | 44 | 75.1 | 75.1 | 0 | +5 | No |
| | Brookside Ave to Cougar Way | 39 | 70.0 | 70.2 | +0.2 | +5 | No |
| | Cougar Way to Project Dwy | 39 | 71.0 | 71.2 | +0.2 | +5 | No |
| | Project Dwy to Oak Valley Pkwy | 55 | 73.4 | 73.9 | +0.5 | +5 | No |
| | Oak Valley Pkwy to 12th St | 50 | 73.2 | 73.6 | +0.4 | +5 | No |
| | 12th St to 10th St | 50 | 72.8 | 73.1 | +0.3 | +5 | No |
| | South of 10th St | 50 | 71.3 | 71.4 | +0.1 | +5 | No |
| Palm Ave | Cougar Way to Oak Valley Pkwy | 39 | 64.4 | 64.6 | +0.2 | +3 | No |
| | Oak Valley Pkwy to 12th St | 39 | 61.3 | 61.8 | +0.5 | +3 | No |
| Brookside Ave | West of Beaumont Ave | 44 | 65.1 | 65.3 | +0.2 | +5 | No |
| | East of Beaumont Ave | 44 | 66.7 | 66.9 | +0.2 | +5 | No |
| Cougar Way | Beaumont Ave to Palm Ave | 44 | 65.2 | 65.3 | +0.1 | +5 | No |
| Oak Valley Pkwy | West of Golf Club Drive | 55 | 75.1 | 75.2 | +0.1 | +5 | No |
| | Golf Club Drive to Oak View Drive | 55 | 74.8 | 75.0 | +0.2 | +5 | No |
| | Oak View Drive to Western Project Dwy | 55 | 74.2 | 74.5 | +0.3 | +5 | No |
| | Western Project Dwy to Beaumont Ave | 55 | 74.1 | 74.5 | +0.4 | +5 | No |
| | Beaumont Ave to Palm Ave | 55 | 72.2 | 72.5 | +0.3 | +5 | No |
| | East of Palm Ave | 55 | 71.9 | 72.1 | +0.2 | +5 | No |
| 12th Street | West of Beaumont Ave | 30 | 60.1 | 60.5 | +0.4 | +3 | No |
| | East of Beaumont Ave | 30 | 58.4 | 58.9 | +0.5 | +3 | No |
| 10th Street | West of Beaumont Ave | 30 | 57.8 | 58.4 | +0.6 | +3 | No |
| | East of Beaumont Ave | 30 | 58.6 | 59.1 | +0.5 | +3 | No |

Notes:

(1) Right-of-way (ROW) per the City of Beaumont General Plan Roadway Cross-Sections (December 2020).

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

(3) 5 dBA in residential areas where the ambient noise level is less than or equal to a CNEL of 65 dBA; or
3 dBA in residential areas where the ambient noise level exceeds a CNEL of 65 dBA.


**Figure 6**
**Operational Noise Levels Daytime (Full Operation)**


**Figure 7**
**Operational Noise Levels With No Car Wash or Vacuuming Activities**

# 7. REFERENCES


**Beaumont, City of**
2020 City of Beaumont General Plan. December.
2022 City of Beaumont Municipal Code.

**California Department of Transportation**
2020 Transportation and Construction Vibration Guidance Manual. April.

**Environmental Protection Agency**
1974 "Information on Levels of Environmental Noise Requisite to Protect Public Health And Welfare with an Adequate Margin of Safety," EPA/ONAC 550/9-74-004, March, 1974.

**Federal Transit Administration**
2006 Transit Noise and Vibration Impact Assessment. Typical Construction Equipment Vibration Emissions. FTAVA-90-1003-06.

2018 Transit Noise and Vibration Impact Assessment. Typical Construction Equipment Vibration Emissions.

**Ganddini Group, Inc.**
2023 Beaumont Village Project Traffic Impact Analysis. September 27.

2023 Beaumont Village Air Quality, Global Climate Change, and Energy Impact Analysis. February 7.

**Office of Planning and Research**
2003 State of California General Plan Guidelines

2017 State of California General Plan Guidelines

**Riverside, County of**
2001 General Plan, Chapter 4, Figure C-3 "Link Volume Capacities/Level of Service for Riverside County Roadways".
2009 County of Riverside Industrial Hygiene Guidelines for Determining and Mitigating Traffic Noise Impacts to Residential Structures and County.

**U.S. Department of Transportation**
2006 FHWA Roadway Construction Noise Model User's Guide. January.

**Carl Stautins**
2014 Warehouse & Forklift Noise Exposure – Noise Testing. November 4, 2014.

# APPENDICES

Appendix A List of Acronyms
Appendix B Glossary
Appendix C Noise Measurement Field Worksheets
Appendix D Construction Noise Model Worksheets
Appendix E FHWA Traffic Noise Model Worksheets
Appendix F SoundPLAN Worksheets
Appendix G Groundborne 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) |
| LOS C | Level of Service C |
| 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

# GLOSSARY

| 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:** Beaumont Village **Date:** December 10, 2020

**Project #:** JN 190001

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

**Nearest Address or Cross Street:** 275 Oak Valley Parkway, Beaumont, California.

**Site Description (Type of Existing Land Use and any other notable features):** Project site: Vacant site bordered by Beaumont Ave to east, Oak Valley Parkway to south, and vacant land to north and west. Noise Measurement Site: Oak Valley Parkway to north with vacant project site further north and single-family residential to south.

**Weather:** Sunny, <5% white cloud. **Settings:** SLOW FAST

**Temperature:** 56 deg F **Wind:** 5-10mph **Humidity:** 42% **Terrain:** Flat

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

**Leq:** 70.7 dB

**Lmax** 88.5 dB

**L2** 77.8 dB

**L8** 75.1 dB

**L25** 71.6 dB

**L50** 67.0 dB

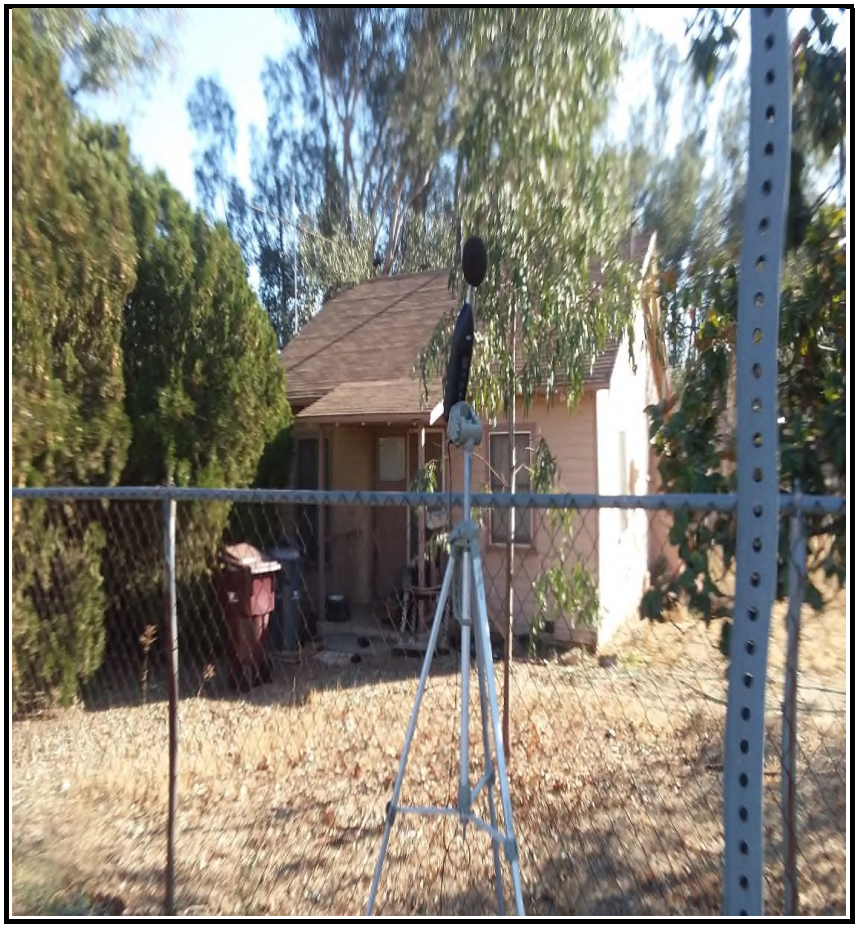
**Primary Noise Source:** Traffic noise from the 225 vehicles traveling along Oak Valley Parkway passing microphone. Traffic ambiance from vehicles traveling along Beaumont Avenue.

**Secondary Noise Sources:** Bird song, some residential ambiance, sporadic distant train horn, distant aircraft, propeller, jet & chopper.

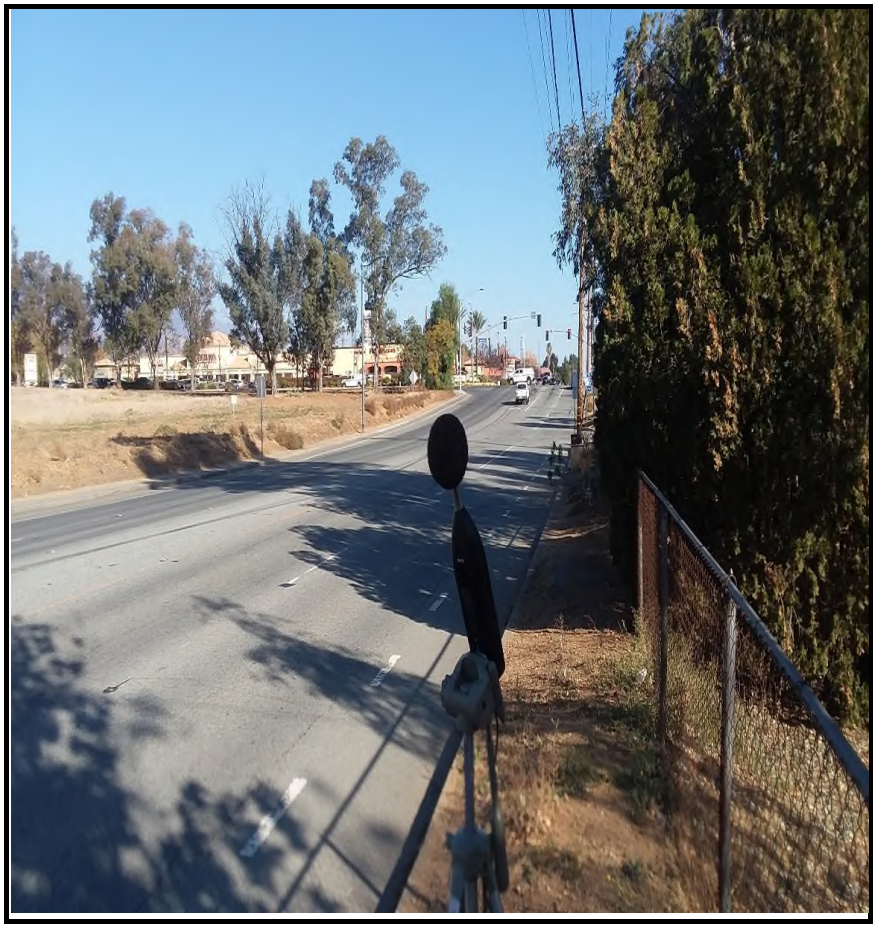
| | | | |
|---|---|---|---|
| **NOISE METER:** | SoundTrack LXT Class 1 | **CALIBRATOR:** | Larson Davis CAL250 |
| **MAKE:** | Larson Davis | **MAKE:** | Larson Davis |
| **MODEL:** | LXT1 | **MODEL:** | Cal 250 |
| **SERIAL NUMBER:** | 3099 | **SERIAL NUMBER:** | 2733 |
| **FACTORY CALIBRATION DATE:** | 4/9/2020 | **FACTORY CALIBRATION DATE:** | 4/2/2020 |
| **FIELD CALIBRATION DATE:** | 12/10/2020 | | |

**Noise Measurement**
**Field Data**

PHOTOS:



STNM1 looking SE across front yard of residence, 275 Oak Valley Parkway, Beaumont, California.



STNM1 looking NE across Oak Valley Parkway towards Beaumont Avenue intersection.

| Summary | |
|---|---|
| **File Name on Meter** | LxT_Data.034 |
| **File Name on PC** | SLM_0003099_LxT_Data_034.01.ldbin |
| **Serial Number** | 0003099 |
| **Model** | SoundTrack LxT® |
| **Firmware Version** | 2.402 |
| **User** | Ian Edward Gallagher |
| **Location** | STNM1 JN 190001 33°56'48.87"N 116°58'43.94"W |
| **Job Description** | 15 minute noise measurtement ( 1 x 15 minutes ) |

| Measurement | |
|---|---|
| **Description** | |
| **Start** | 2020-12-10 14:12:05 |
| **Stop** | 2020-12-10 14:27:05 |
| **Duration** | 00:15:00.0 |
| **Run Time** | 00:15:00.0 |
| **Pause** | 00:00:00.0 |
| **Pre Calibration** | 2020-12-10 14:10:16 |
| **Post Calibration** | None |

| Overall Settings | |
|---|---|
| **RMS Weight** | A Weighting |
| **Peak Weight** | Z Weighting |
| **Detector** | Slow |
| **Preamp** | PRMLxT1L |
| **Microphone Correction** | Off |
| **Integration Method** | Linear |
| **OBA Range** | Low |
| **OBA Bandwidth** | 1/1 and 1/3 |
| **OBA Freq. Weighting** | Z Weighting |
| **OBA Max Spectrum** | Bin Max |
| **Overload** | 123.8 dB |

| Results | | | |
|---|---|---|---|
| **$LA_{eq}$** | 70.7 | | |
| **LAE** | 100.2 | | |
| **EA** | 1.167 | $mPa^2h$ | |
| **EA8** | 37.333 | $mPa^2h$ | |
| **EA40** | 186.666 | $mPa^2h$ | |
| **$LZ_{peak\ (max)}$** | 2020-12-10 14:22:03 | 120.5 | dB |
| **$LAS_{max}$** | 2020-12-10 14:22:03 | 88.5 | dB |
| **$LAS_{min}$** | 2020-12-10 14:17:35 | 45.0 | dB |
| **SEA** | 130.5 | dB | |

| | | Statistics | |
|---|---|---|---|
| **$LC_{eq}$** | 75.4 dB | **LAI2.00** | 77.8 dB |
| **$LA_{eq}$** | 70.7 dB | **LAI8.00** | 75.1 dB |
| **$LC_{eq}$ - $LA_{eq}$** | 4.7 dB | **LAI25.00** | 71.6 dB |
| **$LAI_{eq}$** | 75.3 dB | **LAI50.00** | 67.0 dB |
| **$LA_{eq}$** | 70.7 dB | **LAI66.60** | 63.0 dB |
| **$LAI_{eq}$ - $LA_{eq}$** | 4.7 dB | **LAI90.00** | 54.9 dB |

**Noise Measurement**
**Field Data**

**Project Name:** Beaumont Village **Date:** December 10, 2020

**Project #:** JN 190001

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

**Nearest Address or Cross Street:** 408 Beaumont Avenue, Beaumont, California.

**Site Description (Type of Existing Land Use and any other notable features):** Project site: Vacant site bordered by Beaumont Ave to east, Oak Valley Parkway to south, and vacant land to north and west. Noise Measurement Site: Beaumont Ave to west, multi-family residential to east, and commercial southeast.

**Weather:** Sunny, <5% white cloud. **Settings:** SLOW FAST

**Temperature:** 56 deg F **Wind:** 5-10mph **Humidity:** 42% **Terrain:** Flat

**Start Time:** 2:47 PM **End Time:** 3:02 PM **Run Time:**

**Leq:** 69.7 dB

**Lmax** 82.6 dB

**L2** 75.9 dB

**L8** 73.4 dB

**L25** 70.8 dB

**L50** 67.7 dB

**Primary Noise Source:** Traffic noise from the 258 vehicles traveling along Beaumont Ave passing microphone

Traffic ambiance from vehicles traveling along Oak Valley Parkway.

**Secondary Noise Sources:** Bird song, some residential ambiance, sporadic distant train horn, distant aircraft, propeller, jet & chopper.

| | | | |
|---|---|---|---|
| **NOISE METER:** | SoundTrack LXT Class 1 | **CALIBRATOR:** | Larson Davis CAL250 |
| **MAKE:** | Larson Davis | **MAKE:** | Larson Davis |
| **MODEL:** | LXT1 | **MODEL:** | Cal 250 |
| **SERIAL NUMBER:** | 3099 | **SERIAL NUMBER:** | 2733 |
| **FACTORY CALIBRATION DATE:** | 4/9/2020 | **FACTORY CALIBRATION DATE:** | 4/2/2020 |
| **FIELD CALIBRATION DATE:** | 12/10/2020 | | |

**Noise Measurement**
**Field Data**

PHOTOS:

STNM2 looking SW down Beaumont Avenue towards Oak Valley Parkway intersection.


STNM2 looking NE at multi-family residence 408 Beaumont Ave, Beaumont, California.

| Summary | | | |
|---|---|---|---|
| **File Name on Meter** | LxT_Data.035 | | |
| **File Name on PC** | SLM_0003099_LxT_Data_035.01.ldbin | | |
| **Serial Number** | 0003099 | | |
| **Model** | SoundTrack LxT® | | |
| **Firmware Version** | 2.402 | | |
| **User** | Ian Edward Gallagher | | |
| **Location** | STNM2 JN 190001 33°56'56.54"N 116°58'37.58"W | | |
| **Job Description** | 15 minute noise measurement ( 1 x 15 minutes ) | | |
| Measurement | | | |
| **Start** | 2020-12-10 14:47:25 | | |
| **Stop** | 2020-12-10 15:02:25 | | |
| **Duration** | 00:15:00.0 | | |
| **Run Time** | 00:15:00.0 | | |
| **Pause** | 00:00:00.0 | | |
| **Pre Calibration** | 2020-12-10 14:45:50 | | |
| **Post Calibration** | None | | |
| Overall Settings | | | |
| **RMS Weight** | A Weighting | | |
| **Peak Weight** | Z Weighting | | |
| **Detector** | Slow | | |
| **Preamp** | PRMLxT1L | | |
| **Microphone Correction** | Off | | |
| **Integration Method** | Linear | | |
| **OBA Range** | Low | | |
| **OBA Bandwidth** | 1/1 and 1/3 | | |
| **OBA Freq. Weighting** | Z Weighting | | |
| **OBA Max Spectrum** | Bin Max | | |
| **Overload** | 123.8 dB | | |
| Results | | | |
| **$LA_{eq}$** | 69.7 | | |
| **LAE** | 99.2 | | |
| **EA** | 931.599 µPa²h | | |
| **EA8** | 29.811 mPa²h | | |
| **EA40** | 149.056 mPa²h | | |
| **$LZ_{peak\ (max)}$** | 2020-12-10 14:50:11 | 104.8 dB | |
| **$LAS_{max}$** | 2020-12-10 14:55:16 | 82.6 dB | |
| **$LAS_{min}$** | 2020-12-10 14:57:55 | 51.7 dB | |
| **SEA** | -99.9 dB | | |
| | | Statistics | |
| **$LC_{eq}$** | 75.5 dB | **LAI2.00** | 75.9 dB |
| **$LA_{eq}$** | 69.7 dB | **LAI8.00** | 73.4 dB |
| **$LC_{eq}$ - $LA_{eq}$** | 5.8 dB | **LAI25.00** | 70.8 dB |
| **$LAI_{eq}$** | 71.3 dB | **LAI50.00** | 67.7 dB |
| **$LA_{eq}$** | 69.7 dB | **LAI66.60** | 65.7 dB |
| **$LAI_{eq}$ - $LA_{eq}$** | 1.6 dB | **LAI90.00** | 60.0 dB |
| **# Overloads** | 0 | | |

**Noise Measurement**
**Field Data**

**Project Name:** Beaumont Village **Date:** December 10, 2020

**Project #:** JN 190001

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

**Nearest Address or Cross Street:** Beaumont Avenue & Oak Valley Parkway. Mic location: 33°56'50.74"N 116°58'39.65"W

**Site Description (Type of Existing Land Use and any other notable features):** Project site: Vacant site bordered by Beaumont Ave to east, Oak Valley Parkway to south, and vacant land to north and west. Noise Measurement Site: SW corner fo site with vacant land to north and west, Beaumont Ave to east and commercial further east, and Oak Valley Parkway to south with residential further south.

**Weather:** Almost clear skies, <5% cloud. Sunset/rise: 4:42PM/6:50AM **Settings:** SLOW FAST

**Temperature:** 57-36 deg F **Wind:** 0-10mph **Humidity:** 20-50% **Terrain:** Flat

**Start Time:** 5:00 PM **End Time:** 5:00 PM **Run Time:**

**Leq:** 56.6 dB **Primary Noise Source:** Traffic noise from vehicles traveling along Oak Valley Parkway and Beaumont Avenue.

**Lmax** 85.9 dB

**L2** 62.4 dB **Secondary Noise Sources:** Bird song by day, some residential ambiance, sporadic distant train horn, distant aircraft, propeller, jet & chopper. Parking lot ambiance.

**L8** 59.5 dB

**L25** 56.9 dB

**L50** 54.0 dB

| | | | |
|---|---|---|---|
| **NOISE METER:** | SoundTrack LXT Class 1 | **CALIBRATOR:** | Larson Davis CAL250 |
| **MAKE:** | Larson Davis | **MAKE:** | Larson Davis |
| **MODEL:** | LXT1 | **MODEL:** | Cal 250 |
| **SERIAL NUMBER:** | 3099 | **SERIAL NUMBER:** | 2733 |
| **FACTORY CALIBRATION DATE:** | 4/9/2020 | **FACTORY CALIBRATION DATE:** | 4/2/2020 |
| **FIELD CALIBRATION DATE:** | 12/10/2020 | | |

**Noise Measurement**
**Field Data**

PHOTOS:

LTNM1 looking SE towards Beaumont Avenue & Oak Valley Parkway intersection.


LTNM1 looking down from above showing location of microphone relative to all near by features in the area.

| Summary | | | | |
|---|---|---|---|---|
| **File Name on Meter** | LxT_Data.036 | | | |
| **File Name on PC** | SLM_0003099_LxT_Data_036.01.ldbin | | | |
| **Serial Number** | 0003099 | | | |
| **Model** | SoundTrack LxT® | | | |
| **Firmware Version** | 2.402 | | | |
| **User** | Ian Edward Gallagher | | | |
| **Location** | LTNM1 JN 190001 33°56'50.74"N 116°58'39.65"W | | | |
| **Job Description** | 24 hour noise measurement ( 24 x 1 hours ) | | | |
| **Measurement** | | | | |
| **Start** | 2020-12-10 17:00:00 | | | |
| **Stop** | 2020-12-11 17:00:00 | | | |
| **Duration** | 24:00:00.0 | | | |
| **Run Time** | 24:00:00.0 | | | |
| **Pause** | 00:00:00.0 | | | |
| **Pre Calibration** | 2020-12-10 15:47:33 | | | |
| **Post Calibration** | None | | | |
| **Overall Settings** | | | | |
| **RMS Weight** | A Weighting | | | |
| **Peak Weight** | A Weighting | | | |
| **Detector** | Slow | | | |
| **Preamp** | PRMLxT1L | | | |
| **Microphone Correction** | Off | | | |
| **Integration Method** | Linear | | | |
| **OBA Range** | Normal | | | |
| **OBA Bandwidth** | 1/1 and 1/3 | | | |
| **OBA Freq. Weighting** | A Weighting | | | |
| **OBA Max Spectrum** | Bin Max | | | |
| **Overload** | 123.0 dB | | | |
| **Results** | | | | |
| **$LA_{eq}$** | 56.6 | | | |
| **LAE** | 106.0 | | | |
| **EA** | 4.436 $mPa^2h$ | | | |
| **EA8** | 1.479 $mPa^2h$ | | | |
| **EA40** | 7.394 $mPa^2h$ | | | |
| **$LA_{peak\ (max)}$** | 2020-12-10 17:15:47 | 100.7 dB | | |
| **$LAS_{max}$** | 2020-12-11 16:24:28 | 85.9 dB | | |
| **$LAS_{min}$** | 2020-12-11 01:14:03 | 35.3 dB | | |
| **SEA** | -99.9 dB | | | |
| | | | **Statistics** | |
| **$LC_{eq}$** | 67.6 dB | | **LAI2.00** | 62.4 dB |
| **$LA_{eq}$** | 56.6 dB | | **LAI8.00** | 59.5 dB |
| **$LC_{eq}$ - $LA_{eq}$** | 11.0 dB | | **LAI25.00** | 56.9 dB |
| **$LAI_{eq}$** | 58.3 dB | | **LAI50.00** | 54.0 dB |
| **$LA_{eq}$** | 56.6 dB | | **LAI90.00** | 44.1 dB |
| **$LAI_{eq}$ - $LA_{eq}$** | 1.7 dB | | **LAI99.00** | 37.9 dB |
| **# Overloads** | 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** | 2020-12-10 | 17:00:00 | 01:00:00.0 | 01:00:00.0 | 00:00:00.0 | 59.8 | 51.1 | 17:49:55 | 79.9 | 17:50:26 | 64.6 | 61.6 | 59.8 | 58.3 | 55.5 | 53.2 |
| **2** | 2020-12-10 | 18:00:00 | 01:00:00.0 | 01:00:00.0 | 00:00:00.0 | 59.4 | 49.9 | 18:22:18 | 78.9 | 18:45:40 | 63.8 | 61.3 | 59.4 | 57.8 | 54.2 | 51.6 |
| **3** | 2020-12-10 | 19:00:00 | 01:00:00.0 | 01:00:00.0 | 00:00:00.0 | 57.8 | 46.6 | 19:21:02 | 77.9 | 19:37:20 | 63.1 | 59.7 | 57.6 | 55.6 | 52.0 | 49.0 |
| **4** | 2020-12-10 | 20:00:00 | 01:00:00.0 | 01:00:00.0 | 00:00:00.0 | 56.3 | 43.6 | 20:48:04 | 74.2 | 20:12:15 | 61.9 | 59.2 | 56.7 | 54.3 | 49.3 | 45.3 |
| **5** | 2020-12-10 | 21:00:00 | 01:00:00.0 | 01:00:00.0 | 00:00:00.0 | 54.0 | 38.9 | 21:35:41 | 69.3 | 21:24:08 | 60.2 | 57.8 | 55.2 | 52.0 | 45.2 | 41.5 |
| **6** | 2020-12-10 | 22:00:00 | 01:00:00.0 | 01:00:00.0 | 00:00:00.0 | 52.7 | 39.4 | 22:54:15 | 65.7 | 22:14:58 | 59.4 | 56.5 | 53.4 | 50.5 | 43.9 | 40.5 |
| **7** | 2020-12-10 | 23:00:00 | 01:00:00.0 | 01:00:00.0 | 00:00:00.0 | 51.5 | 39.3 | 23:01:44 | 65.0 | 23:54:14 | 58.3 | 55.6 | 52.1 | 48.6 | 43.2 | 41.2 |
| **8** | 2020-12-11 | 00:00:00 | 01:00:00.0 | 01:00:00.0 | 00:00:00.0 | 50.9 | 35.8 | 00:24:57 | 73.3 | 00:26:42 | 58.2 | 54.5 | 50.6 | 45.4 | 38.6 | 36.8 |
| **9** | 2020-12-11 | 01:00:00 | 01:00:00.0 | 01:00:00.0 | 00:00:00.0 | 48.1 | 35.3 | 01:14:03 | 67.9 | 01:50:03 | 56.6 | 52.9 | 47.5 | 42.5 | 38.0 | 36.3 |
| **10** | 2020-12-11 | 02:00:00 | 01:00:00.0 | 01:00:00.0 | 00:00:00.0 | 47.8 | 35.7 | 02:57:57 | 60.6 | 02:02:10 | 55.7 | 52.7 | 48.0 | 43.5 | 38.5 | 36.7 |
| **11** | 2020-12-11 | 03:00:00 | 01:00:00.0 | 01:00:00.0 | 00:00:00.0 | 51.4 | 36.2 | 03:19:31 | 72.6 | 03:09:31 | 60.4 | 54.7 | 50.4 | 46.4 | 40.1 | 37.5 |
| **12** | 2020-12-11 | 04:00:00 | 01:00:00.0 | 01:00:00.0 | 00:00:00.0 | 52.0 | 38.6 | 04:55:36 | 66.9 | 04:50:32 | 58.9 | 56.0 | 52.7 | 49.5 | 43.6 | 41.0 |
| **13** | 2020-12-11 | 05:00:00 | 01:00:00.0 | 01:00:00.0 | 00:00:00.0 | 54.7 | 42.2 | 05:02:44 | 70.3 | 05:54:37 | 61.0 | 58.1 | 55.3 | 52.8 | 47.2 | 43.7 |
| **14** | 2020-12-11 | 06:00:00 | 01:00:00.0 | 01:00:00.0 | 00:00:00.0 | 56.9 | 43.1 | 06:01:56 | 69.4 | 06:33:55 | 63.5 | 60.2 | 57.5 | 55.3 | 50.8 | 45.2 |
| **15** | 2020-12-11 | 07:00:00 | 01:00:00.0 | 01:00:00.0 | 00:00:00.0 | 59.0 | 47.2 | 07:13:20 | 79.0 | 07:31:30 | 64.9 | 61.1 | 58.8 | 56.7 | 52.6 | 49.6 |
| **16** | 2020-12-11 | 08:00:00 | 01:00:00.0 | 01:00:00.0 | 00:00:00.0 | 57.8 | 46.5 | 08:23:19 | 73.5 | 08:50:22 | 63.0 | 60.5 | 58.6 | 56.6 | 52.7 | 49.5 |
| **17** | 2020-12-11 | 09:00:00 | 01:00:00.0 | 01:00:00.0 | 00:00:00.0 | 56.0 | 44.8 | 09:06:37 | 74.2 | 09:34:20 | 61.0 | 58.5 | 56.4 | 54.3 | 50.3 | 46.6 |
| **18** | 2020-12-11 | 10:00:00 | 01:00:00.0 | 01:00:00.0 | 00:00:00.0 | 56.9 | 45.8 | 10:59:47 | 80.4 | 10:27:04 | 62.4 | 58.5 | 55.6 | 53.6 | 50.2 | 47.7 |
| **19** | 2020-12-11 | 11:00:00 | 01:00:00.0 | 01:00:00.0 | 00:00:00.0 | 54.7 | 45.2 | 11:07:04 | 69.8 | 11:44:49 | 60.0 | 57.7 | 55.5 | 53.6 | 50.2 | 47.6 |
| **20** | 2020-12-11 | 12:00:00 | 01:00:00.0 | 01:00:00.0 | 00:00:00.0 | 58.8 | 46.0 | 12:47:18 | 83.7 | 12:30:08 | 64.1 | 59.3 | 56.9 | 55.2 | 51.7 | 49.4 |
| **21** | 2020-12-11 | 13:00:00 | 01:00:00.0 | 01:00:00.0 | 00:00:00.0 | 56.5 | 45.6 | 13:29:52 | 75.4 | 13:22:24 | 61.9 | 59.2 | 56.8 | 54.9 | 51.8 | 49.0 |
| **22** | 2020-12-11 | 14:00:00 | 01:00:00.0 | 01:00:00.0 | 00:00:00.0 | 55.9 | 45.4 | 14:19:41 | 71.3 | 14:23:04 | 61.7 | 58.6 | 56.5 | 54.5 | 51.2 | 48.4 |
| **23** | 2020-12-11 | 15:00:00 | 01:00:00.0 | 01:00:00.0 | 00:00:00.0 | 59.4 | 46.8 | 15:23:07 | 84.3 | 15:18:24 | 64.9 | 60.5 | 58.0 | 56.2 | 52.3 | 49.1 |
| **24** | 2020-12-11 | 16:00:00 | 01:00:00.0 | 01:00:00.0 | 00:00:00.0 | 61.1 | 49.7 | 16:42:19 | 85.9 | 16:24:28 | 65.4 | 61.7 | 59.4 | 57.6 | 54.2 | 51.7 |

# APPENDIX D

# CONSTRUCTION NOISE MODEL WORKSHEETS

Receptor - Commercial to East (Stater Brothers & Walgreens, 1430 & 1400 Beaumont Avenue, Beaumont)

| 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 |
|---|---|---|---|---|---|---|---|---|---|
| **Site Preparation** | | | | | | | | | |
| Tractors/Loaders/Backhoes | 1 | 84 | 405 | 40 | 0.40 | -18.2 | -4.0 | 65.8 | 61.9 |
| | | | | | | | | Log Sum | 61.9 |
| **Grading** | | | | | | | | | |
| Excavator | 1 | 85 | 405 | 40 | 0.4 | -18.2 | -4.0 | 66.8 | 62.9 |
| Grader | 1 | 85 | 405 | 40 | 0.40 | -18.2 | -4.0 | 66.8 | 62.9 |
| Rubber Tired Dozers | 1 | 85 | 405 | 40 | 0.40 | -18.2 | -4.0 | 66.8 | 62.9 |
| Tractors/Loaders/Backhoes | 3 | 84 | 405 | 40 | 1.20 | -18.2 | 0.8 | 65.8 | 66.6 |
| | | | | | | | | Log Sum | 70.2 |
| **Building Construction** | | | | | | | | | |
| Cranes | 1 | 83 | 405 | 16 | 0.16 | -18.2 | -8.0 | 64.8 | 56.9 |
| Forklifts [2] | 3 | 48 | 405 | 40 | 1.20 | -18.2 | 0.8 | 29.8 | 30.6 |
| Generator Set | 1 | 81 | 405 | 50 | 0.50 | -18.2 | -3.0 | 62.8 | 59.8 |
| Welders | 1 | 74 | 405 | 40 | 0.40 | -18.2 | -4.0 | 55.8 | 51.9 |
| Tractors/Loaders/Backhoes | 3 | 84 | 405 | 40 | 1.20 | -18.2 | 0.8 | 65.8 | 66.6 |
| | | | | | | | | Log Sum | 67.9 |
| **Paving** | | | | | | | | | |
| Cement and Mortar Mixers | 2 | 79 | 405 | 40 | 0.8 | -18.2 | -1.0 | 60.8 | 59.9 |
| Pavers | 1 | 77 | 405 | 50 | 0.50 | -18.2 | -3.0 | 58.8 | 55.8 |
| Paving Equipment | 2 | 77 | 405 | 50 | 1.00 | -18.2 | 0.0 | 58.8 | 58.8 |
| Rollers | 2 | 80 | 405 | 20 | 0.40 | -18.2 | -4.0 | 61.8 | 57.9 |
| Tractors/Loaders/Backhoes | 1 | 84 | 405 | 40 | 0.40 | -18.2 | -4.0 | 65.8 | 61.9 |
| | | | | | | | | Log Sum | 66.3 |
| **Architectural Coating** | | | | | | | | | |
| Air Compressors | 1 | 78 | 405 | 40 | 0.40 | -18.2 | -4.0 | 59.8 | 55.9 |
| | | | | | | | | Log Sum | 55.9 |

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)

(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 (property line).

Receptor - Commercial to Southeast (Oak Valley Animal Hospital, 1386 Beaumont Avenue, Beaumont)

| 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 |
|---|---|---|---|---|---|---|---|---|---|
| **Site Preparation** | | | | | | | | | |
| Tractors/Loaders/Backhoes | 1 | 84 | 570 | 40 | 0.40 | -21.1 | -4.0 | 62.9 | 58.9 |
| | | | | | | | | Log Sum | 58.9 |
| **Grading** | | | | | | | | | |
| Excavator | 1 | 81 | 570 | 40 | 0.4 | -21.1 | -4.0 | 59.9 | 55.9 |
| Grader | 1 | 85 | 570 | 40 | 0.40 | -21.1 | -4.0 | 63.9 | 59.9 |
| Rubber Tired Dozers | 1 | 82 | 570 | 40 | 0.40 | -21.1 | -4.0 | 60.9 | 56.9 |
| Tractors/Loaders/Backhoes | 3 | 84 | 570 | 40 | 1.20 | -21.1 | 0.8 | 62.9 | 63.7 |
| | | | | | | | | Log Sum | 66.2 |
| **Building Construction** | | | | | | | | | |
| Cranes | 1 | 81 | 570 | 16 | 0.16 | -21.1 | -8.0 | 59.9 | 51.9 |
| Forklifts [2] | 3 | 48 | 570 | 40 | 1.20 | -21.1 | 0.8 | 26.9 | 27.7 |
| Generator Set | 1 | 81 | 570 | 50 | 0.50 | -21.1 | -3.0 | 59.9 | 56.9 |
| Welders | 1 | 74 | 570 | 40 | 0.40 | -21.1 | -4.0 | 52.9 | 48.9 |
| Tractors/Loaders/Backhoes | 3 | 84 | 570 | 40 | 1.20 | -21.1 | 0.8 | 62.9 | 63.7 |
| | | | | | | | | Log Sum | 64.8 |
| **Paving** | | | | | | | | | |
| Cement and Mortar Mixers | 2 | 79 | 570 | 40 | 0.8 | -21.1 | -1.0 | 57.9 | 56.9 |
| Pavers | 1 | 77 | 570 | 50 | 0.50 | -21.1 | -3.0 | 55.9 | 52.9 |
| Paving Equipment | 2 | 77 | 570 | 50 | 1.00 | -21.1 | 0.0 | 55.9 | 55.9 |
| Rollers | 2 | 80 | 570 | 20 | 0.40 | -21.1 | -4.0 | 58.9 | 54.9 |
| Tractors/Loaders/Backhoes | 1 | 84 | 570 | 40 | 0.40 | -21.1 | -4.0 | 62.9 | 58.9 |
| | | | | | | | | Log Sum | 63.3 |
| **Architectural Coating** | | | | | | | | | |
| Air Compressors | 1 | 78 | 570 | 40 | 0.40 | -21.1 | -4.0 | 56.9 | 52.9 |
| | | | | | | | | Log Sum | 52.9 |

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)

(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 (property line).

Receptor - Residential to Northeast (Mountain View Apartments, 488 E 15th Street, Beaumont)

| 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 |
|---|---|---|---|---|---|---|---|---|---|
| **Site Preparation** | | | | | | | | | |
| Tractors/Loaders/Backhoes | 1 | 84 | 512 | 40 | 0.40 | -20.2 | -4.0 | 63.8 | 59.8 |
| | | | | | | | | Log Sum | 59.8 |
| **Grading** | | | | | | | | | |
| Excavator | 1 | 85 | 512 | 40 | 0.4 | -20.2 | -4.0 | 64.8 | 60.8 |
| Grader | 1 | 85 | 512 | 40 | 0.40 | -20.2 | -4.0 | 64.8 | 60.8 |
| Rubber Tired Dozers | 1 | 85 | 512 | 40 | 0.40 | -20.2 | -4.0 | 64.8 | 60.8 |
| Tractors/Loaders/Backhoes | 3 | 84 | 512 | 40 | 1.20 | -20.2 | 0.8 | 63.8 | 64.6 |
| | | | | | | | | Log Sum | 68.1 |
| **Building Construction** | | | | | | | | | |
| Cranes | 1 | 83 | 512 | 16 | 0.16 | -20.2 | -8.0 | 62.8 | 54.8 |
| Forklifts [2] | 3 | 48 | 512 | 40 | 1.20 | -20.2 | 0.8 | 27.8 | 28.6 |
| Generator Set | 1 | 81 | 512 | 50 | 0.50 | -20.2 | -3.0 | 60.8 | 57.8 |
| Welders | 1 | 74 | 512 | 40 | 0.40 | -20.2 | -4.0 | 53.8 | 49.8 |
| Tractors/Loaders/Backhoes | 3 | 84 | 512 | 40 | 1.20 | -20.2 | 0.8 | 63.8 | 64.6 |
| | | | | | | | | Log Sum | 65.9 |
| **Paving** | | | | | | | | | |
| Cement and Mortar Mixers | 2 | 79 | 512 | 40 | 0.8 | -20.2 | -1.0 | 58.8 | 57.8 |
| Pavers | 1 | 77 | 512 | 50 | 0.50 | -20.2 | -3.0 | 56.8 | 53.8 |
| Paving Equipment | 2 | 77 | 512 | 50 | 1.00 | -20.2 | 0.0 | 56.8 | 56.8 |
| Rollers | 2 | 80 | 512 | 20 | 0.40 | -20.2 | -4.0 | 59.8 | 55.8 |
| Tractors/Loaders/Backhoes | 1 | 84 | 512 | 40 | 0.40 | -20.2 | -4.0 | 63.8 | 59.8 |
| | | | | | | | | Log Sum | 64.3 |
| **Architectural Coating** | | | | | | | | | |
| Air Compressors | 1 | 78 | 512 | 40 | 0.40 | -20.2 | -4.0 | 57.8 | 53.8 |
| | | | | | | | | Log Sum | 53.8 |

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)

(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 (property line).

Receptor - Residential to South (315 Oak Valley Parkway, Beaumont)

| 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 |
|---|---|---|---|---|---|---|---|---|---|
| **Site Preparation** | | | | | | | | | |
| Tractors/Loaders/Backhoes | 1 | 84 | 392 | 40 | 0.40 | -17.9 | -4.0 | 66.1 | 62.1 |
| | | | | | | | | Log Sum | 62.1 |
| **Grading** | | | | | | | | | |
| Excavator | 1 | 85 | 392 | 40 | 0.4 | -17.9 | -4.0 | 67.1 | 63.1 |
| Grader | 1 | 85 | 392 | 40 | 0.40 | -17.9 | -4.0 | 67.1 | 63.1 |
| Rubber Tired Dozers | 1 | 85 | 392 | 40 | 0.40 | -17.9 | -4.0 | 67.1 | 63.1 |
| Tractors/Loaders/Backhoes | 3 | 84 | 392 | 40 | 1.20 | -17.9 | 0.8 | 66.1 | 66.9 |
| | | | | | | | | Log Sum | 70.4 |
| **Building Construction** | | | | | | | | | |
| Cranes | 1 | 83 | 392 | 16 | 0.16 | -17.9 | -8.0 | 65.1 | 57.2 |
| Forklifts [2] | 3 | 48 | 392 | 40 | 1.20 | -17.9 | 0.8 | 30.1 | 30.9 |
| Generator Set | 1 | 81 | 392 | 50 | 0.50 | -17.9 | -3.0 | 63.1 | 60.1 |
| Welders | 1 | 74 | 392 | 40 | 0.40 | -17.9 | -4.0 | 56.1 | 52.1 |
| Tractors/Loaders/Backhoes | 3 | 84 | 392 | 40 | 1.20 | -17.9 | 0.8 | 66.1 | 66.9 |
| | | | | | | | | Log Sum | 68.2 |
| **Paving** | | | | | | | | | |
| Cement and Mortar Mixers | 2 | 79 | 392 | 40 | 0.8 | -17.9 | -1.0 | 61.1 | 60.1 |
| Pavers | 1 | 77 | 392 | 50 | 0.50 | -17.9 | -3.0 | 59.1 | 56.1 |
| Paving Equipment | 2 | 77 | 392 | 50 | 1.00 | -17.9 | 0.0 | 59.1 | 59.1 |
| Rollers | 2 | 80 | 392 | 20 | 0.40 | -17.9 | -4.0 | 62.1 | 58.1 |
| Tractors/Loaders/Backhoes | 1 | 84 | 392 | 40 | 0.40 | -17.9 | -4.0 | 66.1 | 62.1 |
| | | | | | | | | Log Sum | 66.6 |
| **Architectural Coating** | | | | | | | | | |
| Air Compressors | 1 | 78 | 392 | 40 | 0.40 | -17.9 | -4.0 | 60.1 | 56.1 |
| | | | | | | | | Log Sum | 56.1 |

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)

(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 (property line).

# APPENDIX E

# FHWA TRAFFIC NOISE MODEL WORKSHEETS

## Existing Traffic Noise

| | |
|---|---|
| 1 | :Id |
| GolfClub Drive | :Road |
| North of Oak Valley Parkway | :Segment |

| Vehicle Distribution (Light Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.56 | 13.96 | 10.49 | 97.40 |
| Medium Trucks | 48.91 | 2.17 | 48.91 | 1.84 |
| Heavy Trucks | 47.30 | 5.41 | 47.30 | 0.74 |

| | |
|---|---|
| ADT | 3900 |
| Speed | 25 |
| Distance | 40 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 239.19 | 2.92 | 1.14 | 176.76 | 0.52 | 0.52 | 44.27 | 3.90 | 1.52 |
| Speed in MPH | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 59.44 | 71.09 | 77.24 | 59.44 | 71.09 | 77.24 | 59.44 | 71.09 | 77.24 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 19.50 | 0.38 | -3.73 | 18.19 | -7.13 | -7.12 | 12.18 | 1.63 | -2.48 |
| Distance | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 54.84 | 47.36 | 49.41 | 53.53 | 39.85 | 46.02 | 47.52 | 48.61 | 50.66 |
| | DAY LEQ | 56.50 | | EVENING LEQ | 54.39 | | NIGHT LEQ | 53.90 | |

| | | | |
|---|---|---|---|
| F | CNEL | 60.98 | |
| | DAY LEQ | 56.50 | |

| | |
|---|---|
| Day hour | 89.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 0.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

## Existing Plus Project Traffic Noise

| | |
|---|---|
| 1 | :Id |
| GolfClub Drive | :Road |
| North of Oak Valley Parkway | :Segment |

| Vehicle Distribution (Light Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.56 | 13.96 | 10.49 | 97.40 |
| Medium Trucks | 48.91 | 2.17 | 48.91 | 1.84 |
| Heavy Trucks | 47.30 | 5.41 | 47.30 | 0.74 |

| | |
|---|---|
| ADT | 4100 |
| Speed | 25 |
| Distance | 40 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 251.45 | 3.07 | 1.20 | 185.83 | 0.55 | 0.55 | 46.55 | 4.10 | 1.59 |
| Speed in MPH | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 59.44 | 71.09 | 77.24 | 59.44 | 71.09 | 77.24 | 59.44 | 71.09 | 77.24 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 19.72 | 0.59 | -3.51 | 18.41 | -6.92 | -6.90 | 12.39 | 1.84 | -2.26 |
| Distance | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 55.06 | 47.58 | 49.63 | 53.74 | 40.07 | 46.24 | 47.73 | 48.83 | 50.88 |
| | DAY LEQ | 56.72 | | EVENING LEQ | 54.61 | | NIGHT LEQ | 54.12 | |

| | |
|---|---|
| CNEL | 61.20 |
| DAY LEQ | 56.72 |

| | |
|---|---|
| Day hour | 89.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 0.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

## Existing Traffic Noise

| | |
|---|---|
| 2 | :Id |
| Oak View Drive | :Road |
| North of Oak Valley Parkway | :Segment |

| Vehicle Distribution (Light Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.56 | 13.96 | 10.49 | 97.40 |
| Medium Trucks | 48.91 | 2.17 | 48.91 | 1.84 |
| Heavy Trucks | 47.30 | 5.41 | 47.30 | 0.74 |

| | |
|---|---|
| ADT | 9200 |
| Speed | 45 |
| Distance | 39 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 564.23 | 6.90 | 2.68 | 416.98 | 1.22 | 1.23 | 104.44 | 9.20 | 3.58 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 69.34 | 77.62 | 82.14 | 69.34 | 77.62 | 82.14 | 69.34 | 77.62 | 82.14 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 20.68 | 1.55 | -2.55 | 19.36 | -5.96 | -5.95 | 13.35 | 2.80 | -1.30 |
| Distance | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 66.03 | 55.18 | 55.60 | 64.72 | 47.67 | 52.20 | 58.70 | 56.43 | 56.85 |
| | DAY LEQ | 66.72 | | EVENING LEQ | 65.03 | | NIGHT LEQ | 62.22 | |

| | |
|---|---|
| **CNEL** | **69.94** |
| DAY LEQ | 66.72 |

| | |
|---|---|
| Day hour | 90.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 1.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

## Existing Plus Project Traffic Noise

| | |
|---|---|
| 2 | :Id |
| Oak View Drive | :Road |
| North of Oak Valley Parkway | :Segment |

| Vehicle Distribution (Light Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.56 | 13.96 | 10.49 | 97.40 |
| Medium Trucks | 48.91 | 2.17 | 48.91 | 1.84 |
| Heavy Trucks | 47.30 | 5.41 | 47.30 | 0.74 |

| | |
|---|---|
| ADT | 9600 |
| Speed | 45 |
| Distance | 39 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 588.76 | 7.20 | 2.80 | 435.11 | 1.28 | 1.28 | 108.98 | 9.60 | 3.73 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 69.34 | 77.62 | 82.14 | 69.34 | 77.62 | 82.14 | 69.34 | 77.62 | 82.14 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 20.86 | 1.74 | -2.37 | 19.55 | -5.77 | -5.76 | 13.54 | 2.98 | -1.12 |
| Distance | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 66.22 | 55.37 | 55.78 | 64.90 | 47.86 | 52.39 | 58.89 | 56.62 | 57.03 |
| | DAY LEQ | 66.91 | | EVENING LEQ | 65.22 | | NIGHT LEQ | 62.40 | |

| | |
|---|---|
| CNEL | 70.12 |
| DAY LEQ | 66.91 |

| | |
|---|---|
| Day hour | 90.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 1.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

## Existing Traffic Noise

| | |
|---|---|
| 3 | :Id |
| Beaumont Avenue | :Road |
| North of Brookside Avenue | :Segment |

| Vehicle Distribution (Heavy Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.54 | 14.02 | 10.43 | 92.00 |
| Medium Trucks | 48.00 | 2.00 | 50.00 | 3.00 |
| Heavy Trucks | 48.00 | 2.00 | 50.00 | 5.00 |

| | |
|---|---|
| ADT | 12300 |
| Speed | 50 |
| Distance | 44 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 712.34 | 14.76 | 24.60 | 528.83 | 2.46 | 4.10 | 131.14 | 20.50 | 34.17 |
| Speed in MPH | 50.00 | 50.00 | 50.00 | 50.00 | 50.00 | 50.00 | 50.00 | 50.00 | 50.00 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 71.12 | 78.79 | 83.02 | 71.12 | 78.79 | 83.02 | 71.12 | 78.79 | 83.02 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 21.23 | 4.40 | 6.61 | 19.94 | -3.39 | -1.17 | 13.88 | 5.82 | 8.04 |
| Distance | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 67.84 | 58.67 | 65.12 | 66.54 | 50.89 | 57.34 | 60.49 | 60.10 | 66.55 |
| | DAY LEQ | 70.03 | | EVENING LEQ | 67.14 | | NIGHT LEQ | 68.23 | |

| | |
|---|---|
| CNEL | 75.06 |
| DAY LEQ | 70.03 |

| | |
|---|---|
| Day hour | 91.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 2.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

## Existing Plus Project Traffic Noise

| | |
|---|---|
| 3 | :Id |
| Beaumont Avenue | :Road |
| North of Brookside Avenue | :Segment |

| Vehicle Distribution (Heavy Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.54 | 14.02 | 10.43 | 92.00 |
| Medium Trucks | 48.00 | 2.00 | 50.00 | 3.00 |
| Heavy Trucks | 48.00 | 2.00 | 50.00 | 5.00 |

| | |
|---|---|
| ADT | 12500 |
| Speed | 50 |
| Distance | 44 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 723.93 | 15.00 | 25.00 | 537.43 | 2.50 | 4.17 | 133.27 | 20.83 | 34.72 |
| Speed in MPH | 50.00 | 50.00 | 50.00 | 50.00 | 50.00 | 50.00 | 50.00 | 50.00 | 50.00 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 71.12 | 78.79 | 83.02 | 71.12 | 78.79 | 83.02 | 71.12 | 78.79 | 83.02 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 21.30 | 4.47 | 6.68 | 20.01 | -3.32 | -1.10 | 13.95 | 5.89 | 8.11 |
| Distance | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 67.91 | 58.74 | 65.19 | 66.61 | 50.96 | 57.41 | 60.56 | 60.17 | 66.62 |
| | DAY LEQ | 70.10 | | EVENING LEQ | 67.21 | | NIGHT LEQ | 68.30 | |

| | |
|---|---|
| CNEL | 75.13 |
| DAY LEQ | 70.10 |

| | |
|---|---|
| Day hour | 91.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 2.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

## Existing Traffic Noise

| | |
|---|---|
| 4 | :Id |
| Beaumont Avenue | :Road |
| Brookside Avenue to Cougar Way | :Segment |

| Vehicle Distribution (Light Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.56 | 13.96 | 10.49 | 97.40 |
| Medium Trucks | 48.91 | 2.17 | 48.91 | 1.84 |
| Heavy Trucks | 47.30 | 5.41 | 47.30 | 0.74 |

| | |
|---|---|
| ADT | 12100 |
| Speed | 40 |
| Distance | 39 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 742.09 | 9.07 | 3.53 | 548.41 | 1.61 | 1.61 | 137.37 | 12.10 | 4.71 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 67.36 | 76.31 | 81.16 | 67.36 | 76.31 | 81.16 | 67.36 | 76.31 | 81.16 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 22.38 | 3.25 | -0.85 | 21.06 | -4.26 | -4.25 | 15.05 | 4.50 | 0.40 |
| Distance | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 65.75 | 55.57 | 56.32 | 64.43 | 48.06 | 52.92 | 58.42 | 56.82 | 57.57 |
| | DAY LEQ | 66.58 | | EVENING LEQ | 64.82 | | NIGHT LEQ | 62.42 | |

| | |
|---|---|
| CNEL | 70.01 |
| DAY LEQ | 66.58 |

| | |
|---|---|
| Day hour | 92.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 3.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

## Existing Plus Project Traffic Noise

| | |
|---|---|
| 4 | :Id |
| Beaumont Avenue | :Road |
| Brookside Avenue to Cougar Way | :Segment |

| Vehicle Distribution (Light Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.56 | 13.96 | 10.49 | 97.40 |
| Medium Trucks | 48.91 | 2.17 | 48.91 | 1.84 |
| Heavy Trucks | 47.30 | 5.41 | 47.30 | 0.74 |

| | |
|---|---|
| ADT | 12700 |
| Speed | 40 |
| Distance | 39 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 778.89 | 9.52 | 3.70 | 575.61 | 1.69 | 1.69 | 144.18 | 12.70 | 4.94 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 67.36 | 76.31 | 81.16 | 67.36 | 76.31 | 81.16 | 67.36 | 76.31 | 81.16 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 22.59 | 3.46 | -0.64 | 21.27 | -4.05 | -4.04 | 15.26 | 4.71 | 0.61 |
| Distance | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 65.96 | 55.78 | 56.53 | 64.64 | 48.27 | 53.13 | 58.63 | 57.03 | 57.78 |
| | DAY LEQ | 66.79 | | EVENING LEQ | 65.03 | | NIGHT LEQ | 62.63 | |

| | |
|---|---|
| CNEL | 70.22 |
| DAY LEQ | 66.79 |

| | |
|---|---|
| Day hour | 92.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 3.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

## Existing Traffic Noise

| | |
|---|---|
| 5 | :Id |
| Beaumont Avenue | :Road |
| Cougar Way to Project Driveway | :Segment |

| Vehicle Distribution (Light Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.56 | 13.96 | 10.49 | 97.40 |
| Medium Trucks | 48.91 | 2.17 | 48.91 | 1.84 |
| Heavy Trucks | 47.30 | 5.41 | 47.30 | 0.74 |

| | |
|---|---|
| ADT | 15100 |
| Speed | 40 |
| Distance | 39 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 926.08 | 11.32 | 4.40 | 684.38 | 2.01 | 2.02 | 171.42 | 15.10 | 5.87 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 67.36 | 76.31 | 81.16 | 67.36 | 76.31 | 81.16 | 67.36 | 76.31 | 81.16 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 23.34 | 4.21 | 0.11 | 22.03 | -3.30 | -3.28 | 16.01 | 5.46 | 1.36 |
| Distance | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 66.71 | 56.54 | 57.28 | 65.40 | 49.03 | 53.88 | 59.38 | 57.78 | 58.53 |
| | DAY LEQ | 67.54 | | EVENING LEQ | 65.78 | | NIGHT LEQ | 63.39 | |

| | |
|---|---|
| CNEL | 70.97 |
| DAY LEQ | 67.54 |

| | |
|---|---|
| Day hour | 93.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 4.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

## Existing Plus Project Traffic Noise

| | |
|---|---|
| 5 | :Id |
| Beaumont Avenue | :Road |
| Cougar Way to Project Driveway | :Segment |

| Vehicle Distribution (Light Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.56 | 13.96 | 10.49 | 97.40 |
| Medium Trucks | 48.91 | 2.17 | 48.91 | 1.84 |
| Heavy Trucks | 47.30 | 5.41 | 47.30 | 0.74 |

| | |
|---|---|
| ADT | 15900 |
| Speed | 40 |
| Distance | 39 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 975.14 | 11.92 | 4.64 | 720.64 | 2.12 | 2.12 | 180.50 | 15.90 | 6.18 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 67.36 | 76.31 | 81.16 | 67.36 | 76.31 | 81.16 | 67.36 | 76.31 | 81.16 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 23.56 | 4.44 | 0.34 | 22.25 | -3.07 | -3.06 | 16.24 | 5.69 | 1.59 |
| Distance | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 66.93 | 56.76 | 57.51 | 65.62 | 49.25 | 54.11 | 59.61 | 58.01 | 58.75 |
| | DAY LEQ | 67.76 | | EVENING LEQ | 66.01 | | NIGHT LEQ | 63.61 | |

| | |
|---|---|
| CNEL | 71.20 |
| DAY LEQ | 67.76 |

| | |
|---|---|
| Day hour | 93.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 4.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

## Existing Traffic Noise

| | | |
|---|---|---|
| 6 | :Id | |
| Beaumont Avenue | :Road | |
| Project Driveway to Oak Valley Parkway | :Segment | |

| Vehicle Distribution (Heavy Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.54 | 14.02 | 10.43 | 92.00 |
| Medium Trucks | 48.00 | 2.00 | 50.00 | 3.00 |
| Heavy Trucks | 48.00 | 2.00 | 50.00 | 5.00 |

| | |
|---|---|
| ADT | 14600 |
| Speed | 40 |
| Distance | 55 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 845.54 | 17.52 | 29.20 | 627.72 | 2.92 | 4.87 | 155.66 | 24.33 | 40.56 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 67.36 | 76.31 | 81.16 | 67.36 | 76.31 | 81.16 | 67.36 | 76.31 | 81.16 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 22.94 | 6.11 | 8.33 | 21.65 | -1.67 | 0.55 | 15.60 | 7.54 | 9.75 |
| Distance | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 64.82 | 56.94 | 64.00 | 63.53 | 49.16 | 56.22 | 57.47 | 58.36 | 65.43 |
| | DAY LEQ | 67.81 | | EVENING LEQ | 64.40 | | NIGHT LEQ | 66.75 | |

| | |
|---|---|
| CNEL | 73.40 |
| DAY LEQ | 67.81 |

| | |
|---|---|
| Day hour | 94.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 5.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

## Existing Plus Project Traffic Noise

| | | |
|---|---|---|
| 6 | :Id | |
| Beaumont Avenue | :Road | |
| Project Driveway to Oak Valley Parkway | :Segment | |

| Vehicle Distribution (Heavy Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.54 | 14.02 | 10.43 | 92.00 |
| Medium Trucks | 48.00 | 2.00 | 50.00 | 3.00 |
| Heavy Trucks | 48.00 | 2.00 | 50.00 | 5.00 |

| | |
|---|---|
| ADT | 16200 |
| Speed | 40 |
| Distance | 55 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 938.21 | 19.44 | 32.40 | 696.51 | 3.24 | 5.40 | 172.72 | 27.00 | 45.00 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 67.36 | 76.31 | 81.16 | 67.36 | 76.31 | 81.16 | 67.36 | 76.31 | 81.16 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 23.40 | 6.56 | 8.78 | 22.10 | -1.22 | 1.00 | 16.05 | 7.99 | 10.21 |
| Distance | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 65.27 | 57.39 | 64.45 | 63.98 | 49.61 | 56.67 | 57.92 | 58.82 | 65.88 |
| | DAY LEQ | 68.26 | | EVENING LEQ | 64.85 | | NIGHT LEQ | 67.21 | |

| | |
|---|---|
| CNEL | 73.85 |
| DAY LEQ | 68.26 |

| | |
|---|---|
| Day hour | 94.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 5.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

## Existing Traffic Noise

| | |
|---|---|
| 7 | :Id |
| Beaumont Avenue | :Road |
| Oak Valley Parkway to 12th Street | :Segment |

| Vehicle Distribution (Heavy Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.54 | 14.02 | 10.43 | 92.00 |
| Medium Trucks | 48.00 | 2.00 | 50.00 | 3.00 |
| Heavy Trucks | 48.00 | 2.00 | 50.00 | 5.00 |

| | |
|---|---|
| ADT | 12700 |
| Speed | 40 |
| Distance | 50 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 735.51 | 15.24 | 25.40 | 546.03 | 2.54 | 4.23 | 135.40 | 21.17 | 35.28 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 67.36 | 76.31 | 81.16 | 67.36 | 76.31 | 81.16 | 67.36 | 76.31 | 81.16 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 22.34 | 5.50 | 7.72 | 21.05 | -2.28 | -0.06 | 14.99 | 6.93 | 9.15 |
| Distance | -0.07 | -0.07 | -0.07 | -0.07 | -0.07 | -0.07 | -0.07 | -0.07 | -0.07 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 64.63 | 56.75 | 63.81 | 63.34 | 48.96 | 56.03 | 57.28 | 58.17 | 65.24 |
| | DAY LEQ | 67.62 | | EVENING LEQ | 64.21 | | NIGHT LEQ | 66.56 | |

| | |
|---|---|
| CNEL | 73.21 |
| DAY LEQ | 67.62 |

| | |
|---|---|
| Day hour | 95.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 6.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

## Existing Plus Project Traffic Noise

| | |
|---|---|
| 7 | :Id |
| Beaumont Avenue | :Road |
| Oak Valley Parkway to 12th Street | :Segment |

| Vehicle Distribution (Heavy Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.54 | 14.02 | 10.43 | 92.00 |
| Medium Trucks | 48.00 | 2.00 | 50.00 | 3.00 |
| Heavy Trucks | 48.00 | 2.00 | 50.00 | 5.00 |

| | |
|---|---|
| ADT | 13900 |
| Speed | 40 |
| Distance | 50 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 805.00 | 16.68 | 27.80 | 597.63 | 2.78 | 4.63 | 148.20 | 23.17 | 38.61 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 67.36 | 76.31 | 81.16 | 67.36 | 76.31 | 81.16 | 67.36 | 76.31 | 81.16 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 22.73 | 5.90 | 8.11 | 21.44 | -1.89 | 0.33 | 15.38 | 7.32 | 9.54 |
| Distance | -0.07 | -0.07 | -0.07 | -0.07 | -0.07 | -0.07 | -0.07 | -0.07 | -0.07 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 65.02 | 57.14 | 64.20 | 63.73 | 49.36 | 56.42 | 57.67 | 58.56 | 65.63 |
| | DAY LEQ | 68.01 | | EVENING LEQ | 64.60 | | NIGHT LEQ | 66.95 | |

| | |
|---|---|
| CNEL | 73.60 |
| DAY LEQ | 68.01 |

| | |
|---|---|
| Day hour | 95.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 6.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

## Existing Traffic Noise

| | |
|---|---|
| 8 | :Id |
| Beaumont Avenue | :Road |
| 12th Street to 10th Street | :Segment |

| Vehicle Distribution (Heavy Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.54 | 14.02 | 10.43 | 92.00 |
| Medium Trucks | 48.00 | 2.00 | 50.00 | 3.00 |
| Heavy Trucks | 48.00 | 2.00 | 50.00 | 5.00 |

| | |
|---|---|
| ADT | 11600 |
| Speed | 40 |
| Distance | 50 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 671.80 | 13.92 | 23.20 | 498.74 | 2.32 | 3.87 | 123.68 | 19.33 | 32.22 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 67.36 | 76.31 | 81.16 | 67.36 | 76.31 | 81.16 | 67.36 | 76.31 | 81.16 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 21.95 | 5.11 | 7.33 | 20.65 | -2.67 | -0.45 | 14.60 | 6.54 | 8.76 |
| Distance | -0.07 | -0.07 | -0.07 | -0.07 | -0.07 | -0.07 | -0.07 | -0.07 | -0.07 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 64.24 | 56.35 | 63.42 | 62.94 | 48.57 | 55.64 | 56.89 | 57.78 | 64.84 |
| | DAY LEQ | 67.23 | | EVENING LEQ | 63.81 | | NIGHT LEQ | 66.17 | |

| | |
|---|---|
| CNEL | 72.81 |
| DAY LEQ | 67.23 |

| | |
|---|---|
| Day hour | 96.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 7.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

## Existing Plus Project Traffic Noise

| | |
|---|---|
| 8 | :Id |
| Beaumont Avenue | :Road |
| 12th Street to 10th Street | :Segment |

| Vehicle Distribution (Heavy Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.54 | 14.02 | 10.43 | 92.00 |
| Medium Trucks | 48.00 | 2.00 | 50.00 | 3.00 |
| Heavy Trucks | 48.00 | 2.00 | 50.00 | 5.00 |

| | |
|---|---|
| ADT | 12400 |
| Speed | 40 |
| Distance | 50 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 718.13 | 14.88 | 24.80 | 533.13 | 2.48 | 4.13 | 132.21 | 20.67 | 34.44 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 67.36 | 76.31 | 81.16 | 67.36 | 76.31 | 81.16 | 67.36 | 76.31 | 81.16 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 22.24 | 5.40 | 7.62 | 20.94 | -2.38 | -0.16 | 14.89 | 6.83 | 9.04 |
| Distance | -0.07 | -0.07 | -0.07 | -0.07 | -0.07 | -0.07 | -0.07 | -0.07 | -0.07 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 64.53 | 56.64 | 63.71 | 63.23 | 48.86 | 55.93 | 57.18 | 58.07 | 65.13 |
| | DAY LEQ | 67.52 | | EVENING LEQ | 64.10 | | NIGHT LEQ | 66.46 | |

| | |
|---|---|
| CNEL | 73.10 |
| DAY LEQ | 67.52 |

| | |
|---|---|
| Day hour | 96.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 7.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

## Existing Traffic Noise

| | |
|---|---|
| 9 | :Id |
| Beaumont Avenue | :Road |
| South of 10th Street | :Segment |

| Vehicle Distribution (Heavy Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.54 | 14.02 | 10.43 | 92.00 |
| Medium Trucks | 48.00 | 2.00 | 50.00 | 3.00 |
| Heavy Trucks | 48.00 | 2.00 | 50.00 | 5.00 |

| | |
|---|---|
| ADT | 11900 |
| Speed | 30 |
| Distance | 50 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 689.18 | 14.28 | 23.80 | 511.64 | 2.38 | 3.97 | 126.88 | 19.83 | 33.06 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 62.51 | 73.11 | 78.76 | 62.51 | 73.11 | 78.76 | 62.51 | 73.11 | 78.76 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 23.31 | 6.47 | 8.69 | 22.01 | -1.31 | 0.91 | 15.96 | 7.90 | 10.12 |
| Distance | -0.07 | -0.07 | -0.07 | -0.07 | -0.07 | -0.07 | -0.07 | -0.07 | -0.07 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 60.75 | 54.51 | 62.38 | 59.45 | 46.73 | 54.60 | 53.40 | 55.94 | 63.81 |
| | DAY LEQ | 65.05 | | EVENING LEQ | 60.85 | | NIGHT LEQ | 64.79 | |

| | |
|---|---|
| CNEL | 71.27 |
| DAY LEQ | 65.05 |

| | |
|---|---|
| Day hour | 97.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 8.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

## Existing Plus Project Traffic Noise

| | |
|---|---|
| 9 | :Id |
| Beaumont Avenue | :Road |
| South of 10th Street | :Segment |

| Vehicle Distribution (Heavy Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.54 | 14.02 | 10.43 | 92.00 |
| Medium Trucks | 48.00 | 2.00 | 50.00 | 3.00 |
| Heavy Trucks | 48.00 | 2.00 | 50.00 | 5.00 |

| | |
|---|---|
| ADT | 12300 |
| Speed | 30 |
| Distance | 50 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 712.34 | 14.76 | 24.60 | 528.83 | 2.46 | 4.10 | 131.14 | 20.50 | 34.17 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 62.51 | 73.11 | 78.76 | 62.51 | 73.11 | 78.76 | 62.51 | 73.11 | 78.76 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 23.45 | 6.61 | 8.83 | 22.16 | -1.17 | 1.05 | 16.10 | 8.04 | 10.26 |
| Distance | -0.07 | -0.07 | -0.07 | -0.07 | -0.07 | -0.07 | -0.07 | -0.07 | -0.07 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 60.89 | 54.66 | 62.52 | 59.60 | 46.88 | 54.74 | 53.54 | 56.08 | 63.95 |
| | DAY LEQ | 65.20 | | EVENING LEQ | 61.00 | | NIGHT LEQ | 64.93 | |

| | | | |
|---|---|---|---|
| F | CNEL | 71.41 | |
| | DAY LEQ | 65.20 | |

| | |
|---|---|
| Day hour | 97.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 8.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

## Existing Traffic Noise

| | |
|---|---|
| 10 | :Id |
| Palm Avenue | :Road |
| Cougar Way to Oak Valley Parkway | :Segment |

| Vehicle Distribution (Light Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.56 | 13.96 | 10.49 | 97.40 |
| Medium Trucks | 48.91 | 2.17 | 48.91 | 1.84 |
| Heavy Trucks | 47.30 | 5.41 | 47.30 | 0.74 |

| | |
|---|---|
| ADT | 3300 |
| Speed | 40 |
| Distance | 39 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 202.39 | 2.47 | 0.96 | 149.57 | 0.44 | 0.44 | 37.46 | 3.30 | 1.28 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 67.36 | 76.31 | 81.16 | 67.36 | 76.31 | 81.16 | 67.36 | 76.31 | 81.16 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 16.74 | -2.39 | -6.49 | 15.42 | -9.90 | -9.89 | 9.41 | -1.14 | -5.24 |
| Distance | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 60.10 | 49.93 | 50.68 | 58.79 | 42.42 | 47.28 | 52.78 | 51.18 | 51.93 |
| | DAY LEQ | 60.93 | | EVENING LEQ | 59.18 | | NIGHT LEQ | 56.78 | |

| | |
|---|---|
| CNEL | 64.37 |
| DAY LEQ | 60.93 |

| | |
|---|---|
| Day hour | 98.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 9.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

## Existing Plus Project Traffic Noise

| | |
|---|---|
| 10 | :Id |
| Palm Avenue | :Road |
| Cougar Way to Oak Valley Parkway | :Segment |

| Vehicle Distribution (Light Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.56 | 13.96 | 10.49 | 97.40 |
| Medium Trucks | 48.91 | 2.17 | 48.91 | 1.84 |
| Heavy Trucks | 47.30 | 5.41 | 47.30 | 0.74 |

| | |
|---|---|
| ADT | 3500 |
| Speed | 40 |
| Distance | 39 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 214.65 | 2.62 | 1.02 | 158.63 | 0.47 | 0.47 | 39.73 | 3.50 | 1.36 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 67.36 | 76.31 | 81.16 | 67.36 | 76.31 | 81.16 | 67.36 | 76.31 | 81.16 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 16.99 | -2.14 | -6.24 | 15.68 | -9.64 | -9.63 | 9.67 | -0.89 | -4.99 |
| Distance | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 60.36 | 50.19 | 50.93 | 59.05 | 42.68 | 47.54 | 53.03 | 51.44 | 52.18 |
| | DAY LEQ | 61.19 | | EVENING LEQ | 59.44 | | NIGHT LEQ | 57.04 | |

| | |
|---|---|
| CNEL | 64.62 |
| DAY LEQ | 61.19 |

| | |
|---|---|
| Day hour | 98.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 9.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

## Existing Traffic Noise

| | |
|---|---|
| 11 | :Id |
| Palm Avenue | :Road |
| Oak Valley Parkway to 12th Street | :Segment |

| Vehicle Distribution (Light Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.56 | 13.96 | 10.49 | 97.40 |
| Medium Trucks | 48.91 | 2.17 | 48.91 | 1.84 |
| Heavy Trucks | 47.30 | 5.41 | 47.30 | 0.74 |

| | |
|---|---|
| ADT | 2900 |
| Speed | 30 |
| Distance | 39 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 177.86 | 2.17 | 0.85 | 131.44 | 0.39 | 0.39 | 32.92 | 2.90 | 1.13 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 62.51 | 73.11 | 78.76 | 62.51 | 73.11 | 78.76 | 62.51 | 73.11 | 78.76 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 17.42 | -1.70 | -5.80 | 16.11 | -9.21 | -9.20 | 10.10 | -0.45 | -4.55 |
| Distance | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 55.94 | 47.42 | 48.97 | 54.63 | 39.91 | 45.57 | 48.62 | 48.67 | 50.22 |
| | DAY LEQ | 57.22 | | EVENING LEQ | 55.27 | | NIGHT LEQ | 54.00 | |

| | |
|---|---|
| CNEL | 61.27 |
| DAY LEQ | 57.22 |

| | |
|---|---|
| Day hour | 99.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 10.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

## Existing Plus Project Traffic Noise

| | |
|---|---|
| 11 | :Id |
| Palm Avenue | :Road |
| Oak Valley Parkway to 12th Street | :Segment |

| Vehicle Distribution (Light Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.56 | 13.96 | 10.49 | 97.40 |
| Medium Trucks | 48.91 | 2.17 | 48.91 | 1.84 |
| Heavy Trucks | 47.30 | 5.41 | 47.30 | 0.74 |

| | |
|---|---|
| ADT | 3300 |
| Speed | 30 |
| Distance | 39 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 202.39 | 2.47 | 0.96 | 149.57 | 0.44 | 0.44 | 37.46 | 3.30 | 1.28 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 62.51 | 73.11 | 78.76 | 62.51 | 73.11 | 78.76 | 62.51 | 73.11 | 78.76 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 17.98 | -1.14 | -5.24 | 16.67 | -8.65 | -8.64 | 10.66 | 0.11 | -3.99 |
| Distance | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 | 1.01 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 56.51 | 47.98 | 49.53 | 55.19 | 40.47 | 46.13 | 49.18 | 49.23 | 50.78 |
| | DAY LEQ | 57.78 | | EVENING LEQ | 55.83 | | NIGHT LEQ | 54.57 | |

| | |
|---|---|
| CNEL | 61.83 |
| DAY LEQ | 57.78 |

| | |
|---|---|
| Day hour | 99.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 10.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

## Existing Traffic Noise

| | |
|---|---|
| 12 | :Id |
| Brookside Avenue | :Road |
| West of Beaumont Avenue | :Segment |

| Vehicle Distribution (Light Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.56 | 13.96 | 10.49 | 97.40 |
| Medium Trucks | 48.91 | 2.17 | 48.91 | 1.84 |
| Heavy Trucks | 47.30 | 5.41 | 47.30 | 0.74 |

| | |
|---|---|
| ADT | 4400 |
| Speed | 40 |
| Distance | 44 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 269.85 | 3.30 | 1.28 | 199.42 | 0.59 | 0.59 | 49.95 | 4.40 | 1.71 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 67.36 | 76.31 | 81.16 | 67.36 | 76.31 | 81.16 | 67.36 | 76.31 | 81.16 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 17.98 | -1.14 | -5.24 | 16.67 | -8.65 | -8.64 | 10.66 | 0.11 | -3.99 |
| Distance | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 60.83 | 50.66 | 51.40 | 59.52 | 43.15 | 48.01 | 53.50 | 51.91 | 52.65 |
| | DAY LEQ | 61.66 | | EVENING LEQ | 59.91 | | NIGHT LEQ | 57.51 | |

| | |
|---|---|
| CNEL | 65.09 |
| DAY LEQ | 61.66 |

| | |
|---|---|
| Day hour | 0.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 0.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

## Existing Plus Project Traffic Noise

| | |
|---|---|
| 12 | :Id |
| Brookside Avenue | :Road |
| West of Beaumont Avenue | :Segment |

| Vehicle Distribution (Light Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.56 | 13.96 | 10.49 | 97.40 |
| Medium Trucks | 48.91 | 2.17 | 48.91 | 1.84 |
| Heavy Trucks | 47.30 | 5.41 | 47.30 | 0.74 |

| | |
|---|---|
| ADT | 4600 |
| Speed | 40 |
| Distance | 44 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 282.12 | 3.45 | 1.34 | 208.49 | 0.61 | 0.61 | 52.22 | 4.60 | 1.79 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 67.36 | 76.31 | 81.16 | 67.36 | 76.31 | 81.16 | 67.36 | 76.31 | 81.16 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 18.18 | -0.95 | -5.05 | 16.86 | -8.46 | -8.45 | 10.85 | 0.30 | -3.80 |
| Distance | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 61.02 | 50.85 | 51.59 | 59.71 | 43.34 | 48.20 | 53.70 | 52.10 | 52.84 |
| | DAY LEQ | 61.85 | | EVENING LEQ | 60.10 | | NIGHT LEQ | 57.70 | |

| | |
|---|---|
| CNEL | 65.29 |
| DAY LEQ | 61.85 |

| | |
|---|---|
| Day hour | 0.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 0.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

## Existing Traffic Noise

| | |
|---|---|
| 13 | :Id |
| Brookside Avenue | :Road |
| East of Beaumont Avenue | :Segment |

| Vehicle Distribution (Light Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.56 | 13.96 | 10.49 | 97.40 |
| Medium Trucks | 48.91 | 2.17 | 48.91 | 1.84 |
| Heavy Trucks | 47.30 | 5.41 | 47.30 | 0.74 |

| | |
|---|---|
| ADT | 6400 |
| Speed | 40 |
| Distance | 44 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 392.51 | 4.80 | 1.87 | 290.07 | 0.85 | 0.85 | 72.66 | 6.40 | 2.49 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 67.36 | 76.31 | 81.16 | 67.36 | 76.31 | 81.16 | 67.36 | 76.31 | 81.16 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 19.61 | 0.49 | -3.62 | 18.30 | -7.02 | -7.01 | 12.29 | 1.74 | -2.37 |
| Distance | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 62.46 | 52.28 | 53.03 | 61.14 | 44.77 | 49.63 | 55.13 | 53.53 | 54.28 |
| | DAY LEQ | 63.29 | | EVENING LEQ | 61.53 | | NIGHT LEQ | 59.13 | |

| | |
|---|---|
| CNEL | 66.72 |
| DAY LEQ | 63.29 |

| | |
|---|---|
| Day hour | 0.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 0.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

## Existing Plus Project Traffic Noise

| | |
|---|---|
| 13 | :Id |
| Brookside Avenue | :Road |
| East of Beaumont Avenue | :Segment |

| Vehicle Distribution (Light Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.56 | 13.96 | 10.49 | 97.40 |
| Medium Trucks | 48.91 | 2.17 | 48.91 | 1.84 |
| Heavy Trucks | 47.30 | 5.41 | 47.30 | 0.74 |

| | |
|---|---|
| ADT | 6600 |
| Speed | 40 |
| Distance | 44 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 404.77 | 4.95 | 1.93 | 299.13 | 0.88 | 0.88 | 74.93 | 6.60 | 2.57 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 67.36 | 76.31 | 81.16 | 67.36 | 76.31 | 81.16 | 67.36 | 76.31 | 81.16 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 19.75 | 0.62 | -3.48 | 18.43 | -6.89 | -6.88 | 12.42 | 1.87 | -2.23 |
| Distance | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 62.59 | 52.42 | 53.16 | 61.28 | 44.91 | 49.77 | 55.26 | 53.67 | 54.41 |
| | DAY LEQ | 63.42 | | EVENING LEQ | 61.67 | | NIGHT LEQ | 59.27 | |

| | |
|---|---|
| CNEL | 66.86 |
| DAY LEQ | 63.42 |

| | |
|---|---|
| Day hour | 0.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 0.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

## Existing Traffic Noise

| | |
|---|---|
| 14 | :Id |
| Cougar Way | :Road |
| Beaumont Avenue to Palm Avenue | :Segment |

| Vehicle Distribution (Light Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.56 | 13.96 | 10.49 | 97.40 |
| Medium Trucks | 48.91 | 2.17 | 48.91 | 1.84 |
| Heavy Trucks | 47.30 | 5.41 | 47.30 | 0.74 |

| | |
|---|---|
| ADT | 5900 |
| Speed | 35 |
| Distance | 44 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 361.84 | 4.42 | 1.72 | 267.41 | 0.79 | 0.79 | 66.98 | 5.90 | 2.29 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 65.11 | 74.83 | 80.05 | 65.11 | 74.83 | 80.05 | 65.11 | 74.83 | 80.05 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 19.84 | 0.71 | -3.39 | 18.53 | -6.80 | -6.78 | 12.51 | 1.96 | -2.14 |
| Distance | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 60.43 | 51.03 | 52.14 | 59.12 | 43.52 | 48.75 | 53.11 | 52.27 | 53.39 |
| | DAY LEQ | 61.45 | | EVENING LEQ | 59.61 | | NIGHT LEQ | 57.72 | |

| | |
|---|---|
| CNEL | 65.16 |
| DAY LEQ | 61.45 |

| | |
|---|---|
| Day hour | 0.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 0.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

## Existing Plus Project Traffic Noise

| | |
|---|---|
| 14 | :Id |
| Cougar Way | :Road |
| Beaumont Avenue to Palm Avenue | :Segment |

| Vehicle Distribution (Light Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.56 | 13.96 | 10.49 | 97.40 |
| Medium Trucks | 48.91 | 2.17 | 48.91 | 1.84 |
| Heavy Trucks | 47.30 | 5.41 | 47.30 | 0.74 |

| | |
|---|---|
| ADT | 6100 |
| Speed | 35 |
| Distance | 44 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 374.11 | 4.57 | 1.78 | 276.47 | 0.81 | 0.81 | 69.25 | 6.10 | 2.37 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 65.11 | 74.83 | 80.05 | 65.11 | 74.83 | 80.05 | 65.11 | 74.83 | 80.05 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 19.98 | 0.86 | -3.24 | 18.67 | -6.65 | -6.64 | 12.66 | 2.11 | -1.99 |
| Distance | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 60.58 | 51.17 | 52.29 | 59.26 | 43.66 | 48.89 | 53.25 | 52.42 | 53.54 |
| | DAY LEQ | 61.59 | | EVENING LEQ | 59.75 | | NIGHT LEQ | 57.87 | |

| | |
|---|---|
| CNEL | 65.30 |
| DAY LEQ | 61.59 |

| | |
|---|---|
| Day hour | 0.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 0.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

## Existing Traffic Noise

| | |
|---|---|
| 15 | :Id |
| Oak Valley Parkway | :Road |
| West of Golf Club Drive | :Segment |

| Vehicle Distribution (Heavy Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.54 | 14.02 | 10.43 | 92.00 |
| Medium Trucks | 48.00 | 2.00 | 50.00 | 3.00 |
| Heavy Trucks | 48.00 | 2.00 | 50.00 | 5.00 |

| | |
|---|---|
| ADT | 18100 |
| Speed | 45 |
| Distance | 55 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 1048.24 | 21.72 | 36.20 | 778.20 | 3.62 | 6.03 | 192.98 | 30.17 | 50.28 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 69.34 | 77.62 | 82.14 | 69.34 | 77.62 | 82.14 | 69.34 | 77.62 | 82.14 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 23.37 | 6.53 | 8.75 | 22.07 | -1.25 | 0.97 | 16.02 | 7.96 | 10.18 |
| Distance | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 67.23 | 58.67 | 65.41 | 65.93 | 50.89 | 57.63 | 59.88 | 60.10 | 66.83 |
| | DAY LEQ | 69.77 | | EVENING LEQ | 66.65 | | NIGHT LEQ | 68.34 | |

| | |
|---|---|
| CNEL | 75.07 |
| DAY LEQ | 69.77 |

| | |
|---|---|
| Day hour | 0.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 0.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

## Existing Plus Project Traffic Noise

| | |
|---|---|
| 15 | :Id |
| Oak Valley Parkway | :Road |
| West of Golf Club Drive | :Segment |

| Vehicle Distribution (Heavy Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.54 | 14.02 | 10.43 | 92.00 |
| Medium Trucks | 48.00 | 2.00 | 50.00 | 3.00 |
| Heavy Trucks | 48.00 | 2.00 | 50.00 | 5.00 |

| | |
|---|---|
| ADT | 18500 |
| Speed | 45 |
| Distance | 55 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 1071.41 | 22.20 | 37.00 | 795.40 | 3.70 | 6.17 | 197.24 | 30.83 | 51.39 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 69.34 | 77.62 | 82.14 | 69.34 | 77.62 | 82.14 | 69.34 | 77.62 | 82.14 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 23.46 | 6.63 | 8.84 | 22.17 | -1.16 | 1.06 | 16.11 | 8.05 | 10.27 |
| Distance | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 67.32 | 58.76 | 65.50 | 66.03 | 50.98 | 57.72 | 59.97 | 60.19 | 66.93 |
| | DAY LEQ | 69.87 | | EVENING LEQ | 66.74 | | NIGHT LEQ | 68.43 | |

| | |
|---|---|
| CNEL | 75.17 |
| DAY LEQ | 69.87 |

| | |
|---|---|
| Day hour | 0.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 0.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

## Existing Traffic Noise

| | |
|---|---|
| 16 | :Id |
| Oak Valley Parkway | :Road |
| Golf Club Drive to Oak View Drive | :Segment |

| Vehicle Distribution (Heavy Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.54 | 14.02 | 10.43 | 92.00 |
| Medium Trucks | 48.00 | 2.00 | 50.00 | 3.00 |
| Heavy Trucks | 48.00 | 2.00 | 50.00 | 5.00 |

| | |
|---|---|
| ADT | 17000 |
| Speed | 45 |
| Distance | 55 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 984.54 | 20.40 | 34.00 | 730.91 | 3.40 | 5.67 | 181.25 | 28.33 | 47.22 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 69.34 | 77.62 | 82.14 | 69.34 | 77.62 | 82.14 | 69.34 | 77.62 | 82.14 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 23.09 | 6.26 | 8.48 | 21.80 | -1.52 | 0.70 | 15.74 | 7.69 | 9.90 |
| Distance | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 66.96 | 58.40 | 65.13 | 65.66 | 50.62 | 57.35 | 59.61 | 59.82 | 66.56 |
| | DAY LEQ | 69.50 | | EVENING LEQ | 66.38 | | NIGHT LEQ | 68.06 | |

| | |
|---|---|
| CNEL | 74.80 |
| DAY LEQ | 69.50 |

| | |
|---|---|
| Day hour | 0.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 0.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

## Existing Plus Project Traffic Noise

| | |
|---|---|
| 16 | :Id |
| Oak Valley Parkway | :Road |
| Golf Club Drive to Oak View Drive | :Segment |

| Vehicle Distribution (Heavy Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.54 | 14.02 | 10.43 | 92.00 |
| Medium Trucks | 48.00 | 2.00 | 50.00 | 3.00 |
| Heavy Trucks | 48.00 | 2.00 | 50.00 | 5.00 |

| | |
|---|---|
| ADT | 17600 |
| Speed | 45 |
| Distance | 55 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 1019.29 | 21.12 | 35.20 | 756.71 | 3.52 | 5.87 | 187.65 | 29.33 | 48.89 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 69.34 | 77.62 | 82.14 | 69.34 | 77.62 | 82.14 | 69.34 | 77.62 | 82.14 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 23.24 | 6.41 | 8.63 | 21.95 | -1.37 | 0.85 | 15.90 | 7.84 | 10.05 |
| Distance | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 67.11 | 58.55 | 65.29 | 65.81 | 50.77 | 57.50 | 59.76 | 59.97 | 66.71 |
| | DAY LEQ | 69.65 | | EVENING LEQ | 66.53 | | NIGHT LEQ | 68.21 | |

| | |
|---|---|
| CNEL | 74.95 |
| DAY LEQ | 69.65 |

| | |
|---|---|
| Day hour | 0.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 0.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

## Existing Traffic Noise

| | |
|---|---|
| 17 | :Id |
| Oak Valley Parkway | :Road |
| Oak View Drive to Western Project Driveway | :Segment |

| Vehicle Distribution (Heavy Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.54 | 14.02 | 10.43 | 92.00 |
| Medium Trucks | 48.00 | 2.00 | 50.00 | 3.00 |
| Heavy Trucks | 48.00 | 2.00 | 50.00 | 5.00 |

| | |
|---|---|
| ADT | 14700 |
| Speed | 45 |
| Distance | 55 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 851.34 | 17.64 | 29.40 | 632.02 | 2.94 | 4.90 | 156.73 | 24.50 | 40.83 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 69.34 | 77.62 | 82.14 | 69.34 | 77.62 | 82.14 | 69.34 | 77.62 | 82.14 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 22.46 | 5.63 | 7.85 | 21.17 | -2.15 | 0.06 | 15.11 | 7.05 | 9.27 |
| Distance | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 66.32 | 57.77 | 64.50 | 65.03 | 49.98 | 56.72 | 58.97 | 59.19 | 65.93 |
| | DAY LEQ | 68.87 | | EVENING LEQ | 65.74 | | NIGHT LEQ | 67.43 | |

| | |
|---|---|
| **CNEL** | **74.17** |
| DAY LEQ | 68.87 |

| | |
|---|---|
| Day hour | 0.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 0.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

## Existing Plus Project Traffic Noise

| | | |
|---|---|---|
| 17 | :Id | |
| Oak Valley Parkway | :Road | |
| Oak View Drive to Western Project Driveway | :Segment | |

| Vehicle Distribution (Heavy Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.54 | 14.02 | 10.43 | 92.00 |
| Medium Trucks | 48.00 | 2.00 | 50.00 | 3.00 |
| Heavy Trucks | 48.00 | 2.00 | 50.00 | 5.00 |

| | |
|---|---|
| ADT | 15800 |
| Speed | 45 |
| Distance | 55 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 915.04 | 18.96 | 31.60 | 679.32 | 3.16 | 5.27 | 168.46 | 26.33 | 43.89 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 69.34 | 77.62 | 82.14 | 69.34 | 77.62 | 82.14 | 69.34 | 77.62 | 82.14 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 22.78 | 5.94 | 8.16 | 21.48 | -1.84 | 0.38 | 15.43 | 7.37 | 9.59 |
| Distance | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 66.64 | 58.08 | 64.82 | 65.34 | 50.30 | 57.04 | 59.29 | 59.51 | 66.24 |
| | DAY LEQ | 69.18 | | EVENING LEQ | 66.06 | | NIGHT LEQ | 67.75 | |

| | |
|---|---|
| CNEL | 74.48 |
| DAY LEQ | 69.18 |

| | |
|---|---|
| Day hour | 0.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 0.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

## Existing Traffic Noise

| | | |
|---|---|---|
| 18 | :Id | |
| Oak Valley Parkway | :Road | |
| Western Project Driveway to Beaumont Avenue | :Segment | |

| Vehicle Distribution (Heavy Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.54 | 14.02 | 10.43 | 92.00 |
| Medium Trucks | 48.00 | 2.00 | 50.00 | 3.00 |
| Heavy Trucks | 48.00 | 2.00 | 50.00 | 5.00 |

| | |
|---|---|
| ADT | 14500 |
| Speed | 45 |
| Distance | 55 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 839.75 | 17.40 | 29.00 | 623.42 | 2.90 | 4.83 | 154.60 | 24.17 | 40.28 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 69.34 | 77.62 | 82.14 | 69.34 | 77.62 | 82.14 | 69.34 | 77.62 | 82.14 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 22.40 | 5.57 | 7.79 | 21.11 | -2.21 | 0.00 | 15.05 | 6.99 | 9.21 |
| Distance | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 66.26 | 57.71 | 64.44 | 64.97 | 49.92 | 56.66 | 58.91 | 59.13 | 65.87 |
| | DAY LEQ | 68.81 | | EVENING LEQ | 65.69 | | NIGHT LEQ | 67.37 | |

| | |
|---|---|
| CNEL | 74.11 |
| DAY LEQ | 68.81 |

| | |
|---|---|
| Day hour | 0.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 0.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

## Existing Plus Project Traffic Noise

| | | |
|---|---|---|
| 18 | :Id | |
| Oak Valley Parkway | :Road | |
| Western Project Driveway to Beaumont Avenue | :Segment | |

| Vehicle Distribution (Heavy Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.54 | 14.02 | 10.43 | 92.00 |
| Medium Trucks | 48.00 | 2.00 | 50.00 | 3.00 |
| Heavy Trucks | 48.00 | 2.00 | 50.00 | 5.00 |

| | |
|---|---|
| ADT | 16000 |
| Speed | 45 |
| Distance | 55 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 926.62 | 19.20 | 32.00 | 687.91 | 3.20 | 5.33 | 170.59 | 26.67 | 44.44 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 69.34 | 77.62 | 82.14 | 69.34 | 77.62 | 82.14 | 69.34 | 77.62 | 82.14 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 22.83 | 6.00 | 8.21 | 21.54 | -1.79 | 0.43 | 15.48 | 7.42 | 9.64 |
| Distance | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 66.69 | 58.13 | 64.87 | 65.40 | 50.35 | 57.09 | 59.34 | 59.56 | 66.30 |
| | DAY LEQ | 69.24 | | EVENING LEQ | 66.11 | | NIGHT LEQ | 67.80 | |

| | |
|---|---|
| CNEL | 74.53 |
| DAY LEQ | 69.24 |

| | |
|---|---|
| Day hour | 0.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 0.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

## Existing Traffic Noise

| | |
|---|---|
| 19 | :Id |
| Oak Valley Parkway | :Road |
| Beaumont Avenue to Palm Avenue | :Segment |

| Vehicle Distribution (Heavy Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.54 | 14.02 | 10.43 | 92.00 |
| Medium Trucks | 48.00 | 2.00 | 50.00 | 3.00 |
| Heavy Trucks | 48.00 | 2.00 | 50.00 | 5.00 |

| | |
|---|---|
| ADT | 13200 |
| Speed | 35 |
| Distance | 55 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 764.46 | 15.84 | 26.40 | 567.53 | 2.64 | 4.40 | 140.74 | 22.00 | 36.67 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 65.11 | 74.83 | 80.05 | 65.11 | 74.83 | 80.05 | 65.11 | 74.83 | 80.05 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 23.09 | 6.25 | 8.47 | 21.79 | -1.53 | 0.69 | 15.74 | 7.68 | 9.90 |
| Distance | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 62.71 | 55.60 | 63.03 | 61.42 | 47.81 | 55.25 | 55.36 | 57.02 | 64.46 |
| | DAY LEQ | 66.27 | | EVENING LEQ | 62.51 | | NIGHT LEQ | 65.61 | |

| | |
|---|---|
| CNEL | 72.17 |
| DAY LEQ | 66.27 |

| | |
|---|---|
| Day hour | 0.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 0.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

## Existing Plus Project Traffic Noise

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 19 | :Id | Vehicle Distribution (Heavy Truck Mix) | | | | ADT | 14200 |
| Oak Valley Parkway | :Road | Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow | Speed | 35 |
| Beaumont Avenue to Palm Avenue | :Segment | Automobiles | 75.54 | 14.02 | 10.43 | 92.00 | Distance | 55 |
| | | Medium Trucks | 48.00 | 2.00 | 50.00 | 3.00 | Left Angle | -90 |
| | | Heavy Trucks | 48.00 | 2.00 | 50.00 | 5.00 | Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 822.38 | 17.04 | 28.40 | 610.52 | 2.84 | 4.73 | 151.40 | 23.67 | 39.44 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 65.11 | 74.83 | 80.05 | 65.11 | 74.83 | 80.05 | 65.11 | 74.83 | 80.05 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 23.40 | 6.57 | 8.79 | 22.11 | -1.21 | 1.01 | 16.05 | 7.99 | 10.21 |
| Distance | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 63.03 | 55.91 | 63.35 | 61.74 | 48.13 | 55.57 | 55.68 | 57.34 | 64.78 |
| | DAY LEQ | 66.59 | | EVENING LEQ | 62.83 | | NIGHT LEQ | 65.93 | |

| | | | |
|---|---|---|---|
| CNEL | 72.48 | Day hour | 0.00 |
| DAY LEQ | 66.59 | Absorptive? | no |
| | | Use hour? | no |
| | | GRADE dB | 0.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

## Existing Traffic Noise

| | | |
|---|---|---|
| 20 | :Id | |
| Oak Valley Parkway | :Road | |
| East of Palm Avenue | :Segment | |

| Vehicle Distribution (Heavy Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.54 | 14.02 | 10.43 | 92.00 |
| Medium Trucks | 48.00 | 2.00 | 50.00 | 3.00 |
| Heavy Trucks | 48.00 | 2.00 | 50.00 | 5.00 |

| | |
|---|---|
| ADT | 12500 |
| Speed | 35 |
| Distance | 55 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 723.93 | 15.00 | 25.00 | 537.43 | 2.50 | 4.17 | 133.27 | 20.83 | 34.72 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 65.11 | 74.83 | 80.05 | 65.11 | 74.83 | 80.05 | 65.11 | 74.83 | 80.05 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 22.85 | 6.01 | 8.23 | 21.56 | -1.77 | 0.45 | 15.50 | 7.44 | 9.66 |
| Distance | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 62.48 | 55.36 | 62.80 | 61.18 | 47.58 | 55.01 | 55.13 | 56.79 | 64.22 |
| | DAY LEQ | 66.04 | | EVENING LEQ | 62.27 | | NIGHT LEQ | 65.37 | |

| | |
|---|---|
| CNEL | 71.93 |
| DAY LEQ | 66.04 |

| | |
|---|---|
| Day hour | 0.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 0.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

## Existing Plus Project Traffic Noise

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 20 | :Id | Vehicle Distribution (Heavy Truck Mix) | | | | ADT | 12900 |
| Oak Valley Parkway | :Road | Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow | Speed | 35 |
| East of Palm Avenue | :Segment | Automobiles | 75.54 | 14.02 | 10.43 | 92.00 | Distance | 55 |
| | | Medium Trucks | 48.00 | 2.00 | 50.00 | 3.00 | Left Angle | -90 |
| | | Heavy Trucks | 48.00 | 2.00 | 50.00 | 5.00 | Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 747.09 | 15.48 | 25.80 | 554.63 | 2.58 | 4.30 | 137.54 | 21.50 | 35.83 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 65.11 | 74.83 | 80.05 | 65.11 | 74.83 | 80.05 | 65.11 | 74.83 | 80.05 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 22.99 | 6.15 | 8.37 | 21.69 | -1.63 | 0.59 | 15.64 | 7.58 | 9.80 |
| Distance | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 | -0.48 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 62.61 | 55.50 | 62.93 | 61.32 | 47.71 | 55.15 | 55.26 | 56.92 | 64.36 |
| | DAY LEQ | 66.17 | | EVENING LEQ | 62.41 | | NIGHT LEQ | 65.51 | |

| | | | | |
|---|---|---|---|---|
| CNEL | 72.07 | | Day hour | 0.00 |
| DAY LEQ | 66.17 | | Absorptive? | no |
| | | | Use hour? | no |
| | | | GRADE dB | 0.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

## Existing Traffic Noise

| | |
|---|---|
| 21 | :Id |
| 12th Street | :Road |
| West of Beaumont Avenue | :Segment |

| Vehicle Distribution (Light Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.56 | 13.96 | 10.49 | 97.40 |
| Medium Trucks | 48.91 | 2.17 | 48.91 | 1.84 |
| Heavy Trucks | 47.30 | 5.41 | 47.30 | 0.74 |

| | |
|---|---|
| ADT | 2400 |
| Speed | 25 |
| Distance | 30 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 147.19 | 1.80 | 0.70 | 108.78 | 0.32 | 0.32 | 27.25 | 2.40 | 0.93 |
| Speed in MPH | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 59.44 | 71.09 | 77.24 | 59.44 | 71.09 | 77.24 | 59.44 | 71.09 | 77.24 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 17.39 | -1.73 | -5.83 | 16.08 | -9.24 | -9.23 | 10.07 | -0.48 | -4.58 |
| Distance | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 53.98 | 46.50 | 48.55 | 52.67 | 38.99 | 45.16 | 46.66 | 47.75 | 49.80 |
| | DAY LEQ | 55.64 | | EVENING LEQ | 53.53 | | NIGHT LEQ | 53.04 | |

| | |
|---|---|
| CNEL | 60.12 |
| DAY LEQ | 55.64 |

| | |
|---|---|
| Day hour | 0.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 0.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

## Existing Plus Project Traffic Noise

| | |
|---|---|
| 21 | :Id |
| 12th Street | :Road |
| West of Beaumont Avenue | :Segment |

| Vehicle Distribution (Light Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.56 | 13.96 | 10.49 | 97.40 |
| Medium Trucks | 48.91 | 2.17 | 48.91 | 1.84 |
| Heavy Trucks | 47.30 | 5.41 | 47.30 | 0.74 |

| | |
|---|---|
| ADT | 2600 |
| Speed | 25 |
| Distance | 30 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 159.46 | 1.95 | 0.76 | 117.84 | 0.35 | 0.35 | 29.52 | 2.60 | 1.01 |
| Speed in MPH | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 59.44 | 71.09 | 77.24 | 59.44 | 71.09 | 77.24 | 59.44 | 71.09 | 77.24 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 17.74 | -1.39 | -5.49 | 16.43 | -8.89 | -8.88 | 10.42 | -0.14 | -4.24 |
| Distance | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 54.33 | 46.85 | 48.90 | 53.02 | 39.34 | 45.51 | 47.00 | 48.10 | 50.15 |
| | DAY LEQ | 55.99 | | EVENING LEQ | 53.88 | | NIGHT LEQ | 53.39 | |

| | |
|---|---|
| CNEL | 60.47 |
| DAY LEQ | 55.99 |

| | |
|---|---|
| Day hour | 0.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 0.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

## Existing Traffic Noise

| | |
|---|---|
| 22 | :Id |
| 12th Street | :Road |
| East of Beaumont Avenue | :Segment |

| Vehicle Distribution (Light Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.56 | 13.96 | 10.49 | 97.40 |
| Medium Trucks | 48.91 | 2.17 | 48.91 | 1.84 |
| Heavy Trucks | 47.30 | 5.41 | 47.30 | 0.74 |

| | |
|---|---|
| ADT | 1600 |
| Speed | 25 |
| Distance | 30 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 98.13 | 1.20 | 0.47 | 72.52 | 0.21 | 0.21 | 18.16 | 1.60 | 0.62 |
| Speed in MPH | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 59.44 | 71.09 | 77.24 | 59.44 | 71.09 | 77.24 | 59.44 | 71.09 | 77.24 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 15.63 | -3.49 | -7.59 | 14.32 | -11.00 | -10.99 | 8.31 | -2.24 | -6.35 |
| Distance | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 52.22 | 44.74 | 46.79 | 50.91 | 37.23 | 43.40 | 44.90 | 45.99 | 48.04 |
| | DAY LEQ | 53.88 | | EVENING LEQ | 51.77 | | NIGHT LEQ | 51.28 | |

| | |
|---|---|
| CNEL | 58.36 |
| DAY LEQ | 53.88 |

| | |
|---|---|
| Day hour | 0.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 0.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

## Existing Plus Project Traffic Noise

| | |
|---|---|
| 22 | :Id |
| 12th Street | :Road |
| East of Beaumont Avenue | :Segment |

| Vehicle Distribution (Light Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.56 | 13.96 | 10.49 | 97.40 |
| Medium Trucks | 48.91 | 2.17 | 48.91 | 1.84 |
| Heavy Trucks | 47.30 | 5.41 | 47.30 | 0.74 |

| | |
|---|---|
| ADT | 1800 |
| Speed | 25 |
| Distance | 30 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 110.39 | 1.35 | 0.53 | 81.58 | 0.24 | 0.24 | 20.43 | 1.80 | 0.70 |
| Speed in MPH | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 59.44 | 71.09 | 77.24 | 59.44 | 71.09 | 77.24 | 59.44 | 71.09 | 77.24 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 16.14 | -2.98 | -7.08 | 14.83 | -10.49 | -10.48 | 8.82 | -1.73 | -5.83 |
| Distance | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 52.73 | 45.25 | 47.31 | 51.42 | 37.74 | 43.91 | 45.41 | 46.50 | 48.55 |
| | DAY LEQ | 54.39 | | EVENING LEQ | 52.28 | | NIGHT LEQ | 51.79 | |

| | |
|---|---|
| CNEL | 58.87 |
| DAY LEQ | 54.39 |

| | |
|---|---|
| Day hour | 0.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 0.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

## Existing Traffic Noise

| | |
|---|---|
| 23 | :Id |
| 10th Street | :Road |
| West of Beaumont Avenue | :Segment |

| Vehicle Distribution (Light Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.56 | 13.96 | 10.49 | 97.40 |
| Medium Trucks | 48.91 | 2.17 | 48.91 | 1.84 |
| Heavy Trucks | 47.30 | 5.41 | 47.30 | 0.74 |

| | |
|---|---|
| ADT | 1400 |
| Speed | 25 |
| Distance | 30 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 85.86 | 1.05 | 0.41 | 63.45 | 0.19 | 0.19 | 15.89 | 1.40 | 0.54 |
| Speed in MPH | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 59.44 | 71.09 | 77.24 | 59.44 | 71.09 | 77.24 | 59.44 | 71.09 | 77.24 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 15.05 | -4.07 | -8.17 | 13.74 | -11.58 | -11.57 | 7.73 | -2.82 | -6.93 |
| Distance | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 51.64 | 44.16 | 46.21 | 50.33 | 36.65 | 42.82 | 44.32 | 45.41 | 47.46 |
| | DAY LEQ | 53.30 | | EVENING LEQ | 51.19 | | NIGHT LEQ | 50.70 | |

| | |
|---|---|
| CNEL | 57.78 |
| DAY LEQ | 53.30 |

| | |
|---|---|
| Day hour | 0.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 0.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

## Existing Plus Project Traffic Noise

| | |
|---|---|
| 23 | :Id |
| 10th Street | :Road |
| West of Beaumont Avenue | :Segment |

| Vehicle Distribution (Light Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.56 | 13.96 | 10.49 | 97.40 |
| Medium Trucks | 48.91 | 2.17 | 48.91 | 1.84 |
| Heavy Trucks | 47.30 | 5.41 | 47.30 | 0.74 |

| | |
|---|---|
| ADT | 1600 |
| Speed | 25 |
| Distance | 30 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 98.13 | 1.20 | 0.47 | 72.52 | 0.21 | 0.21 | 18.16 | 1.60 | 0.62 |
| Speed in MPH | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 59.44 | 71.09 | 77.24 | 59.44 | 71.09 | 77.24 | 59.44 | 71.09 | 77.24 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 15.63 | -3.49 | -7.59 | 14.32 | -11.00 | -10.99 | 8.31 | -2.24 | -6.35 |
| Distance | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 52.22 | 44.74 | 46.79 | 50.91 | 37.23 | 43.40 | 44.90 | 45.99 | 48.04 |
| | DAY LEQ | 53.88 | | EVENING LEQ | 51.77 | | NIGHT LEQ | 51.28 | |

| | |
|---|---|
| **CNEL** | **58.36** |
| DAY LEQ | 53.88 |

| | |
|---|---|
| Day hour | 0.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 0.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

## Existing Traffic Noise

| | |
|---|---|
| 24 | :Id |
| 10th Street | :Road |
| East of Beaumont Avenue | :Segment |

| Vehicle Distribution (Light Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.56 | 13.96 | 10.49 | 97.40 |
| Medium Trucks | 48.91 | 2.17 | 48.91 | 1.84 |
| Heavy Trucks | 47.30 | 5.41 | 47.30 | 0.74 |

| | |
|---|---|
| ADT | 1700 |
| Speed | 25 |
| Distance | 30 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 104.26 | 1.27 | 0.50 | 77.05 | 0.23 | 0.23 | 19.30 | 1.70 | 0.66 |
| Speed in MPH | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 59.44 | 71.09 | 77.24 | 59.44 | 71.09 | 77.24 | 59.44 | 71.09 | 77.24 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 15.90 | -3.23 | -7.33 | 14.58 | -10.74 | -10.73 | 8.57 | -1.98 | -6.08 |
| Distance | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 52.48 | 45.01 | 47.06 | 51.17 | 37.50 | 43.66 | 45.16 | 46.25 | 48.31 |
| | DAY LEQ | 54.14 | | EVENING LEQ | 52.04 | | NIGHT LEQ | 51.55 | |

| | |
|---|---|
| CNEL | 58.62 |
| DAY LEQ | 54.14 |

| | |
|---|---|
| Day hour | 0.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 0.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

## Existing Plus Project Traffic Noise

| | | |
|---|---|---|
| 24 | :Id | |
| 10th Street | :Road | |
| East of Beaumont Avenue | :Segment | |

| Vehicle Distribution (Light Truck Mix) | | | | |
|---|---|---|---|---|
| Motor-Vehicle Type | Daytime % (7 AM - 7 PM) | Evening % (7 PM - 10 PM) | Night % (10 PM - 7 AM) | Total % of Traffic Flow |
| Automobiles | 75.56 | 13.96 | 10.49 | 97.40 |
| Medium Trucks | 48.91 | 2.17 | 48.91 | 1.84 |
| Heavy Trucks | 47.30 | 5.41 | 47.30 | 0.74 |

| | |
|---|---|
| ADT | 1900 |
| Speed | 25 |
| Distance | 30 |
| Left Angle | -90 |
| Right Angle | 90 |

| | Daytime | | | Evening | | | Night | | |
|---|---|---|---|---|---|---|---|---|---|
| Noise Parameters | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks | Autos | Medium Trucks | Heavy Trucks |
| INPUT PARAMETERS | | | | | | | | | |
| Vehicles per hour | 116.53 | 1.42 | 0.55 | 86.11 | 0.25 | 0.25 | 21.57 | 1.90 | 0.74 |
| Speed in MPH | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 |
| 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 |
| NOISE CALCULATIONS | | | | | | | | | |
| Reference levels | 59.44 | 71.09 | 77.24 | 59.44 | 71.09 | 77.24 | 59.44 | 71.09 | 77.24 |
| ADJUSTMENTS | | | | | | | | | |
| Flow | 16.38 | -2.75 | -6.85 | 15.07 | -10.26 | -10.24 | 9.05 | -1.50 | -5.60 |
| Distance | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 |
| Finite Roadway | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 |
| Constant | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 | -25.00 |
| LEQ | 52.97 | 45.49 | 47.54 | 51.65 | 37.98 | 44.14 | 45.64 | 46.74 | 48.79 |
| | DAY LEQ | 54.63 | | EVENING LEQ | 52.52 | | NIGHT LEQ | 52.03 | |

| | |
|---|---|
| CNEL | 59.11 |
| DAY LEQ | 54.63 |

| | |
|---|---|
| Day hour | 0.00 |
| Absorptive? | no |
| Use hour? | no |
| GRADE dB | 0.00 |

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

# APPENDIX F

# SOUNDPLAN WORKSHEETS

# Noise emissions of industry sources

| Source name | Reference | Level | Frequency spectrum [dB(A)] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Correctio | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 31 Hz | 40 Hz | 50 Hz | 63 Hz | 80 Hz | 100 Hz | 125 Hz | 160 Hz | 200 Hz | 250 Hz | 315 Hz | 400 Hz | 500 Hz | 630 Hz | 800 Hz | 1 kHz | 1.3 kHz | 1.6 kHz | 2 kHz | 2.5 kHz | 3.2 kHz | 4 kHz | 5 kHz | 6.3 kHz | 8 kHz | 10 kHz | 12.5 kHz | 16 kHz | 20 kHz | Cwa dB | CI dB | CT dB |
| Speaker 1 | Lw/unit | Day | 70.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | - | - | - |
| | | Night | 64.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | - | - | - |
| Speaker 2 | Lw/unit | Day | 70.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | - | - | - |
| | | Night | 64.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | - | - | - |
| Blower 1 | Lw/unit | Day | 109. | - | 29. | 41. | 46. | 43. | 48. | 59. | 70. | 75. | 76. | 84. | 90. | 94. | 98. | 103 | 98. | 100 | 102 | 100 | 99. | 96. | 92. | 88. | 84. | 79. | 74. | 66. | 56. | 44. | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Blower 2 | Lw/unit | Day | 109. | - | 29. | 41. | 46. | 43. | 48. | 59. | 70. | 75. | 76. | 84. | 90. | 94. | 98. | 103 | 98. | 100 | 102 | 100 | 99. | 96. | 92. | 88. | 84. | 79. | 74. | 66. | 56. | 44. | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Blower 3 | Lw/unit | Day | 109. | - | 29. | 41. | 46. | 43. | 48. | 59. | 70. | 75. | 76. | 84. | 90. | 94. | 98. | 103 | 98. | 100 | 102 | 100 | 99. | 96. | 92. | 88. | 84. | 79. | 74. | 66. | 56. | 44. | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Blower 4 | Lw/unit | Day | 109. | - | 29. | 41. | 46. | 43. | 48. | 59. | 70. | 75. | 76. | 84. | 90. | 94. | 98. | 103 | 98. | 100 | 102 | 100 | 99. | 96. | 92. | 88. | 84. | 79. | 74. | 66. | 56. | 44. | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Blower 5 | Lw/unit | Day | 109. | - | 29. | 41. | 46. | 43. | 48. | 59. | 70. | 75. | 76. | 84. | 90. | 94. | 98. | 103 | 98. | 100 | 102 | 100 | 99. | 96. | 92. | 88. | 84. | 79. | 74. | 66. | 56. | 44. | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Blower 6 | Lw/unit | Day | 109. | - | 29. | 41. | 46. | 43. | 48. | 59. | 70. | 75. | 76. | 84. | 90. | 94. | 98. | 103 | 98. | 100 | 102 | 100 | 99. | 96. | 92. | 88. | 84. | 79. | 74. | 66. | 56. | 44. | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Blower 7 | Lw/unit | Day | 109. | - | 29. | 41. | 46. | 43. | 48. | 59. | 70. | 75. | 76. | 84. | 90. | 94. | 98. | 103 | 98. | 100 | 102 | 100 | 99. | 96. | 92. | 88. | 84. | 79. | 74. | 66. | 56. | 44. | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Blower 8 | Lw/unit | Day | 109. | - | 29. | 41. | 46. | 43. | 48. | 59. | 70. | 75. | 76. | 84. | 90. | 94. | 98. | 103 | 98. | 100 | 102 | 100 | 99. | 96. | 92. | 88. | 84. | 79. | 74. | 66. | 56. | 44. | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Blower 9 | Lw/unit | Day | 109. | - | 29. | 41. | 46. | 43. | 48. | 59. | 70. | 75. | 76. | 84. | 90. | 94. | 98. | 103 | 98. | 100 | 102 | 100 | 99. | 96. | 92. | 88. | 84. | 79. | 74. | 66. | 56. | 44. | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Blower 10 | Lw/unit | Day | 109. | - | 29. | 41. | 46. | 43. | 48. | 59. | 70. | 75. | 76. | 84. | 90. | 94. | 98. | 103 | 98. | 100 | 102 | 100 | 99. | 96. | 92. | 88. | 84. | 79. | 74. | 66. | 56. | 44. | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Blower 11 | Lw/unit | Day | 109. | - | 29. | 41. | 46. | 43. | 48. | 59. | 70. | 75. | 76. | 84. | 90. | 94. | 98. | 103 | 98. | 100 | 102 | 100 | 99. | 96. | 92. | 88. | 84. | 79. | 74. | 66. | 56. | 44. | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Blower 12 | Lw/unit | Day | 109. | - | 29. | 41. | 46. | 43. | 48. | 59. | 70. | 75. | 76. | 84. | 90. | 94. | 98. | 103 | 98. | 100 | 102 | 100 | 99. | 96. | 92. | 88. | 84. | 79. | 74. | 66. | 56. | 44. | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Blower 13 | Lw/unit | Day | 109. | - | 29. | 41. | 46. | 43. | 48. | 59. | 70. | 75. | 76. | 84. | 90. | 94. | 98. | 103 | 98. | 100 | 102 | 100 | 99. | 96. | 92. | 88. | 84. | 79. | 74. | 66. | 56. | 44. | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Blower 14 | Lw/unit | Day | 109. | - | 29. | 41. | 46. | 43. | 48. | 59. | 70. | 75. | 76. | 84. | 90. | 94. | 98. | 103 | 98. | 100 | 102 | 100 | 99. | 96. | 92. | 88. | 84. | 79. | 74. | 66. | 56. | 44. | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Vacuum Sta | Lw/unit | Day | 94.9 | - | 14. | 26. | 31. | 28. | 33. | 44. | 55. | 60. | 61. | 69. | 75. | 79. | 83. | 88.2 | 84. | 85.7 | 88.0 | 85.2 | 84. | 81. | 78. | 73. | 69. | 64. | 59. | 51. | 41. | 29. | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Vacuum Sta | Lw/unit | Day | 94.9 | - | 14. | 26. | 31. | 28. | 33. | 44. | 55. | 60. | 61. | 69. | 75. | 79. | 83. | 88.2 | 84. | 85.7 | 88.0 | 85.2 | 84. | 81. | 78. | 73. | 69. | 64. | 59. | 51. | 41. | 29. | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Vacuum Sta | Lw/unit | Day | 94.9 | - | 14. | 26. | 31. | 28. | 33. | 44. | 55. | 60. | 61. | 69. | 75. | 79. | 83. | 88.2 | 84. | 85.7 | 88.0 | 85.2 | 84. | 81. | 78. | 73. | 69. | 64. | 59. | 51. | 41. | 29. | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Vacuum Sta | Lw/unit | Day | 94.9 | - | 14. | 26. | 31. | 28. | 33. | 44. | 55. | 60. | 61. | 69. | 75. | 79. | 83. | 88.2 | 84. | 85.7 | 88.0 | 85.2 | 84. | 81. | 78. | 73. | 69. | 64. | 59. | 51. | 41. | 29. | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Vacuum Sta | Lw/unit | Day | 94.9 | - | 14. | 26. | 31. | 28. | 33. | 44. | 55. | 60. | 61. | 69. | 75. | 79. | 83. | 88.2 | 84. | 85.7 | 88.0 | 85.2 | 84. | 81. | 78. | 73. | 69. | 64. | 59. | 51. | 41. | 29. | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Vacuum Sta | Lw/unit | Day | 94.9 | - | 14. | 26. | 31. | 28. | 33. | 44. | 55. | 60. | 61. | 69. | 75. | 79. | 83. | 88.2 | 84. | 85.7 | 88.0 | 85.2 | 84. | 81. | 78. | 73. | 69. | 64. | 59. | 51. | 41. | 29. | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Vacuum Sta | Lw/unit | Day | 94.9 | - | 14. | 26. | 31. | 28. | 33. | 44. | 55. | 60. | 61. | 69. | 75. | 79. | 83. | 88.2 | 84. | 85.7 | 88.0 | 85.2 | 84. | 81. | 78. | 73. | 69. | 64. | 59. | 51. | 41. | 29. | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Vacuum Sta | Lw/unit | Day | 94.9 | - | 14. | 26. | 31. | 28. | 33. | 44. | 55. | 60. | 61. | 69. | 75. | 79. | 83. | 88.2 | 84. | 85.7 | 88.0 | 85.2 | 84. | 81. | 78. | 73. | 69. | 64. | 59. | 51. | 41. | 29. | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Vacuum Sta | Lw/unit | Day | 94.9 | - | 14. | 26. | 31. | 28. | 33. | 44. | 55. | 60. | 61. | 69. | 75. | 79. | 83. | 88.2 | 84. | 85.7 | 88.0 | 85.2 | 84. | 81. | 78. | 73. | 69. | 64. | 59. | 51. | 41. | 29. | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Vacuum Sta | Lw/unit | Day | 94.9 | - | 14. | 26. | 31. | 28. | 33. | 44. | 55. | 60. | 61. | 69. | 75. | 79. | 83. | 88.2 | 84. | 85.7 | 88.0 | 85.2 | 84. | 81. | 78. | 73. | 69. | 64. | 59. | 51. | 41. | 29. | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Vacuum Sta | Lw/unit | Day | 94.9 | - | 14. | 26. | 31. | 28. | 33. | 44. | 55. | 60. | 61. | 69. | 75. | 79. | 83. | 88.2 | 84. | 85.7 | 88.0 | 85.2 | 84. | 81. | 78. | 73. | 69. | 64. | 59. | 51. | 41. | 29. | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Vacuum Sta | Lw/unit | Day | 94.9 | - | 14. | 26. | 31. | 28. | 33. | 44. | 55. | 60. | 61. | 69. | 75. | 79. | 83. | 88.2 | 84. | 85.7 | 88.0 | 85.2 | 84. | 81. | 78. | 73. | 69. | 64. | 59. | 51. | 41. | 29. | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Vacuum Sta | Lw/unit | Day | 94.9 | - | 14. | 26. | 31. | 28. | 33. | 44. | 55. | 60. | 61. | 69. | 75. | 79. | 83. | 88.2 | 84. | 85.7 | 88.0 | 85.2 | 84. | 81. | 78. | 73. | 69. | 64. | 59. | 51. | 41. | 29. | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC1 | Lw/unit | Day | 56.2 | 20. | 24. | 20. | 24. | 27. | 34. | 37. | 39. | 39. | 42. | 44. | 34. | 36. | 37. | 46.2 | 47. | 47.6 | 48.8 | 49.0 | 49. | 48. | 48. | 47. | 51. | 50. | 48. | 52. | 50. | - | - | - | - |

| Source nam | Referer | | Level | Frequency spectrum [dB(A)] | | | | | | | | | | | | | | | | | | | | | | | | | | | | Correctio | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 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 | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz | dB | dB | dB |
| HVAC1 | | Nig | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC34 | Lw/unit | Day | 56.2 | 20. | 24. | 20. | 24. | 27. | 34. | 37. | 39. | 39. | 42. | 44. | 34. | 36. | 37. | 46.2 | 47. | 47.6 | 48.8 | 49.0 | 49. | 48. | 48. | 47. | 51. | 50. | 48. | 52. | 50. | - | - | - | - |
| | | Nig | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC35 | Lw/unit | Day | 56.2 | 20. | 24. | 20. | 24. | 27. | 34. | 37. | 39. | 39. | 42. | 44. | 34. | 36. | 37. | 46.2 | 47. | 47.6 | 48.8 | 49.0 | 49. | 48. | 48. | 47. | 51. | 50. | 48. | 52. | 50. | - | - | - | - |
| | | Nig | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC36 | Lw/unit | Day | 56.2 | 20. | 24. | 20. | 24. | 27. | 34. | 37. | 39. | 39. | 42. | 44. | 34. | 36. | 37. | 46.2 | 47. | 47.6 | 48.8 | 49.0 | 49. | 48. | 48. | 47. | 51. | 50. | 48. | 52. | 50. | - | - | - | - |
| | | Nig | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC37 | Lw/unit | Day | 56.2 | 20. | 24. | 20. | 24. | 27. | 34. | 37. | 39. | 39. | 42. | 44. | 34. | 36. | 37. | 46.2 | 47. | 47.6 | 48.8 | 49.0 | 49. | 48. | 48. | 47. | 51. | 50. | 48. | 52. | 50. | - | - | - | - |
| | | Nig | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC38 | Lw/unit | Day | 56.2 | 20. | 24. | 20. | 24. | 27. | 34. | 37. | 39. | 39. | 42. | 44. | 34. | 36. | 37. | 46.2 | 47. | 47.6 | 48.8 | 49.0 | 49. | 48. | 48. | 47. | 51. | 50. | 48. | 52. | 50. | - | - | - | - |
| | | Nig | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC39 | Lw/unit | Day | 56.2 | 20. | 24. | 20. | 24. | 27. | 34. | 37. | 39. | 39. | 42. | 44. | 34. | 36. | 37. | 46.2 | 47. | 47.6 | 48.8 | 49.0 | 49. | 48. | 48. | 47. | 51. | 50. | 48. | 52. | 50. | - | - | - | - |
| | | Nig | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC40 | Lw/unit | Day | 56.2 | 20. | 24. | 20. | 24. | 27. | 34. | 37. | 39. | 39. | 42. | 44. | 34. | 36. | 37. | 46.2 | 47. | 47.6 | 48.8 | 49.0 | 49. | 48. | 48. | 47. | 51. | 50. | 48. | 52. | 50. | - | - | - | - |
| | | Nig | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC41 | Lw/unit | Day | 56.2 | 20. | 24. | 20. | 24. | 27. | 34. | 37. | 39. | 39. | 42. | 44. | 34. | 36. | 37. | 46.2 | 47. | 47.6 | 48.8 | 49.0 | 49. | 48. | 48. | 47. | 51. | 50. | 48. | 52. | 50. | - | - | - | - |
| | | Nig | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC42 | Lw/unit | Day | 56.2 | 20. | 24. | 20. | 24. | 27. | 34. | 37. | 39. | 39. | 42. | 44. | 34. | 36. | 37. | 46.2 | 47. | 47.6 | 48.8 | 49.0 | 49. | 48. | 48. | 47. | 51. | 50. | 48. | 52. | 50. | - | - | - | - |
| | | Nig | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC43 | Lw/unit | Day | 56.2 | 20. | 24. | 20. | 24. | 27. | 34. | 37. | 39. | 39. | 42. | 44. | 34. | 36. | 37. | 46.2 | 47. | 47.6 | 48.8 | 49.0 | 49. | 48. | 48. | 47. | 51. | 50. | 48. | 52. | 50. | - | - | - | - |
| | | Nig | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC44 | Lw/unit | Day | 56.2 | 20. | 24. | 20. | 24. | 27. | 34. | 37. | 39. | 39. | 42. | 44. | 34. | 36. | 37. | 46.2 | 47. | 47.6 | 48.8 | 49.0 | 49. | 48. | 48. | 47. | 51. | 50. | 48. | 52. | 50. | - | - | - | - |
| | | Nig | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC45 | Lw/unit | Day | 56.2 | 20. | 24. | 20. | 24. | 27. | 34. | 37. | 39. | 39. | 42. | 44. | 34. | 36. | 37. | 46.2 | 47. | 47.6 | 48.8 | 49.0 | 49. | 48. | 48. | 47. | 51. | 50. | 48. | 52. | 50. | - | - | - | - |
| | | Nig | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC46 | Lw/unit | Day | 56.2 | 20. | 24. | 20. | 24. | 27. | 34. | 37. | 39. | 39. | 42. | 44. | 34. | 36. | 37. | 46.2 | 47. | 47.6 | 48.8 | 49.0 | 49. | 48. | 48. | 47. | 51. | 50. | 48. | 52. | 50. | - | - | - | - |
| | | Nig | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC47 | Lw/unit | Day | 56.2 | 20. | 24. | 20. | 24. | 27. | 34. | 37. | 39. | 39. | 42. | 44. | 34. | 36. | 37. | 46.2 | 47. | 47.6 | 48.8 | 49.0 | 49. | 48. | 48. | 47. | 51. | 50. | 48. | 52. | 50. | - | - | - | - |
| | | Nig | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC48 | Lw/unit | Day | 56.2 | 20. | 24. | 20. | 24. | 27. | 34. | 37. | 39. | 39. | 42. | 44. | 34. | 36. | 37. | 46.2 | 47. | 47.6 | 48.8 | 49.0 | 49. | 48. | 48. | 47. | 51. | 50. | 48. | 52. | 50. | - | - | - | - |
| | | Nig | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC49 | Lw/unit | Day | 56.2 | 20. | 24. | 20. | 24. | 27. | 34. | 37. | 39. | 39. | 42. | 44. | 34. | 36. | 37. | 46.2 | 47. | 47.6 | 48.8 | 49.0 | 49. | 48. | 48. | 47. | 51. | 50. | 48. | 52. | 50. | - | - | - | - |
| | | Nig | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC50 | Lw/unit | Day | 56.2 | 20. | 24. | 20. | 24. | 27. | 34. | 37. | 39. | 39. | 42. | 44. | 34. | 36. | 37. | 46.2 | 47. | 47.6 | 48.8 | 49.0 | 49. | 48. | 48. | 47. | 51. | 50. | 48. | 52. | 50. | - | - | - | - |
| | | Nig | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC51 | Lw/unit | Day | 56.2 | 20. | 24. | 20. | 24. | 27. | 34. | 37. | 39. | 39. | 42. | 44. | 34. | 36. | 37. | 46.2 | 47. | 47.6 | 48.8 | 49.0 | 49. | 48. | 48. | 47. | 51. | 50. | 48. | 52. | 50. | - | - | - | - |
| | | Nig | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC52 | Lw/unit | Day | 56.2 | 20. | 24. | 20. | 24. | 27. | 34. | 37. | 39. | 39. | 42. | 44. | 34. | 36. | 37. | 46.2 | 47. | 47.6 | 48.8 | 49.0 | 49. | 48. | 48. | 47. | 51. | 50. | 48. | 52. | 50. | - | - | - | - |
| | | Nig | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC53 | Lw/unit | Day | 56.2 | 20. | 24. | 20. | 24. | 27. | 34. | 37. | 39. | 39. | 42. | 44. | 34. | 36. | 37. | 46.2 | 47. | 47.6 | 48.8 | 49.0 | 49. | 48. | 48. | 47. | 51. | 50. | 48. | 52. | 50. | - | - | - | - |
| | | Nig | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC54 | Lw/unit | Day | 56.2 | 20. | 24. | 20. | 24. | 27. | 34. | 37. | 39. | 39. | 42. | 44. | 34. | 36. | 37. | 46.2 | 47. | 47.6 | 48.8 | 49.0 | 49. | 48. | 48. | 47. | 51. | 50. | 48. | 52. | 50. | - | - | - | - |
| | | Nig | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Fueling Area | Lw/m² | Day | 61.0 | 24. | 29. | 24. | 28. | 32. | 38. | 41. | 44. | 44. | 46. | 48. | 39. | 40. | 42. | 51.0 | 51. | 52.4 | 53.6 | 53.8 | 53. | 53. | 52. | 52. | 55. | 54. | 53. | 57. | 54. | - | - | - | - |
| | | Nig | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Fueling Area | Lw/m² | Day | 67.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | - | - | - |
| | | Nig | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | - | - | - |

# Noise emissions of parking lot traffic

| Name | Parking lot type | Size | Movements per hour | | Road surface | Separated method | Lw,ref |
|---|---|---|---|---|---|---|---|
| | | | Day | Night | | | dB(A) |
| 1 | Visitors and staff | 14 Parking bays | 1.100 | 0.000 | Asphaltic driving lanes | no | 76.2 |
| 2 | Visitors and staff | 13 Parking bays | 1.100 | 0.000 | Asphaltic driving lanes | no | 75.6 |
| 3 | Visitors and staff | 14 Parking bays | 1.100 | 0.000 | Asphaltic driving lanes | no | 76.2 |
| 4 | Visitors and staff | 10 Parking bays | 1.100 | 0.000 | Asphaltic driving lanes | no | 73.0 |
| 5 | Visitors and staff | 11 Parking bays | 1.100 | 0.000 | Asphaltic driving lanes | no | 74.2 |
| 6 | Visitors and staff | 7 Parking bays | 1.100 | 0.000 | Asphaltic driving lanes | no | 71.5 |
| 7 | Visitors and staff | 10 Parking bays | 1.100 | 0.000 | Asphaltic driving lanes | no | 73.0 |
| 8 | Visitors and staff | 12 Parking bays | 1.100 | 0.000 | Asphaltic driving lanes | no | 75.0 |
| 9 | Visitors and staff | 8 Parking bays | 1.100 | 0.000 | Asphaltic driving lanes | no | 72.0 |
| 10 | Visitors and staff | 10 Parking bays | 1.100 | 0.000 | Asphaltic driving lanes | no | 73.0 |
| 12 | Visitors and staff | 15 Parking bays | 1.100 | 0.000 | Asphaltic driving lanes | no | 76.7 |
| 13 | Visitors and staff | 120 Parking bays | 1.100 | 0.000 | Asphaltic driving lanes | no | 88.9 |
| 14 | Visitors and staff | 11 Parking bays | 1.100 | 0.000 | Asphaltic driving lanes | no | 74.2 |
| 15 | Visitors and staff | 3 Parking bays | 1.100 | 0.000 | Asphaltic driving lanes | no | 67.8 |
| 16 | Visitors and staff | 17 Parking bays | 1.100 | 0.000 | Asphaltic driving lanes | no | 77.6 |
| 17 | Visitors and staff | 6 Parking bays | 1.100 | 0.000 | Asphaltic driving lanes | no | 70.8 |
| 17 | Visitors and staff | 16 Parking bays | 1.100 | 0.000 | Asphaltic driving lanes | no | 77.2 |

# Receiver list

| No. | Receiver name | Building side | Floor | Limit | | Level w/o NP | | Level w NP | | Difference | | Conflict |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Day | Night | Day | Night | Day | Night | Day | Night | Day |
| | | | | dB(A) | | dB(A) | | dB(A) | | dB | | dB |
| 1 | 2 | - | GF | - | - | 62.1 | 8.1 | 55.8 | 8.1 | -6.3 | 0.0 | - |
| 2 | | - | GF | - | - | 61.2 | 11.9 | 62.1 | 11.9 | 0.9 | 0.0 | - |
| 3 | 3 | - | GF | - | - | 51.9 | 7.8 | 50.1 | 7.8 | -1.8 | 0.0 | - |
| 4 | 4 | - | GF | - | - | 63.3 | 6.2 | 56.4 | 6.2 | -7.0 | 0.0 | - |
| 5 | 5 | - | GF | - | - | 63.6 | 2.3 | 55.6 | 2.3 | -8.0 | 0.0 | - |
| 6 | 6 | - | GF | - | - | 56.9 | 1.7 | 56.9 | 1.4 | -0.1 | -0.3 | - |

# Noise emissions of industry sources

| Source name | Reference | Level | | Frequency spectrum [dB(A)] | | | | | | | | | | Corrections | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | dB(A) | 31 Hz | 63 Hz | 125 Hz | 250 Hz | 500 Hz | 1 kHz | 2 kHz | 4 kHz | 8 kHz | 16 kHz | Cwall dB | CI dB | CT dB |
| Speaker 1 | Lw/unit | Day | 70.0 | | | | | | | | | | | - | - | - |
| | | Night | 64.0 | | | | | | | | | | | - | - | - |
| Speaker 2 | Lw/unit | Day | 70.0 | | | | | | | | | | | - | - | - |
| | | Night | 64.0 | | | | | | | | | | | - | - | - |
| HVAC1 | Lw/unit | Day | 56.2 | 20.0 | 24.0 | 37.0 | 42.0 | 36.0 | 47.0 | 49.0 | 48.0 | 50.0 | 50.0 | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC34 | Lw/unit | Day | 56.2 | 20.0 | 24.0 | 37.0 | 42.0 | 36.0 | 47.0 | 49.0 | 48.0 | 50.0 | 50.0 | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC35 | Lw/unit | Day | 56.2 | 20.0 | 24.0 | 37.0 | 42.0 | 36.0 | 47.0 | 49.0 | 48.0 | 50.0 | 50.0 | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC36 | Lw/unit | Day | 56.2 | 20.0 | 24.0 | 37.0 | 42.0 | 36.0 | 47.0 | 49.0 | 48.0 | 50.0 | 50.0 | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC37 | Lw/unit | Day | 56.2 | 20.0 | 24.0 | 37.0 | 42.0 | 36.0 | 47.0 | 49.0 | 48.0 | 50.0 | 50.0 | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC38 | Lw/unit | Day | 56.2 | 20.0 | 24.0 | 37.0 | 42.0 | 36.0 | 47.0 | 49.0 | 48.0 | 50.0 | 50.0 | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC39 | Lw/unit | Day | 56.2 | 20.0 | 24.0 | 37.0 | 42.0 | 36.0 | 47.0 | 49.0 | 48.0 | 50.0 | 50.0 | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC40 | Lw/unit | Day | 56.2 | 20.0 | 24.0 | 37.0 | 42.0 | 36.0 | 47.0 | 49.0 | 48.0 | 50.0 | 50.0 | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC41 | Lw/unit | Day | 56.2 | 20.0 | 24.0 | 37.0 | 42.0 | 36.0 | 47.0 | 49.0 | 48.0 | 50.0 | 50.0 | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC42 | Lw/unit | Day | 56.2 | 20.0 | 24.0 | 37.0 | 42.0 | 36.0 | 47.0 | 49.0 | 48.0 | 50.0 | 50.0 | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC43 | Lw/unit | Day | 56.2 | 20.0 | 24.0 | 37.0 | 42.0 | 36.0 | 47.0 | 49.0 | 48.0 | 50.0 | 50.0 | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC44 | Lw/unit | Day | 56.2 | 20.0 | 24.0 | 37.0 | 42.0 | 36.0 | 47.0 | 49.0 | 48.0 | 50.0 | 50.0 | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC45 | Lw/unit | Day | 56.2 | 20.0 | 24.0 | 37.0 | 42.0 | 36.0 | 47.0 | 49.0 | 48.0 | 50.0 | 50.0 | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC46 | Lw/unit | Day | 56.2 | 20.0 | 24.0 | 37.0 | 42.0 | 36.0 | 47.0 | 49.0 | 48.0 | 50.0 | 50.0 | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC47 | Lw/unit | Day | 56.2 | 20.0 | 24.0 | 37.0 | 42.0 | 36.0 | 47.0 | 49.0 | 48.0 | 50.0 | 50.0 | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC48 | Lw/unit | Day | 56.2 | 20.0 | 24.0 | 37.0 | 42.0 | 36.0 | 47.0 | 49.0 | 48.0 | 50.0 | 50.0 | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC49 | Lw/unit | Day | 56.2 | 20.0 | 24.0 | 37.0 | 42.0 | 36.0 | 47.0 | 49.0 | 48.0 | 50.0 | 50.0 | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC50 | Lw/unit | Day | 56.2 | 20.0 | 24.0 | 37.0 | 42.0 | 36.0 | 47.0 | 49.0 | 48.0 | 50.0 | 50.0 | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC51 | Lw/unit | Day | 56.2 | 20.0 | 24.0 | 37.0 | 42.0 | 36.0 | 47.0 | 49.0 | 48.0 | 50.0 | 50.0 | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC52 | Lw/unit | Day | 56.2 | 20.0 | 24.0 | 37.0 | 42.0 | 36.0 | 47.0 | 49.0 | 48.0 | 50.0 | 50.0 | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC53 | Lw/unit | Day | 56.2 | 20.0 | 24.0 | 37.0 | 42.0 | 36.0 | 47.0 | 49.0 | 48.0 | 50.0 | 50.0 | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HVAC54 | Lw/unit | Day | 56.2 | 20.0 | 24.0 | 37.0 | 42.0 | 36.0 | 47.0 | 49.0 | 48.0 | 50.0 | 50.0 | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Fueling Area | Lw/m² | Day | 61.0 | 24.8 | 28.8 | 41.8 | 46.8 | 40.8 | 51.8 | 53.8 | 52.8 | 54.8 | 54.8 | - | - | - |
| | | Night | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Fueling Area1 | Lw/m² | Day | 67.0 | | | | | | | | | | | - | - | - |
| | | Night | - | | | | | | | | | | | - | - | - |

# Noise emissions of parking lot traffic

| Name | Parking lot type | Size | Movements per hour | | Road surface | Separated method | Lw,ref |
|---|---|---|---|---|---|---|---|
| | | | Day | Night | | | dB(A) |
| 1 | Visitors and staff | 14 Parking bays | 1.100 | 0.000 | Asphaltic driving lanes | no | 76.2 |
| 2 | Visitors and staff | 13 Parking bays | 1.100 | 0.000 | Asphaltic driving lanes | no | 75.6 |
| 3 | Visitors and staff | 14 Parking bays | 1.100 | 0.000 | Asphaltic driving lanes | no | 76.2 |
| 4 | Visitors and staff | 10 Parking bays | 1.100 | 0.000 | Asphaltic driving lanes | no | 73.0 |
| 5 | Visitors and staff | 11 Parking bays | 1.100 | 0.000 | Asphaltic driving lanes | no | 74.2 |
| 6 | Visitors and staff | 7 Parking bays | 1.100 | 0.000 | Asphaltic driving lanes | no | 71.5 |
| 7 | Visitors and staff | 10 Parking bays | 1.100 | 0.000 | Asphaltic driving lanes | no | 73.0 |
| 8 | Visitors and staff | 12 Parking bays | 1.100 | 0.000 | Asphaltic driving lanes | no | 75.0 |
| 9 | Visitors and staff | 8 Parking bays | 1.100 | 0.000 | Asphaltic driving lanes | no | 72.0 |
| 10 | Visitors and staff | 10 Parking bays | 1.100 | 0.000 | Asphaltic driving lanes | no | 73.0 |
| 12 | Visitors and staff | 15 Parking bays | 1.100 | 0.000 | Asphaltic driving lanes | no | 76.7 |
| 13 | Visitors and staff | 120 Parking bays | 1.100 | 0.000 | Asphaltic driving lanes | no | 88.9 |
| 14 | Visitors and staff | 11 Parking bays | 1.100 | 0.000 | Asphaltic driving lanes | no | 74.2 |
| 15 | Visitors and staff | 3 Parking bays | 1.100 | 0.000 | Asphaltic driving lanes | no | 67.8 |
| 16 | Visitors and staff | 17 Parking bays | 1.100 | 0.000 | Asphaltic driving lanes | no | 77.6 |
| 17 | Visitors and staff | 6 Parking bays | 1.100 | 0.000 | Asphaltic driving lanes | no | 70.8 |
| 17 | Visitors and staff | 16 Parking bays | 1.100 | 0.000 | Asphaltic driving lanes | no | 77.2 |

# Receiver list

| No. | Receiver name | Building side | Floor | Limit | | Level w/o NP | | Level w NP | | Difference | | Conflict | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Day | Night | Day | Night | Day | Night | Day | Night | Day | Night |
| | | | | dB(A) | | dB(A) | | dB(A) | | dB | | dB | |
| 1 | | - | GF | - | - | 0.0 | 0.0 | 49.0 | 2.3 | 49.0 | 2.3 | - | - |
| 2 | 2 | - | GF | - | - | 41.2 | 8.1 | 50.1 | 8.1 | 8.9 | 0.0 | - | - |
| 3 | | - | GF | - | - | 36.2 | 11.9 | 39.7 | 11.9 | 3.5 | 0.0 | - | - |
| 4 | 3 | - | GF | - | - | 36.8 | 7.8 | 39.0 | 7.8 | 2.2 | 0.0 | - | - |
| 5 | 4 | - | GF | - | - | 36.9 | 6.2 | 43.0 | 6.2 | 6.1 | 0.0 | - | - |
| 6 | 6 | - | GF | - | - | 40.1 | 1.7 | 54.2 | 1.4 | 14.1 | -0.3 | - | - |

# APPENDIX G

# GROUNDBORNE VIBRATION WORKSHEETS

| GROUNDBORNE VIBRATION ANALYSIS | | | |
|---|---|---|---|
| Project: | 19-0001 Beaumont Village | | Date: 11/25/20 |
| Source: | Large Bulldozer | | |
| Scenario: | Unmitigated | | |
| Location: | Residential to 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 = | 100.00 | 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 = | 0.011 | IN/SEC | OUTPUT IN BLUE |

## GROUNDBORNE VIBRATION ANALYSIS

| | | | |
|---|---|---|---|
| Project: | 19-0001 Beaumont Village | | Date: 11/25/20 |
| Source: | Vibratory Roller | | |
| Scenario: | Unmitigated | | |
| Location: | Residential to 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 = | 100.00 | 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 = | 0.026 | IN/SEC | OUTPUT IN BLUE |

**GANDDINI GROUP INC.**

714.795.3100 | ganddini.com