

Noise Impact Analysis

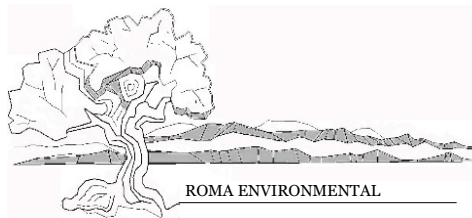
Garbani 10 Project

City of Menifee, California

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I. INTRODUCTION AND SETTING

A. Purpose and Objectives

The purpose of this report is to provide an assessment of the noise impacts that may occur with the development of the proposed Garbani 10 project and to identify mitigation measures that may be necessary to reduce those impacts. The objectives of the study include:

- documentation of existing noise conditions
- discussion of noise modeling methodology and procedures
- analysis of noise generated by the construction of the project
- analysis and discussion of potential traffic noise impacts to the proposed project
- analysis of noise affecting nearby sensitive receptors due to increased traffic produced by the project
- recommendations for mitigation measures

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

B. Project Location

The proposed project is located at the southwestern corner of the intersection of Garbani Road and Sherman Road in the City of Menifee. The general plan land use designation for the site is Hillside RR5/R2.1-5 DU/AC. Site APNs include: 360-350-004 and 360-350-005. The vicinity map showing the project location is provided on Figure 1.

C. Project Description

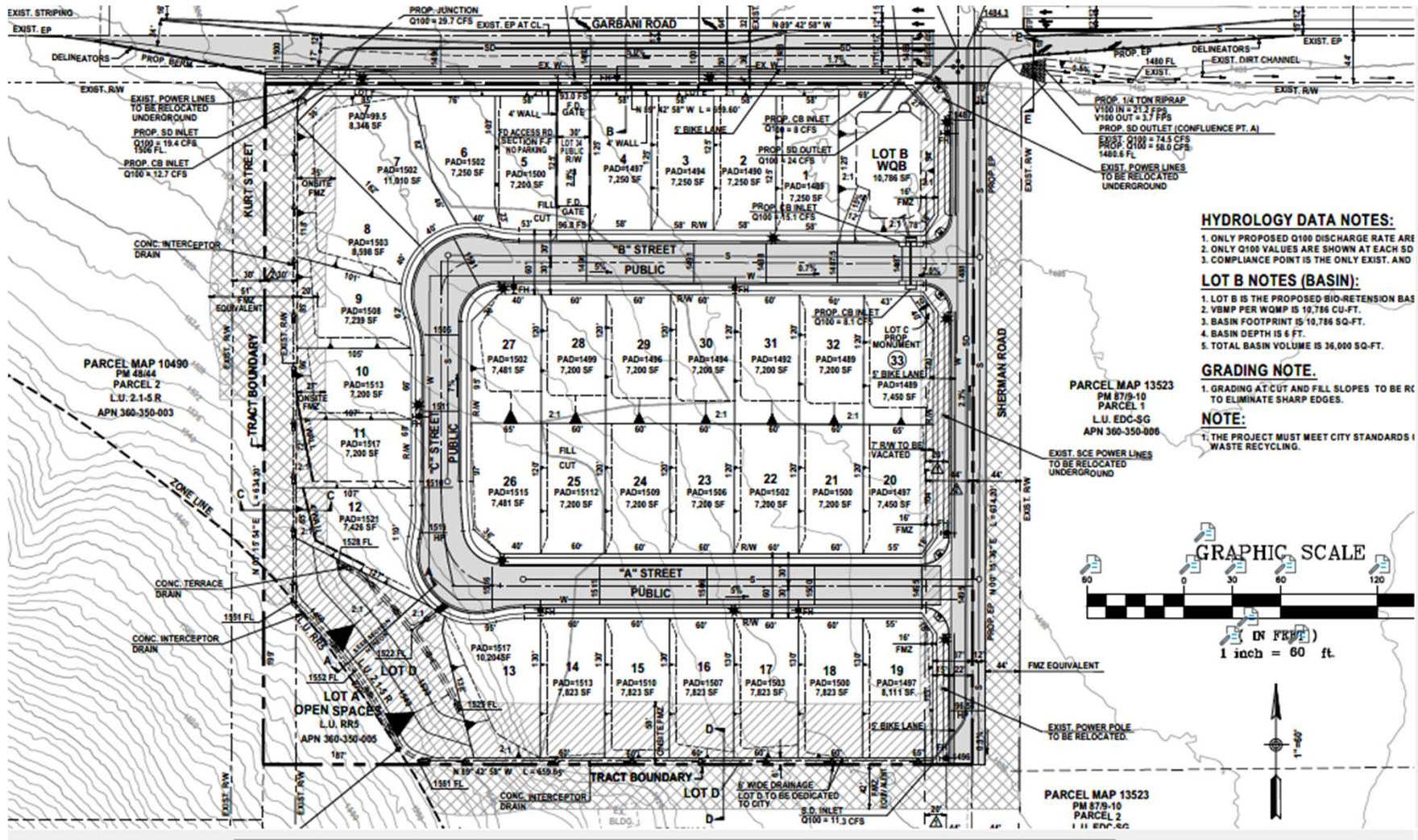
The proposed project is the development of an approximately 10.27 gross (8.52 net) acre project site with 33 single-family detached residential dwelling units. The project site plan is shown on Figure 2. Off-site improvements are to include an extension of a sewer line easterly in Garbani Road from the project site (approximately 1,000 feet).

Figure 1
Project Location Map



Google Earth

Figure 2
Site Plan



II. NOISE AND GROUNDBORNE VIBRATION FUNDAMENTALS

A. 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 (L_{dn}). 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. L_{dn} 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 Technical Supplement to the California Department of Transportation's Traffic Noise Analysis Protocol for New Highway and Reconstruction Projects (2013).

A. Groundborne Vibration Fundamentals

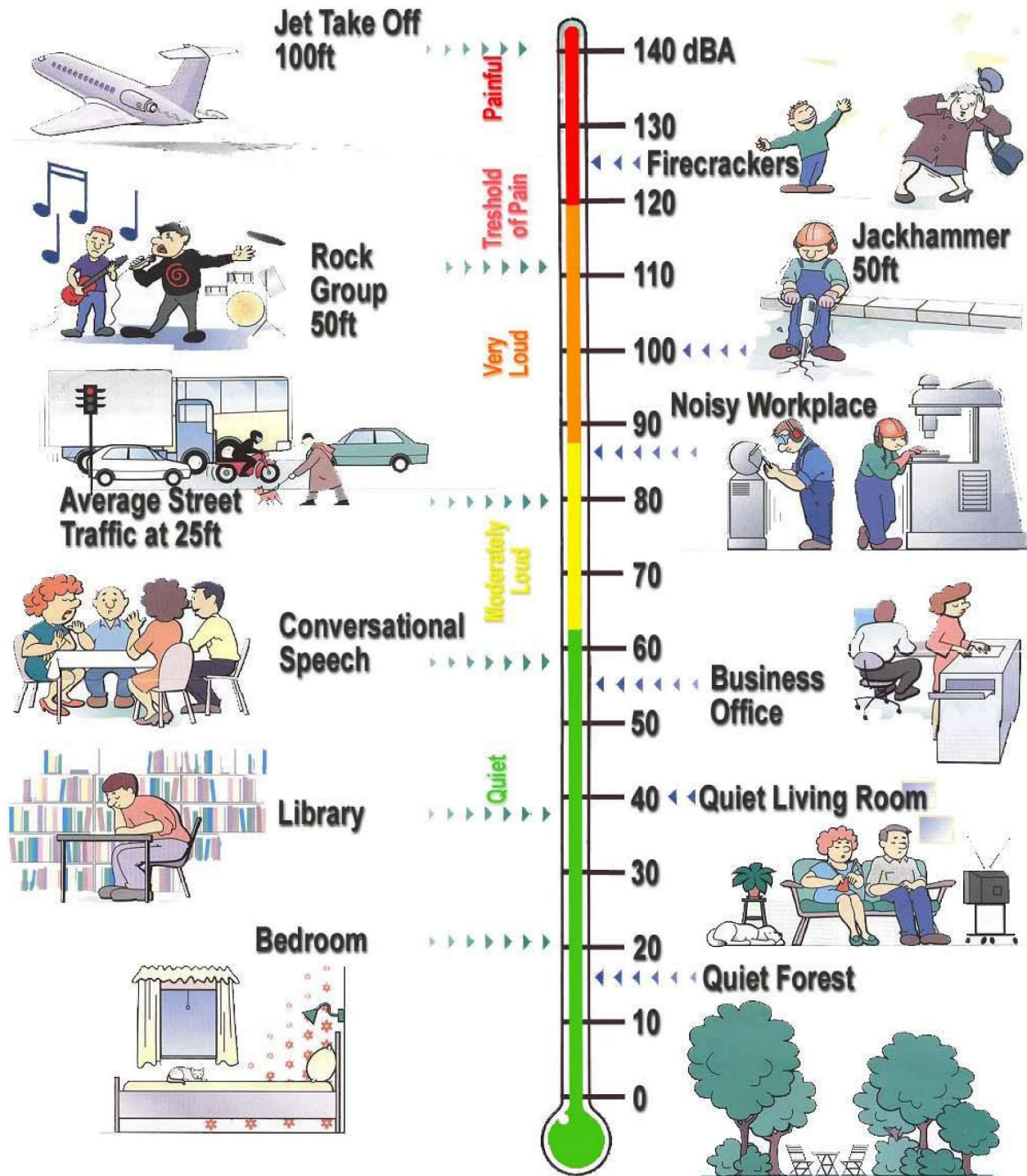
The way in which vibration is transmitted through the earth is called propagation. Propagation of earthborn vibrations is complicated and difficult to predict because of the endless variations in the soil through which waves travel. There are three main types of vibration propagation: surface, compression, and shear waves. Surface waves, or Raleigh waves, travel along the ground's surface. These waves carry most of their energy along an expanding circular wave front, similar to ripples produced by throwing a rock into a pool of water. Compression waves, or P-waves, are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal (i.e., in a "push-pull" fashion). P-waves are analogous to airborne sound waves. Shear waves, or S-waves, are also body waves that carry energy along an expanding spherical wave front. However, unlike P-waves, the particle motion is transverse or "side-to-side and perpendicular to the direction of propagation".

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

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

PPV is appropriate for evaluating the potential of building damage and VdB is commonly used to evaluate human response. Decibel notation acts to compress the range of numbers required in measuring vibration. Similar to the noise descriptors, L_{eq} and L_{max} can be used to describe the average vibration and the maximum vibration level observed during a single vibration measurement interval.

Figure 3
Common Noise Levels



III. EXISTING NOISE ENVIRONMENT

A. Existing Land Uses and Sensitive Receptors

The project site is bounded by Garbani Road to the north and vacant land to the east, west and south. There are nearby single-family residential dwelling units to the north, west, and south. The nearest sensitive receptors to the project site are the single-family detached residential dwelling unit located just south of the project site and the single-family detached residential dwelling units located approximately 70 feet north of the project site (across Garbani Road).

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.

B. Ambient Noise Measurements

An American National Standards Institute (ANSI Section S14 1979, Type 1) Larson Davis model LxT sound level meter was used to document existing ambient noise levels. Three 10-minute daytime noise measurement was taken between 12:15 PM and 1:13 PM on November 7, 2017. Ambient noise levels ranged between 42-51 dBA L_{eq} . Measurement field note sheets are presented in Appendix C.

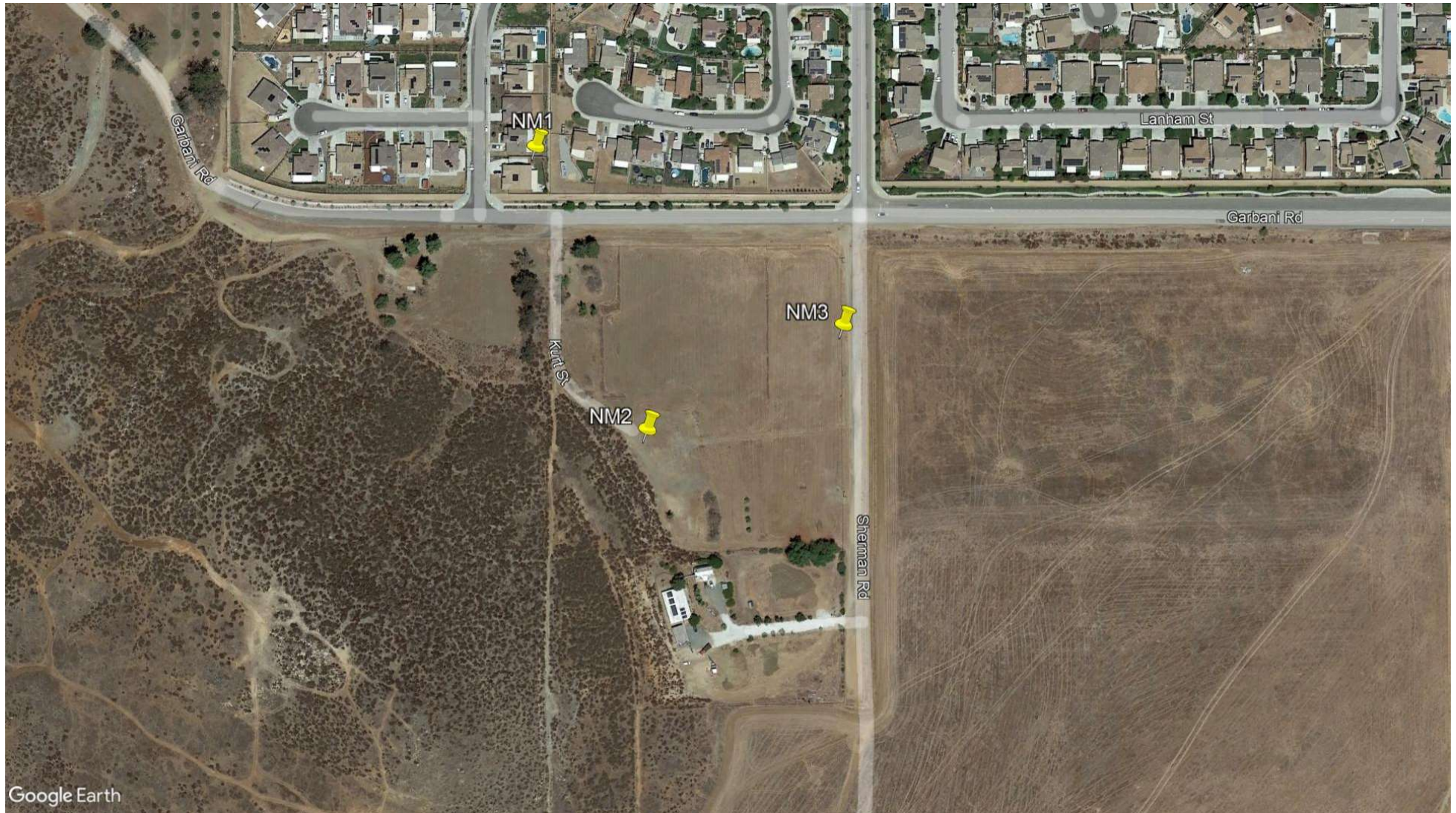
As shown on Figure 4, the noise measurements were taken near single family residential dwelling units to the north and southeast and along the project's western property line. The dominant noise in the project area was from aircraft. Other noise sources included background noise associated with the Interstate-215 Freeway, bird song, and distant gardening equipment.

Table 1. Measured Noise Levels (dBA)

Site Location	Time Started	Leq	Lmax	L(2)	L(8)	L(25)	L(50)
STNM1	12:15 PM	42.3	51.4	49.1	46.4	43.2	39.5
STNM2	12:40 PM	45.7	63.3	55.0	50.4	43.6	39.3
STNM3	1:03 PM	51.1	66.4	61.3	56.0	46.1	42.9

Note: Noise measurements performed on November 7, 2017.

Figure 4
Noise Measurement Location Map



IV. REGULATORY SETTING

A. Noise

A. Federal Regulations

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.

B. State Regulations

State of California General Plan Guidelines 2003

Though not adopted by law, the State of California General Plan Guidelines 2003, published by the California Governor's Office of Planning and Research (OPR) (OPR Guidelines), provide 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 City of Menifee utilizes these guidelines while preparing and updating their Land Use Plans.

State of California Building Code

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

C. Local Regulations

City of Menifee General Plan

The City of Menifee adopted their General Plan in 2013. The General Plan sets the long-term goals and policies that decision makers use to guide the growth and development in the City; and the Noise Element establishes the goals and policies associated with noise exposure within the City. City of Menifee goals and policies from the Noise Element of the General Plan are presented below.

Goal & Policies

Goal N-1: Noise-sensitive land uses are protected from excessive noise and vibration exposure.

- **N-1.1:** Assess the compatibility of proposed land uses with the noise environment when preparing, revising, or reviewing development project applications.
- **N-1.2:** Require new projects to comply with the noise standards of local, regional, and state building code regulations, including but not limited to the city's Municipal Code, Title 24 of the California Code of Regulations, the California Green Building Code, and subdivision and development codes.
- **N-1.3:** Require noise abatement measures to enforce compliance with any applicable regulatory mechanisms, including building codes and subdivision and zoning regulations, and ensure that the recommended mitigation measures are implemented.
- **N-1.4:** Regulate the control of nuisances, such as residential party noise and barking dogs, through the city's Municipal Code.

- **N-1.5:** Protect agricultural uses from noise complaints that may result from routine farming practices.
- **N-1.6:** Coordinate with the County of Riverside and adjacent jurisdictions to minimize noise impacts from adjacent land uses along the city's boundaries, especially its rural edges.
- **N-1.7:** Mitigate exterior and interior noises to the levels listed in the Table 2 to the extent feasible, for stationary sources adjacent to sensitive receptors:

Table 2. Stationary Noise Standards

Land Use (Residential)	Interior Standards	Exterior Standards
10 p.m. - 7 a.m.	40 Leq (10 minute)	45 Leq (10 minute)
7 a.m. - 10 p.m.	55 Leq (10 minute)	65 Leq (10 minute)

- **N-1.8:** Locate new development in areas where noise levels are appropriate for the proposed uses. Consider federal, state, and city noise standards and guidelines as a part of new development review.
- **N-1.9:** Limit the development of new noise-producing uses adjacent to noise-sensitive receptors and require that new noise-producing land be are designed with adequate noise abatement measures.
- **N-1.10:** Guide noise-tolerant land uses into areas irrevocably committed to land uses that are noise-producing, such as transportation corridors adjacent to the I-215 or within the projected noise contours of any adjacent airports.
- **N-1.11:** Discourage the siting of noise-sensitive uses in areas in excess of 65 dBA CNEL without appropriate mitigation.
- **N-1.12:** Minimize potential noise impacts associated with the development of mixed-use projects (vertical or horizontal mixed-use) where residential units are located above or adjacent to noise-generating uses.
- **N-1.13:** Require new development to minimize vibration impacts to adjacent uses during demolition and construction.

Policies: Transportation Noise

- **N-1.14:** Minimize vibration impacts on people and businesses near light and heavy rail lines or other sources of ground-borne vibration through the use of setbacks and/or structural design features that reduce vibration to levels at or below the guidelines of the Federal Transit Administration. Require new development within 100 feet of rail lines to demonstrate, prior to project approval, that vibration experienced by residents and vibration-sensitive uses would not exceed these guidelines.
- **N-1.15:** Employ noise mitigation practices and materials, as necessary, when designing future streets and highways, and when improvements occur along existing road segments. Mitigation measures should emphasize the establishment of natural buffers or setbacks between the arterial roadways and adjoining noise-sensitive areas.
- **N-1.16:** Collaborate with transportation providers, including airport owners, the Federal Aviation Administration, Caltrans, Southern California Association of Governments, neighboring jurisdictions, and railroad owners and operators, to

prepare, maintain, and update transportation-related plans that minimize noise impacts and identify appropriate mitigation measures.

- **N-1.17:** Prevent the construction of new noise-sensitive land uses within airport noise impact zones. New residential land uses within the 65 dB CNEL contours of any public-use or military airports, as defined by the Riverside County Airport Land Use Commission, shall be prohibited.
- **N-1.18:** Work with the Southern California Regional Rail Authority and railroad owners and operators to reduce the noise impacts on noise-sensitive uses adjacent to railroad tracks.
- **N-1.19:** Monitor proposals for future transit systems and require noise control to be considered in the selection of transportation systems that may affect the city.
- **N-1.20:** Adhere to any applicable Riverside County Airport Land Use Commission land use compatibility criteria, including density, intensity, and coverage standards.

Goal N-2: Minimal noise spillover from noise-generating uses, such as agriculture, commercial, and industrial uses into adjoining noise-sensitive uses.

2. City of Menifee Municipal Ordinance

9.0215.060(C) Construction-Related Exemptions

Pursuant to its police power, the City of Menifee has established a Noise Ordinance which is intended to establish city-wide standards for the regulation noise. It is made clear in the ordinance that the ordinance standards are not intended to establish thresholds of significance for the purpose of any analysis required by the California Environmental Quality Act and no such thresholds are established.

Section 9.0215.060(C) allows a property developer to apply for a construction exemption to the City's Stationary Noise Standards. Exceptions may be requested from the standards set forth in Section 9.215.060 of this chapter and may be characterized as construction-related, single event or continuous events exceptions.

1. Private construction projects, with or without a Building Permit, located one-quarter of a mile or more from an inhabited dwelling.
2. Private construction projects, with or without a building permit, located within one-quarter of a mile from an inhabited dwelling, shall be permitted Monday through Saturday, except nationally recognized holidays, 6:30 a.m. to 7:00 p.m., or specified in Section 8.01.010. There shall be no construction permitted on Sunday or nationally recognized holidays unless approval is obtained from the City Building Official or City Engineer.
3. Construction-related exceptions. If construction occurs during off hours or exceeds noise thresholds, an application for a construction-related exception shall be made using the temporary use application provided by the Community Development Director in Chapter 9.115 of this Title. For construction activities on

Sunday or nationally recognized holidays, Section 8.01.010 of this Code shall prevail.

9.0215.060(D) General Sound Level Standards

No person shall create any sound, or allow the creation of any sound, on any property that causes the exterior and interior sound level on any other occupied property to exceed the sound level standards set forth in Table 9.215.060-1, which are identical to those provided in the Noise Element of the General Plan as presented in Table 2, above.

The City of Menifee has not established specific criteria for the analysis of groundborne vibration impacts in light of CEQA thresholds. Caltrans has prepared one of the most comprehensive manuals (Caltrans 2020) regarding the analysis of groundborne vibration. It contains reasonable standards for both the potential to be annoying and the potential to result in structural damage. As shown in Table 3, vibration is considered to be distinctly perceptible at a PPV of 0.04 in/second and strongly perceptible at 0.10 peak particle velocity (PPV). Table 4 shows that the threshold at which there is a risk to “architectural” damage to historic and some older buildings is a peak particle velocity (PPV) of 0.25 in/sec, at older residential structures a PPV of 0.3 in/sec, and at new residential structures and modern commercial/industrial buildings a PPV of 0.5 in/sec.

Therefore, impacts would be significant if construction activities result in groundborne vibration of 0.3 PPV or higher at residential structures and/or a PPV of 0.5 or higher at commercial structures. Annoyance is temporary in nature and is not considered significant unless it is strongly perceptible and disturbs sleep or the use of sensitive equipment (approximately 0.1 PPV).

Table 3. Guideline Vibration Annoyance Potential Criteria

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

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

Notes:

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

Table 4. Guideline Vibration Damage Potential Criteria

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	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

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

Notes:

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

V. IMPACT ANALYSIS

A. Noise Impacts

1. Construction Noise

Existing single-family detached residential dwelling units located north, south, and west of the project site may be affected by short-term noise impacts associated with the transport of workers, the movement of construction materials to and from the project site, ground clearing, excavation, grading, and building activities.

On-site Construction

Project generated 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. Site grading and preparation is expected to produce the highest sustained construction noise levels. Expected operating cycles for construction equipment may involve one or two minutes of full power operation followed by three to four minutes at lower power settings.

Construction noise associated with the proposed project was calculated at the property line of nearby 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: the reference sound level, distance to each sensitive receiver, equipment usage, percent usage factor, and baseline parameters for the project site. Construction noise worksheets are provided in Appendix D.

Reference sound levels and typical usage factors for typical construction equipment compiled by the U.S. Department of Transportation are presented in Table 5. 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 Technical Memorandum prepared for the proposed project (Roma Environmental, 2022). For construction noise purposes, the distance measured from the project site to sensitive receptors was assumed to be the acoustical center of the project site to the property line of residential properties with existing residential buildings.

The loudest construction noise level at each project property line is presented Table 6. The City of Menifee has not adopted a numerical threshold that identifies what a substantial increase would be. For purposes of this analysis, the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment (2006) criteria has been used to establish significance thresholds. Per the FTA, daytime construction noise levels should not exceed 80 dBA Leq for an 8-hour period at residential uses and 85 dBA Leq for an 8-hour period at commercial uses.

Table 5. CCA/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
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	Yes	20	90	90	212

Table 5. CCA/T Equipment Noise Emissions and Acoustical Usage Factor Database Cont.

Equipment Description	Impact Device?	Acoustical Use Factor (%)	Spec. Lmax @ 50ft (dBA, slow)	Actual Measured Lmax @ 50ft (dBA, slow)	No. of Actual Data Samples (Count)
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
Pumps	No	50	77	81	17
Refrigerator Unit	No	100	82	73	3
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
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 6. On-Site Construction Noise Levels

Project Site Property Line	Affected Land Use	Loudest Construction Noise Level (dBA, Leq)
North	Residential	70.3
South	Residential	72.3
East	Residential	72.6
West	Vacant	72

As shown in Table 6, construction noise levels will not exceed the FTA 8-hour criteria of 85 dBA Leq. Furthermore, Section 9.0215.060(C) of the City's Municipal Code allows a property developer to apply for a construction exemption to the City's Stationary Noise Standards. If approved, project generated noise that complies with the following would be exempt from the Municipal Code noise level standards:

Site preparation for Monday through Saturday, except nationally recognized holidays, 6:30 AM to 7:00 PM. There shall be no construction permitted on Sunday or nationally recognized holidays unless approval is obtained from the City Building Official or City Engineer. Impacts would be less than significant. No mitigation measures are required.

Impacts related to project construction would be less than significant. No mitigation measures are required. If desired, measures to minimize noise exposure to nearby receptors are provided in Section VI of this report.

2. Noise Impacts to Off-Site Receptors Due to Project Generated Traffic

A traffic study was not prepared for the proposed project. Per the Institute of Transportation Engineers Trip Generation Manual 11th Edition, the project is expected to generate 311 average daily trips. Project vehicle trips were modeled on Garbani Road, using the FHWA Traffic Noise Prediction Model.

Existing traffic volumes were sourced from the Traffic Study prepared for the Millcreek Promenade project (Kunzman 2018a). Trip distribution was assumed to match the single family detached residential trip distribution-without Holland Overpass shown in the Millcreek Promenade traffic study (2018) as it is located directly east of the proposed project. Existing and Existing Plus Project worksheets are provided in Appendix E.

Table 7 compares the Existing and the Existing Plus Project scenario and shows the change in traffic noise levels as a result of the proposed project. In no case would project generated vehicle traffic cause an increase in ambient noise levels of 1 dB or greater. Considering that it takes a change of 3 dB or more to notice an audible difference in sound levels, project generated vehicle traffic would not result in a substantial increase in ambient noise levels. Therefore, the impact would be considered less than significant.

Table 7. Change in Ambient Noise Levels Due to Project Generated Vehicle Traffic

Roadway	Segment	Modeled Noise Levels (dBA CNEL) ¹		Change in Noise Level	Substantial Increase?
		Existing Without Project at 50 feet	Existing Plus Project at 50 feet		
Bradley Road	North of Newport	68.9	68.9	0.0	No
Bradley Road	Newport to Holland Road	72.4	72.4	0.0	No
Bradley Road	Holland Road to Craig Avenue	69.6	69.6	0.0	No
Bradley Road	South of Craig Avenue	66.5	66.5	0.0	No
Craig Avenue	West of Bradley Road	59.7	59.7	0.0	No
Garbani Road	Sherman Road to Haun Road	66.2	66.3	0.1	No
Haun Road	Newport Road to Holland Road	77.3	77.4	0.0	No
Haun Road	Holland Road to Garbani Road	72.4	72.4	0.0	No
Haun Road	Garbani Road to Scott Road	73.1	73.1	0.0	No
Haun Road	West of Bradley Road	72.5	72.5	0.0	No
Menifee Road	Newport Road to Holland Road	74.1	74.1	0.0	No
Newport Road	West of Bradley Road	77.5	77.5	0.0	No
Newport Road	Haun Road to I-215	79.6	79.7	0.0	No
Newport Road	I-215 to Antelope	79.7	79.7	0.0	No
Newport Road	Antelope Road to Menifee Road	78.6	79.5	0.9	No
Newport Road	East of Menifee Road	79.5	79.5	0.0	No
Scott Road	West of Haun	73.7	73.7	0.0	No
Scott Road	Haun Road to I-215	76.0	76.0	0.0	No
Scott Road	I-215 to Antelope Road	79.7	79.7	0.0	No
Scott Road	Antelope Road to Menifee Road	77.2	77.2	0.0	No
Sherman Road	Tupelo Street to Garbani Road	57.9	58.0	0.1	No
Tupelo Street	Bradley Road to Sherman Road	58.3	58.4	0.1	No

Notes:

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

3. Noise Impacts to the Proposed Project

Roadways adjacent to the proposed project include Garbani Road and Sherman Road. Garbani Road is designated as a “Major” with four lanes and a right-of-way of 128-feet and Sherman Road is classified as a “Collector” with a right-of-way of 74 feet in the City of Menifee General Plan Circulation Element (2014). Future traffic noise associated with Garbani Road was modeled to assess potential noise impacts to the proposed project. Analysis of a roadway designated as a “Collector” is not required as they are not considered to be acoustically significant. The recently updated City of

Menifee General Plan Noise Element provides future traffic noise contours for nearby Interstate 215. These contours show that the project site is not within a 60 CNEL or higher noise contour associated with Interstate 215.

Future buildout noise associated with Garbani Road was modeled per Riverside Industrial Hygiene Guidelines for Determining and Mitigating Traffic Noise Impacts to Residential Structures and of City of Menifee Traffic Impact Analysis Guidelines, Attachment B "Roadway Segment Capacity Thresholds" August 2015. The projected Average Daily Trip (ADT) Level of Service "C" design capacity (also known as future build-out daily traffic volumes) for Garbani Road is 27,300.

SoundPLAN modeling conducted to calculate noise levels associated with the future Level of Service C for Garbani Road. SoundPLAN modeling data is included as Appendix F. With inclusion of the recommended barriers shown in Figure 5, future traffic noise levels at the proposed residential lots are expected to reach up to 65 dBA CNEL at the first-floor level and up to 74 CNEL at the second story level.

Normal residential construction methods that provide air conditioning and/or air circulation systems (allowing for closed windows), typically provide 20 dB of exterior to interior noise reduction, interior noise levels of proposed single-family residential units that are not exposed to exterior noise levels higher than 65 dBA CNEL are not expected to exceed 45 CNEL. Second floor windows and sliding glass doors of homes facing Garbani Road will need to have STC levels of at least 32 (Lot 1), and 31 (Lots 2-7). Second floor east facing windows on Lot 1 will also need an STC rating of at least 26.

Impacts would be less than significant with implementation of the following design measures.

1. The shown barriers should be installed at the edge of pad at the indicated height above the highest grade of the adjacent roadway. Barriers must be solid, without holes or cracks. Barriers should extend from the ground surface. Barriers may be a combination of earthen barrier and wall. These requirements will be added as a note on the tentative map and construction plans.
2. All windows and sliding glass doors facing Garbani Road shall have upgraded windows installed as follows: Lot 1 – 32 STC, and Lots 2-7 – 31 STC. East facing windows on Lot 1 will also need to have an STC level of at least 26.

A. Groundborne Vibration

The most vibratory pieces of equipment expected to be utilized on the project site include a vibratory roller and a large bulldozer. The use of a vibratory roller and/or a large bulldozer may be used as close as 95 feet to closest existing structure to the north, and as close as 35 feet to the nearest existing structure to the south. There are no existing structures on the parcels east and west of the project site.

Groundborne vibration levels associated with the use of a vibratory roller could reach up to 0.028 PPV at existing structures north of the project site and up to 0.127 PPV at the nearest existing structure located south of the project site.

Groundborne vibration levels associated with the use of a large bulldozer could reach up to 0.012 PPV at existing structures north of the project site and up to 0.054 PPV at the nearest existing structure located south of the project site. Groundborne vibration estimates worksheets are provided in Appendix G.

The threshold at which there is a risk to “architectural” damage to historic and some older buildings is a peak particle velocity (PPV) of 0.25 in/sec, at older residential structures a PPV of 0.3 in/sec, and at new residential structures and modern commercial/industrial buildings a PPV of 0.5 in/sec. A vibratory roller generates a PPV of approximately 0.21 at a distance of 25 feet, which is the more conservative criteria for possible structural damage. Because there are no structures within 25 feet of the proposed project area, impacts related to structural damage would not be significant. No mitigation is required.

As stated previously, vibration is considered to be distinctly perceptible at a PPV of 0.04 in/second and strongly perceptible at 0.10 peak particle velocity (PPV). The use of a vibratory roller within 41 feet of existing structures would be strongly perceptible and use of large bulldozer within 23 feet of an existing structure would be strongly perceptible. Use of a vibratory roller along the project’s southern boundary may result in annoyance to persons inside or in the vicinity of the existing structures to the south of the project site. However, construction activities will be limited to daytime hours and the use of vibratory rollers would be limited. Therefore, impacts related to annoyance would be less than significant. No mitigation is required.



Figure 5

Future Traffic Noise Levels

The shown barriers should be installed at the edge of pad at the indicated height above the highest grade of the adjacent roadway. Barriers must be solid, without holes or cracks. Barriers should extend from the ground surface. Barriers may be a combination of earthen barrier and wall.

The above note and the barriers on this exhibit, will be added to the tentative map and construction plans.

Signs and symbols

- Partial Lot Lines
- Planned wall
- Receiver
- Road Emission Line

1 : 150

0 37.5 75 150 225 300 feet

Roma Environmental

VI. MEASURES TO REDUCE IMPACTS

A. Construction Measures to Avoid or Reduce less than Significant Impacts

In addition to adherence to the City of Menifee Municipal Code which limits the construction hours of operation, the following measures are recommended to reduce construction noise emanating from the proposed project:

1. During all project site excavation and grading on-site, construction contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturer standards.
2. The contractor shall place all stationary construction equipment so that emitted noise is directed away from the noise sensitive receptors nearest the project site.
3. Equipment shall be shut off and not left to idle when not in use.
4. The contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise sources and sensitive receptors nearest the project site during all project construction as is feasible.
5. The project proponent shall mandate that the construction contractor prohibit the use of music or sound amplification on the project site during construction.
6. The construction contractor shall limit haul truck deliveries to the same hours specified for construction equipment.

B. Mitigation Measures to Avoid or Reduce Potentially Significant Impacts

1. A barrier six feet in elevation higher than the adjacent road surface shall be constructed along the northern lot lines as shown in Figure 5. The barrier shall wrap around the corners lot 7 and along the eastern side yard of Lot 1. The barrier must be solid, extending from the ground surface, without holes or cracks. The barrier may be a combination of earthen berm and concrete wall.
2. All windows and sliding glass doors facing Garbani Road shall have upgraded windows installed as follows: Lot 1 – 32 STC, and Lots 2-7 – 31 STC. East facing windows on lot 1 will also need STC ratings of at least 26.

VII. REFERENCES

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APPENDICES

Appendix A – List of Acronyms

Appendix B – Definitions of Acoustical Terms

Appendix C – Noise Measurement Field Sheets

Appendix D – Construction Noise Modeling Output

Appendix E – FHWA Spreadsheet

Appendix F – SoundPLAN Input/Output

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
L_{dn}	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

Definitions of Acoustical Terms

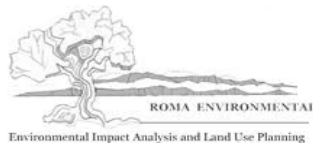
Term	Definition
Decibel, dB	A logarithmic unit of noise level measurement that relates the energy of a noise source to that of a constant reference level; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
Frequency, Hertz	In a function periodic in time, the number of times that the quantity repeats itself in one second (i.e., the number of cycles per second).
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.
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.
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.
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.
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.
L _{max} , L _{min}	L _{max} 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. L _{min} is the minimum level.
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.
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.

APPENDIX C

Noise Measurement Field Sheets

Noise Measurement
Field Data

Project Name:	<u>Roma Env. 17 -07. City of Menifee.</u>	Date:	<u>7-Nov-17</u>
Project #:	<u>17-07</u>		
Noise Measurement #:	<u>NM1</u>	<u>3099 LxT_Data077.xlsx</u>	Technician: <u>Ian Edward Gallagher</u>
Nearest Address or Cross Street:	<u>Sherman Road & Garbani Road</u>		
Site Description (Type of Existing Land Use and any other notable features)	<u>Empty Field, rocks, sand and weeds, older ranch style residence to south, newer residences to the North, 215 FWY 1100yds East</u>		
Weather:	<u>Mostly clear, sunny, cloud cover to the East</u>	Settings:	SLOW <u>FAST</u> (Circle one)
Temperature:	<u>72 deg F</u>	Wind:	<u>calm - 2 mph</u>
		Humidity:	<u>41%</u>
			<u>Flat</u>
Start Time:	<u>12:15 PM</u>	End Time:	<u>12:25 PM</u>
		Run Time:	<u>10 minutes</u>
Leq:	<u>42.3 dB</u>	Primary Noise Source:	<u>Constant noise of aircraft in the area, both propeller and jet, busy skies overhead</u>
Lmax	<u>51.4 dB</u>		<u>Overhead propellor plane at 12:19PM</u>
L2	<u>49.1 dB</u>	Secondary Noise Sources:	<u>Bird song, crows and kestrels, general wildlife</u>
L8	<u>46.4 dB</u>		<u>Distant gardening activity happening in residential area, lawn mower, weed</u>
L25	<u>43.2 dB</u>		<u>whacker and leaf blower, far enough away but still audible.</u>
L50	<u>39.5 dB</u>		<u>Distant 215 freeway ambiance, freeway ~1100yards East of site</u>
NOISE METER:	<u>SoundTrack LxT Class 1</u>	CALIBRATOR:	<u>Larson Davis CAL250 Acoustic Calibrator</u>
MAKE:	<u>Larson Davis</u>	MAKE:	<u>Larson Davis</u>
MODEL:	<u>LxT1</u>	MODEL:	<u>Cal250</u>
SERIAL NUMBER:	<u>3099</u>	SERIAL NUMBER:	<u>2723</u>
FACTORY CALIBRATION DATE:	<u>6/23/2017</u>	FACTORY CALIBRATION DATE:	<u>6/9/2017</u>
FIELD CALIBRATION DATE:	<u>11/7/2017</u>		



Noise Measurement
Field Data

Additional Notes/Sketch



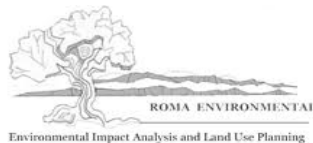
NM1 looking East towards newer residences



NM1 looking West parallel to Garbani Road

Noise Measurement
Field Data

Project Name:	<u>Roma Env. 17 -07. City of Menifee.</u>	Date:	<u>7-Nov-17</u>
Project #:	<u>17-07</u>		
Noise Measurement #:	<u>NM2</u>	Technician:	<u>Ian Edward Gallagher</u>
Nearest Address or Cross Street:	<u>Sherman Road & Garbani Road</u>		
Site Description (Type of Existing Land Use and any other notable features)	<u>Empty Field, rocks, sand and weeds, older ranch style residence to south, newer residences to the North, 215 FWY 1100yds East</u>		
Weather:	<u>Mostly clear, sunny, cloud cover to the East</u>	Settings:	SLOW FAST (Circle one)
Temperature: 72 deg F	Wind: calm - 2 mph	Humidity: 41%	Flat
Start Time: <u>12:40 PM</u>	End Time: <u>12:50PM</u>	Run Time:	<u>10 minutes</u>
Leq: <u>45.7 dB</u>	Primary Noise Source:	<u>Constant noise of aircraft in the area, both propeller and jet, busy skies overhead</u>	
Lmax <u>63.3 dB</u>		<u>Overhead propellor plane at 12:47PM</u>	
L2 <u>55.0 dB</u>	Secondary Noise Sources:	<u>Bird song, crows and kestrels, general wildlife</u>	
L8 <u>50.4 dB</u>		<u>Distant gardening activity happening in residential area, lawn mower, weed</u>	
L25 <u>43.6 dB</u>		<u>whacker and leaf blower, far enough away but still audible.</u>	
L50 <u>39.3 dB</u>		<u>Distant 215 freeway ambiance, freeway ~1100yards East of site</u>	
NOISE METER:	<u>SoundTrack LxT Class 1</u>	CALIBRATOR:	<u>Larson Davis CAL250 Acoustic Calibrator</u>
MAKE:	<u>Larson Davis</u>	MAKE:	<u>Larson Davis</u>
MODEL:	<u>LxT1</u>	MODEL:	<u>Cal250</u>
SERIAL NUMBER:	<u>3099</u>	SERIAL NUMBER:	<u>2723</u>
FACTORY CALIBRATION DATE:	<u>6/23/2017</u>	FACTORY CALIBRATION DATE:	<u>6/9/2017</u>
FIELD CALIBRATION DATE:	<u>11/7/2017</u>		

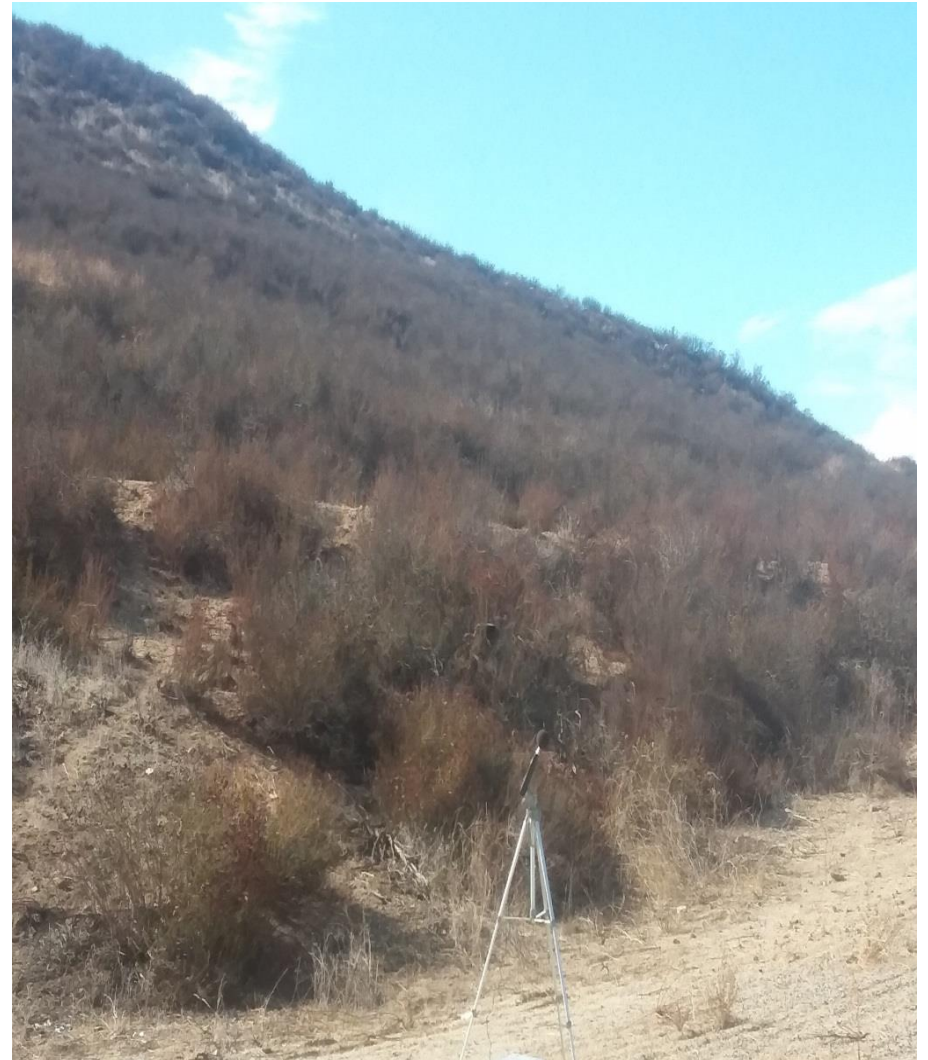


Noise Measurement
Field Data

Additional Notes/Sketch



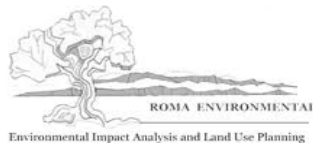
NM2 looking North across site towards Garbani Road



NM2 looking West down the remains of Kurt Street

Noise Measurement
Field Data

Project Name:	<u>Roma Env. 17 -07. City of Menifee.</u>	Date:	<u>7-Nov-17</u>
Project #:	<u>17-07</u>		
Noise Measurement #:	<u>NM3</u>	<u>3099 LxT_Data079.xlsx</u>	Technician: <u>Ian Edward Gallagher</u>
Nearest Address or Cross Street:	<u>Sherman Road & Garbani Road</u>		
Site Description (Type of Existing Land Use and any other notable features)	<u>Empty Field, rocks, sand and weeds, older ranch style residence to south, newer residences to the North, 215 FWY 1100yds East</u>		
Weather:	<u>Mostly clear, sunny, cloud cover to the East</u>	Settings:	SLOW <u>FAST</u> (Circle one)
Temperature: 73 deg F	Wind: <u>calm - 3 mph</u>	Humidity: <u>41%</u>	<u>Flat</u>
Start Time: <u>1:03 PM</u>	End Time: <u>1:13PM</u>	Run Time:	<u>10 minutes</u>
Leq: <u>51.1 dB</u>	Primary Noise Source:	<u>Constant noise of aircraft in the area, both propeller and jet, busy skies overhead</u>	
Lmax <u>66.4 dB</u>		<u>Overhead propellor plane at 1:09PM</u>	
L2 <u>61.3 dB</u>	Secondary Noise Sources:	<u>Bird song, crows and kestrels, general wildlife</u>	
L8 <u>56.0 dB</u>		<u>Distant gardening activity happening in residential area, lawn mower, weed</u>	
L25 <u>46.2 dB</u>		<u>whacker and leaf blower, far enough away but still audible.</u>	
L50 <u>42.9 dB</u>		<u>Distant 215 freeway ambiance, freeway ~1100yards East of site</u>	
NOISE METER:	<u>SoundTrack LxT Class 1</u>	CALIBRATOR:	<u>Larson Davis CAL250 Acoustic Calibrator</u>
MAKE:	<u>Larson Davis</u>	MAKE:	<u>Larson Davis</u>
MODEL:	<u>LxT1</u>	MODEL:	<u>Cal250</u>
SERIAL NUMBER:	<u>3099</u>	SERIAL NUMBER:	<u>2723</u>
FACTORY CALIBRATION DATE:	<u>6/23/2017</u>	FACTORY CALIBRATION DATE:	<u>6/9/2017</u>
FIELD CALIBRATION DATE:	<u>11/7/2017</u>		



Noise Measurement
Field Data

Additional Notes/Sketch



NM3 looking North down Sherman Road towards Garbani Road



NM3 looking West parallel to Garbani Road

APPENDIX D

Construction Noise Modeling Worksheets

Receptor - Residential Property North of the Project Site

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA ¹	Distance to Receptor ³	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA
Demolition									
Excavator	3	81	120	40	1.20	-7.6	0.8	73.4	74.2
Rubber Tired Dozers	2	82	120	40	0.80	-7.6	-1.0	74.4	73.4
Concrete/Industrial Saws	1	90	120	20	0.20	-7.6	-7.0	82.4	75.4
								Log Sum	79.2
Site Preparation									
Rubber Tired Dozers	3	82	120	40	1.20	-7.6	0.8	74.4	75.2
Tractors/Loaders/Backhoes	4	84	120	40	1.60	-7.6	2.0	76.4	78.4
								Log Sum	80.1
Grading									
Excavator	1	81	120	40	0.40	-7.6	-4.0	73.4	69.4
Rubber Tired Dozers	1	82	120	40	0.40	-7.6	-4.0	74.4	70.4
Tractors/Loaders/Backhoes	3	84	120	40	1.20	-7.6	0.8	76.4	77.2
Graders	1	85	120	40	0.40	-7.6	-4.0	77.4	73.4
								Log Sum	79.7
Building Construction									
Cranes	1	81	120	16	0.16	-7.6	-8.0	73.4	65.4
Forklifts ²	3	48	120	40	1.20	-7.6	0.8	40.4	41.2
Generator Sets	1	81	120	50	0.50	-7.6	-3.0	73.4	70.4
Welders	1	74	120	40	0.40	-7.6	-4.0	66.4	62.4
Tractors/Loaders/Backhoes	3	84	120	40	1.20	-7.6	0.8	76.4	77.2
								Log Sum	78.4
Paving									
Pavers	2	77	120	50	1.00	-7.6	0.0	69.4	69.4
Paving Equipment	2	77	120	50	1.00	-7.6	0.0	69.4	69.4
Rollers	2	80	120	20	0.40	-7.6	-4.0	72.4	68.4
								Log Sum	73.9
Architectural Coating									
Air Compressors	1	78	120	40	0.40	-7.6	-4.0	70.4	66.4
								Log Sum	66.4

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006)

(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 Property South of the Project Site

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA ¹	Distance to Receptor ³	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA
Demolition									
Excavator	3	81	120	40	1.20	-7.6	0.8	73.4	74.2
Rubber Tired Dozers	2	82	120	40	0.80	-7.6	-1.0	74.4	73.4
Concrete/Industrial Saws	1	90	120	20	0.20	-7.6	-7.0	82.4	75.4
								Log Sum	79.2
Site Preparation									
Rubber Tired Dozers	3	82	120	40	1.20	-7.6	0.8	74.4	75.2
Tractors/Loaders/Backhoes	4	84	120	40	1.60	-7.6	2.0	76.4	78.4
								Log Sum	80.1
Grading									
Excavator	1	81	120	40	0.40	-7.6	-4.0	73.4	69.4
Rubber Tired Dozers	1	82	120	40	0.40	-7.6	-4.0	74.4	70.4
Tractors/Loaders/Backhoes	3	84	120	40	1.20	-7.6	0.8	76.4	77.2
Graders	1	85	120	40	0.40	-7.6	-4.0	77.4	73.4
								Log Sum	79.7
Building Construction									
Cranes	1	81	120	16	0.16	-7.6	-8.0	73.4	65.4
Forklifts ²	3	48	120	40	1.20	-7.6	0.8	40.4	41.2
Generator Sets	1	81	120	50	0.50	-7.6	-3.0	73.4	70.4
Welders	1	74	120	40	0.40	-7.6	-4.0	66.4	62.4
Tractors/Loaders/Backhoes	3	84	120	40	1.20	-7.6	0.8	76.4	77.2
								Log Sum	78.4
Paving									
Pavers	2	77	120	50	1.00	-7.6	0.0	69.4	69.4
Paving Equipment	2	77	120	50	1.00	-7.6	0.0	69.4	69.4
Rollers	2	80	120	20	0.40	-7.6	-4.0	72.4	68.4
								Log Sum	73.9
Architectural Coating									
Air Compressors	1	78	120	40	0.40	-7.6	-4.0	70.4	66.4
								Log Sum	66.4

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006)

(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 Property Southeast of the Project Site

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA ¹	Distance to Receptor ³	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA
Demolition									
Excavator	3	81	370	40	1.20	-17.4	0.8	63.6	64.4
Rubber Tired Dozers	2	82	370	40	0.80	-17.4	-1.0	64.6	63.6
Concrete/Industrial Saws	1	90	370	20	0.20	-17.4	-7.0	72.6	65.6
								Log Sum	69.4
Site Preparation									
Rubber Tired Dozers	3	82	370	40	1.20	-17.4	0.8	64.6	65.4
Tractors/Loaders/Backhoes	4	84	370	40	1.60	-17.4	2.0	66.6	68.7
								Log Sum	70.3
Grading									
Excavator	1	81	370	40	0.40	-17.4	-4.0	63.6	59.6
Rubber Tired Dozers	1	82	370	40	0.40	-17.4	-4.0	64.6	60.6
Tractors/Loaders/Backhoes	3	84	370	40	1.20	-17.4	0.8	66.6	67.4
Graders	1	85	370	40	0.40	-17.4	-4.0	67.6	63.6
								Log Sum	70.0
Building Construction									
Cranes	1	81	370	16	0.16	-17.4	-8.0	63.6	55.7
Forklifts ²	3	48	370	40	1.20	-17.4	0.8	30.6	31.4
Generator Sets	1	81	370	50	0.50	-17.4	-3.0	63.6	60.6
Welders	1	74	370	40	0.40	-17.4	-4.0	56.6	52.6
Tractors/Loaders/Backhoes	3	84	370	40	1.20	-17.4	0.8	66.6	67.4
								Log Sum	68.6
Paving									
Pavers	2	77	370	50	1.00	-17.4	0.0	59.6	59.6
Paving Equipment	2	77	370	50	1.00	-17.4	0.0	59.6	59.6
Rollers	2	80	370	20	0.40	-17.4	-4.0	62.6	58.6
								Log Sum	64.1
Architectural Coating									
Air Compressors	1	78	370	40	0.40	-17.4	-4.0	60.6	56.6
								Log Sum	56.6

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006)

(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 Property East of the Project Site

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA ¹	Distance to Receptor ³	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA
Demolition									
Excavator	3	81	330	40	1.20	-16.4	0.8	64.6	65.4
Rubber Tired Dozers	2	82	330	40	0.80	-16.4	-1.0	65.6	64.6
Concrete/Industrial Saws	1	90	330	20	0.20	-16.4	-7.0	73.6	66.6
								Log Sum	70.4
Site Preparation									
Rubber Tired Dozers	3	82	330	40	1.20	-16.4	0.8	65.6	66.4
Tractors/Loaders/Backhoes	4	84	330	40	1.60	-16.4	2.0	67.6	69.7
								Log Sum	71.3
Grading									
Excavator	1	81	330	40	0.40	-16.4	-4.0	64.6	60.6
Rubber Tired Dozers	1	82	330	40	0.40	-16.4	-4.0	65.6	61.6
Tractors/Loaders/Backhoes	3	84	330	40	1.20	-16.4	0.8	67.6	68.4
Graders	1	85	330	40	0.40	-16.4	-4.0	68.6	64.6
								Log Sum	70.9
Building Construction									
Cranes	1	81	330	16	0.16	-16.4	-8.0	64.6	56.7
Forklifts ²	3	48	330	40	1.20	-16.4	0.8	31.6	32.4
Generator Sets	1	81	330	50	0.50	-16.4	-3.0	64.6	61.6
Welders	1	74	330	40	0.40	-16.4	-4.0	57.6	53.6
Tractors/Loaders/Backhoes	3	84	330	40	1.20	-16.4	0.8	67.6	68.4
								Log Sum	69.6
Paving									
Pavers	2	77	330	50	1.00	-16.4	0.0	60.6	60.6
Paving Equipment	2	77	330	50	1.00	-16.4	0.0	60.6	60.6
Rollers	2	80	330	20	0.40	-16.4	-4.0	63.6	59.6
								Log Sum	65.1
Architectural Coating									
Air Compressors	1	78	330	40	0.40	-16.4	-4.0	61.6	57.6
								Log Sum	57.6

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006)

(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 Road Modeling Worksheet

Existing Plus Project Traffic Noise

Project: **Garbani 10**
Road: **Bradley Road**
Segment: **north of Newport**

	DAYTIME			EVENING			NIGHTTIME			ADT	12010.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	40.00
										DISTANCE	50.00
INPUT PARAMETERS											
Vehicles per hour	736.57	9.01	3.50	544.33	1.60	1.60	136.34	12.01	4.67	% A	97.40
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	1.84
NOISE CALCULATIONS											
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16	% HT	0.74
ADJUSTMENTS											
Flow	22.35	3.22	-0.88	21.03	-4.29	-4.28	15.02	4.47	0.37		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	68.90
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	65.46
LEQ	64.64	54.46	55.21	63.32	46.95	51.81	57.31	55.71	56.46	Day hour	89.00
										Absorbive?	no
	DAY LEQ	65.46		EVENING LEQ	63.71		NIGHT LEQ	61.31		Use hour?	no
										GRADE dB	0.00
		CNEL	68.90								

Existing Traffic Noise

Project: **Garbani 10**
 Road: **Bradley Road**
 Segment: **Newport Road to Holland Road**

	AUTOS	DAYTIME M.TRUCKS	H.TRUCKS	AUTOS	EVENING M.TRUCKS	H.TRUCKS	AUTOS	NIGHTTIME M.TRUCKS	H.TRUCKS	ADT	10500.00
										SPEED	40.00
										DISTANCE	50.00

INPUT PARAMETERS											
Vehicles per hour	608.13	12.60	21.00	451.50	2.10	3.50	112.00	17.50	29.17	% A	92
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3
NOISE CALCULATIONS											
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16	% HT	5
ADJUSTMENTS											
Flow	21.51	4.68	6.90	20.22	-3.10	-0.89	14.17	6.10	8.32		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	72.38
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	66.79
LEQ	63.80	55.92	62.99	62.51	48.14	55.20	56.46	57.35	64.41	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	66.79		EVENING LEQ	63.38		NIGHT LEQ	65.74		Use hour?	no
										GRADE dB	0.00
		CNEL	72.38								

Existing Plus Project Traffic Noise

Project: **Garbani 10**
Road: **Bradley Road**
Segment: **Newport Road to Holland Road**

	DAYTIME			EVENING			NIGHTTIME			ADT	10530.99
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	40.00
										DISTANCE	50.00
INPUT PARAMETERS											
Vehicles per hour	610.03	12.62	21.01	452.91	2.10	3.50	112.35	17.53	29.18	% A	92.02
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3.00
NOISE CALCULATIONS											
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16	% HT	4.99
ADJUSTMENTS											
Flow	21.53	4.69	6.90	20.23	-3.10	-0.88	14.18	6.11	8.32		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	72.39
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	66.80
LEQ	63.82	55.93	62.99	62.52	48.15	55.21	56.47	57.35	64.41	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	66.80		EVENING LEQ	63.39		NIGHT LEQ	65.74		Use hour?	no
										GRADE dB	0.00
		CNEL	72.39								

Existing Traffic Noise

Project: **Garbani 10**
 Road: **Bradley Road**
 Segment: **Holland Road to Craig Avenue**

	AUTOS	DAYTIME M.TRUCKS	H.TRUCKS	AUTOS	EVENING M.TRUCKS	H.TRUCKS	AUTOS	NIGHTTIME M.TRUCKS	H.TRUCKS	ADT	5500.00
										SPEED	40.00
										DISTANCE	50.00

INPUT PARAMETERS											
Vehicles per hour	318.54	6.60	11.00	236.50	1.10	1.83	58.67	9.17	15.28	% A	92
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3
NOISE CALCULATIONS											
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16	% HT	5
ADJUSTMENTS											
Flow	18.71	1.87	4.09	17.41	-5.91	-3.69	11.36	3.30	5.51		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	69.57
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	63.99
LEQ	61.00	53.11	60.18	59.70	45.33	52.40	53.65	54.54	61.60	Day hour	89.00
										Absorbative?	no
	DAY LEQ	63.99		EVENING LEQ	60.57		NIGHT LEQ	62.93		Use hour?	no
										GRADE dB	0.00
		CNEL	69.57								

Existing Plus Project Traffic Noise

Project: **Garbani 10**
Road: **Bradley Road**
Segment: **Holland Road to Craig Avenue**

	DAYTIME			EVENING			NIGHTTIME			ADT	5555.99
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	40.00
										DISTANCE	50.00
INPUT PARAMETERS											
Vehicles per hour	321.98	6.64	11.02	239.05	1.11	1.84	59.30	9.22	15.30	% A	92.05
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	2.99
NOISE CALCULATIONS											
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16	% HT	4.96
ADJUSTMENTS											
Flow	18.75	1.90	4.09	17.46	-5.89	-3.69	11.40	3.32	5.52		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	69.59
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	64.01
LEQ	61.04	53.14	60.18	59.75	45.36	52.40	53.69	54.57	61.61	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	64.01		EVENING LEQ	60.61		NIGHT LEQ	62.94		Use hour?	no
										GRADE dB	0.00
		CNEL	69.59								

Existing Traffic Noise

Project: **Garbani 10**
 Road: **Bradley Road**
 Segment: **South of Craig Avenue**

	AUTOS	DAYTIME M.TRUCKS	H.TRUCKS	AUTOS	EVENING M.TRUCKS	H.TRUCKS	AUTOS	NIGHTTIME M.TRUCKS	H.TRUCKS	ADT	2700.00
										SPEED	40.00
										DISTANCE	50.00

INPUT PARAMETERS											
Vehicles per hour	156.38	3.24	5.40	116.10	0.54	0.90	28.80	4.50	7.50	% A	92
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3
NOISE CALCULATIONS											
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16	% HT	5
ADJUSTMENTS											
Flow	15.62	-1.22	1.00	14.32	-9.00	-6.78	8.27	0.21	2.42		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	66.48
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	60.90
LEQ	57.91	50.02	57.09	56.61	42.24	49.31	50.56	51.45	58.51	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	60.90		EVENING LEQ	57.48		NIGHT LEQ	59.84		Use hour?	no
										GRADE dB	0.00
		CNEL	66.48								

Existing Plus Project Traffic Noise

Project: **Garbani 10**
Road: **Bradley Road**
Segment: **South of Craig Avenue**

	DAYTIME			EVENING			NIGHTTIME			ADT	2763.99
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	40.00
										DISTANCE	50.00
INPUT PARAMETERS											
Vehicles per hour	160.30	3.29	5.42	119.01	0.55	0.90	29.52	4.57	7.53	% A	92.13
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	2.97
NOISE CALCULATIONS											
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16	% HT	4.90
ADJUSTMENTS											
Flow	15.72	-1.16	1.01	14.43	-8.94	-6.77	8.38	0.27	2.44		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	66.52
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	60.96
LEQ	58.01	50.08	57.10	56.72	42.30	49.32	50.67	51.51	58.53	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	60.96		EVENING LEQ	57.58		NIGHT LEQ	59.87		Use hour?	no
										GRADE dB	0.00
		CNEL	66.52								

Existing Traffic Noise

Project: **Garbani 10**
 Road: **Craig Avenue**
 Segment: **West of Bradley**

	AUTOS	DAYTIME M.TRUCKS	H.TRUCKS	AUTOS	EVENING M.TRUCKS	H.TRUCKS	AUTOS	NIGHTTIME M.TRUCKS	H.TRUCKS	ADT	3600.00
										SPEED	25.00
										DISTANCE	50.00
INPUT PARAMETERS											
Vehicles per hour	220.79	2.70	1.05	163.16	0.48	0.48	40.87	3.60	1.40	% A	97.4
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	% MT	1.84
NOISE CALCULATIONS											
Reference levels	59.44	71.09	77.24	59.44	71.09	77.24	59.44	71.09	77.24	% HT	0.74
ADJUSTMENTS											
Flow	19.15	0.03	-4.07	17.84	-7.48	-7.47	11.83	1.28	-2.82		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	59.66
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	55.18
LEQ	53.52	46.05	48.10	52.21	38.54	44.70	46.20	47.29	49.35	Day hour	89.00
										Absorbative?	no
	DAY LEQ	55.18		EVENING LEQ	53.08		NIGHT LEQ	52.59		Use hour?	no
										GRADE dB	0.00
		CNEL	59.66								

Existing Plus Project Traffic Noise

Project: **Garbani 10**
 Road: **Craig Avenue**
 Segment: **West of Bradley**

	AUTOS	DAYTIME M.TRUCKS	H.TRUCKS	AUTOS	EVENING M.TRUCKS	H.TRUCKS	AUTOS	NIGHTTIME M.TRUCKS	H.TRUCKS	ADT	3608.00
										SPEED	25.00
										DISTANCE	50.00
INPUT PARAMETERS											
Vehicles per hour	221.28	2.71	1.05	163.53	0.48	0.48	40.96	3.61	1.40	% A	97.40
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	% MT	1.84
NOISE CALCULATIONS											
Reference levels	59.44	71.09	77.24	59.44	71.09	77.24	59.44	71.09	77.24	% HT	0.74
ADJUSTMENTS											
Flow	19.16	0.04	-4.06	17.85	-7.47	-7.46	11.84	1.29	-2.81		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	59.67
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	55.19
LEQ	53.53	46.05	48.11	52.22	38.55	44.71	46.21	47.30	49.36	Day hour	89.00
										Absorbitive?	no
	DAY LEQ	55.19		EVENING LEQ	53.09		NIGHT LEQ	52.59		Use hour?	no
										GRADE dB	0.00
		CNEL	59.67								

Existing Traffic Noise

Project: **Garbani 10**
 Road: **Garbani Road**
 Segment: **Sherman Road to Haun Road**

	AUTOS	DAYTIME M.TRUCKS	H.TRUCKS	AUTOS	EVENING M.TRUCKS	H.TRUCKS	AUTOS	NIGHTTIME M.TRUCKS	H.TRUCKS	ADT	2500.00
										SPEED	40.00
										DISTANCE	50.00
INPUT PARAMETERS											
Vehicles per hour	144.79	3.00	5.00	107.50	0.50	0.83	26.67	4.17	6.94	% A	92
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3
NOISE CALCULATIONS											
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16	% HT	5
ADJUSTMENTS											
Flow	15.28	-1.56	0.66	13.99	-9.34	-7.12	7.93	-0.13	2.09		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	66.15
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	60.56
LEQ	57.57	49.69	56.75	56.28	41.91	48.97	50.22	51.11	58.18	Day hour	89.00
										Absorbative?	no
	DAY LEQ	60.56		EVENING LEQ	57.15		NIGHT LEQ	59.50		Use hour?	no
										GRADE dB	0.00
		CNEL	66.15								

Existing Plus Project Traffic Noise

Project: **Garbani 10**
Road: **Garbani Road**
Segment: **Sherman Road to Haun Road**

	DAYTIME			EVENING			NIGHTTIME			ADT	2690.96
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	40.00
										DISTANCE	50.00
INPUT PARAMETERS											
Vehicles per hour	156.50	3.14	5.06	116.20	0.52	0.84	28.82	4.36	7.02	% A	92.38
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	2.92
NOISE CALCULATIONS											
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16	% HT	4.70
ADJUSTMENTS											
Flow	15.62	-1.36	0.71	14.33	-9.14	-7.07	8.27	0.07	2.14		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	66.28
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	60.77
LEQ	57.91	49.89	56.80	56.62	42.10	49.02	50.56	51.31	58.23	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	60.77		EVENING LEQ	57.44		NIGHT LEQ	59.61		Use hour?	no
										GRADE dB	0.00
		CNEL	66.28								

Existing Traffic Noise

Project: **Garbani 10**
 Road: **Haun Road**
 Segment: **Newport Road to Holland Road**

	AUTOS	DAYTIME M.TRUCKS	H.TRUCKS	AUTOS	EVENING M.TRUCKS	H.TRUCKS	AUTOS	NIGHTTIME M.TRUCKS	H.TRUCKS	ADT	32900.00
										SPEED	40.00
										DISTANCE	50.00

INPUT PARAMETERS											
Vehicles per hour	1905.46	39.48	65.80	1414.70	6.58	10.97	350.93	54.83	91.39	% A	92
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3
NOISE CALCULATIONS											
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16	% HT	5
ADJUSTMENTS											
Flow	26.47	9.64	11.86	25.18	1.86	4.07	19.13	11.06	13.28		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	77.34
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	71.75
LEQ	68.76	60.88	67.95	67.47	53.10	60.16	61.42	62.31	69.37	Day hour	89.00
										Absorbitive?	no
	DAY LEQ	71.75		EVENING LEQ	68.34		NIGHT LEQ	70.70		Use hour?	no
										GRADE dB	0.00
		CNEL	77.34								

Existing Plus Project Traffic Noise

Project: **Garbani 10**

Road: Haun Road

Segment: **Newport Road to Holland Road**

	DAYTIME			EVENING			NIGHTTIME			ADT	32988.98
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	40.00
										DISTANCE	50.00
INPUT PARAMETERS											
Vehicles per hour	1910.92	39.55	65.83	1418.75	6.59	10.97	351.94	54.92	91.43	% A	92.01
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3.00
NOISE CALCULATIONS											
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16	% HT	4.99
ADJUSTMENTS											
Flow	26.49	9.64	11.86	25.19	1.86	4.08	19.14	11.07	13.28		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	77.35
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	71.76
LEQ	68.78	60.89	67.95	67.48	53.11	60.17	61.43	62.31	69.37	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	71.76		EVENING LEQ	68.35		NIGHT LEQ	70.70		Use hour?	no
										GRADE dB	0.00
		CNEL	77.35								

Existing Plus Project Traffic Noise

Project: **Garbani 10**
Road: **Haun Road**
Segment: **Holland Road to Garbani Road**

	DAYTIME			EVENING			NIGHTTIME			ADT	10701.98
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	40.00
										DISTANCE	50.00
INPUT PARAMETERS											
Vehicles per hour	620.17	12.80	21.23	460.44	2.13	3.54	114.22	17.77	29.49	% A	92.05
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	2.99
NOISE CALCULATIONS											
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16	% HT	4.96
ADJUSTMENTS											
Flow	21.60	4.74	6.94	20.31	-3.04	-0.84	14.25	6.17	8.37		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	72.44
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	66.86
LEQ	63.89	55.99	63.03	62.60	48.21	55.25	56.54	57.41	64.46	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	66.86		EVENING LEQ	63.46		NIGHT LEQ	65.79		Use hour?	no
										GRADE dB	0.00
		CNEL	72.44								

FHWA Sound32 Spreadsheet

Existing Traffic Noise

Project: **Garbani 10**
Road: **Haun Road**
Segment: **Garbani Road to Scott Road**

	DAYTIME			EVENING			NIGHTTIME			ADT	12300.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	40.00
										DISTANCE	50.00
INPUT PARAMETERS											
Vehicles per hour	712.38	14.76	24.60	528.90	2.46	4.10	131.20	20.50	34.17	% A	92
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3
NOISE CALCULATIONS											
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16	% HT	5
ADJUSTMENTS											
Flow	22.20	5.36	7.58	20.91	-2.42	-0.20	14.85	6.79	9.01		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	73.07
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	67.48
LEQ	64.49	56.61	63.67	63.20	48.83	55.89	57.14	58.03	65.10	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	67.48		EVENING LEQ	64.07		NIGHT LEQ	66.42		Use hour?	no
										GRADE dB	0.00
		CNEL	73.07								

Existing Plus Project Traffic Noise

Project: **Garbani 10**
 Road: **Haun Road**
 Segment: **Garbani Road to Scott Road**

	AUTOS	DAYTIME M.TRUCKS	H.TRUCKS	AUTOS	EVENING M.TRUCKS	H.TRUCKS	AUTOS	NIGHTTIME M.TRUCKS	H.TRUCKS	ADT	12490.96
										SPEED	40.00
										DISTANCE	50.00
INPUT PARAMETERS											
Vehicles per hour	724.09	14.90	24.66	537.60	2.48	4.11	133.36	20.70	34.25	% A	92.08
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	2.98
NOISE CALCULATIONS											
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16	% HT	4.93
ADJUSTMENTS											
Flow	22.27	5.41	7.59	20.98	-2.38	-0.19	14.92	6.83	9.02		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	73.09
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	67.52
LEQ	64.56	56.65	63.68	63.27	48.87	55.90	57.21	58.07	65.11	Day hour	89.00
										Absorbative?	no
	DAY LEQ	67.52		EVENING LEQ	64.13		NIGHT LEQ	66.45		Use hour?	no
										GRADE dB	0.00
		CNEL	73.09								

Existing Traffic Noise

Project: **Garbani 10**
 Road: **Holland Road**
 Segment: **west of Bradley Road**

	AUTOS	DAYTIME M.TRUCKS	H.TRUCKS	AUTOS	EVENING M.TRUCKS	H.TRUCKS	AUTOS	NIGHTTIME M.TRUCKS	H.TRUCKS	ADT	7800.00
										SPEED	50.00
										DISTANCE	50.00

INPUT PARAMETERS											
Vehicles per hour	451.75	9.36	15.60	335.40	1.56	2.60	83.20	13.00	21.67	% A	92
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	% MT	3
NOISE CALCULATIONS											
Reference levels	71.12	78.79	83.02	71.12	78.79	83.02	71.12	78.79	83.02	% HT	5
ADJUSTMENTS											
Flow	19.25	2.42	4.64	17.96	-5.36	-3.15	11.91	3.84	6.06		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	72.52
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	67.49
LEQ	65.30	56.14	62.59	64.01	48.36	54.80	57.96	57.57	64.01	Day hour	89.00
										Absorbative?	no
	DAY LEQ	67.49		EVENING LEQ	64.61		NIGHT LEQ	65.70		Use hour?	no
										GRADE dB	0.00
		CNEL	72.52								

Existing Plus Project Traffic Noise

Project: **Garbani 10**
Road: **Holland Road**
Segment: **west of Bradley Road**

	DAYTIME			EVENING			NIGHTTIME			ADT	7813.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	50.00
										DISTANCE	50.00
INPUT PARAMETERS											
Vehicles per hour	452.55	9.37	15.60	335.99	1.56	2.60	83.35	13.01	21.67	% A	92.01
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	% MT	3.00
NOISE CALCULATIONS											
Reference levels	71.12	78.79	83.02	71.12	78.79	83.02	71.12	78.79	83.02	% HT	4.99
ADJUSTMENTS											
Flow	19.26	2.42	4.64	17.97	-5.36	-3.14	11.91	3.85	6.06		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	72.53
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	67.50
LEQ	65.31	56.15	62.59	64.02	48.36	54.81	57.96	57.57	64.01	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	67.50		EVENING LEQ	64.61		NIGHT LEQ	65.70		Use hour?	no
										GRADE dB	0.00
		CNEL	72.53								

Existing Traffic Noise

Project: **Garbani 10**
Road: **Menifee Road**
Segment: **Newport Road to Holland Road**

	DAYTIME			EVENING			NIGHTTIME			ADT	13200.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	45.00
										DISTANCE	50.00
INPUT PARAMETERS											
Vehicles per hour	764.50	15.84	26.40	567.60	2.64	4.40	140.80	22.00	36.67	% A	92
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3
NOISE CALCULATIONS											
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14	% HT	5
ADJUSTMENTS											
Flow	22.00	5.16	7.38	20.70	-2.62	-0.40	14.65	6.59	8.80		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	74.11
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	68.82
LEQ	66.27	57.71	64.45	64.98	49.93	56.67	58.92	59.14	65.88	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	68.82		EVENING LEQ	65.69		NIGHT LEQ	67.38		Use hour?	no
										GRADE dB	0.00
		CNEL	74.11								

Existing Plus Project Traffic Noise

Project: **Garbani 10**Road: **Menifee Road**

Segment: **Newport Road to Holland Road**

	DAYTIME			EVENING			NIGHTTIME			ADT	13213.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	45.00
										DISTANCE	50.00
INPUT PARAMETERS											
Vehicles per hour	765.30	15.85	26.40	568.19	2.64	4.40	140.95	22.01	36.67	% A	92.01
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3.00
NOISE CALCULATIONS											
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14	% HT	5.00
ADJUSTMENTS											
Flow	22.00	5.16	7.38	20.71	-2.62	-0.40	14.65	6.59	8.81		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	74.12
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	68.82
LEQ	66.27	57.71	64.45	64.98	49.93	56.67	58.93	59.14	65.88	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	68.82		EVENING LEQ	65.70		NIGHT LEQ	67.38		Use hour?	no
										GRADE dB	0.00
		CNEL	74.12								

Existing Traffic Noise

Project: **Garbani 10**
 Road: **Newport Road**
 Segment: **west of Bradley Road**

	AUTOS	DAYTIME M.TRUCKS	H.TRUCKS	AUTOS	EVENING M.TRUCKS	H.TRUCKS	AUTOS	NIGHTTIME M.TRUCKS	H.TRUCKS	ADT	34400.00
										SPEED	40.00
										DISTANCE	50.00
INPUT PARAMETERS											
Vehicles per hour	1992.33	41.28	68.80	1479.20	6.88	11.47	366.93	57.33	95.56	% A	92
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3
NOISE CALCULATIONS											
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16	% HT	5
ADJUSTMENTS											
Flow	26.67	9.83	12.05	25.37	2.05	4.27	19.32	11.26	13.48		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	77.53
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	71.95
LEQ	68.96	61.07	68.14	67.66	53.29	60.36	61.61	62.50	69.57	Day hour	89.00
										Absorbative?	no
	DAY LEQ	71.95		EVENING LEQ	68.54		NIGHT LEQ	70.89		Use hour?	no
										GRADE dB	0.00
		CNEL	77.53								

Existing Plus Project Traffic Noise

Project: **Garbani 10**
Road: **Newport Road**
Segment: **west of Bradley Road**

	DAYTIME			EVENING			NIGHTTIME			ADT	34420.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	40.00
										DISTANCE	50.00
INPUT PARAMETERS											
Vehicles per hour	1993.56	41.29	68.81	1480.11	6.88	11.47	367.16	57.35	95.56	% A	92.00
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	% MT	3.00
NOISE CALCULATIONS											
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16	% HT	5.00
ADJUSTMENTS											
Flow	26.67	9.83	12.05	25.38	2.05	4.27	19.32	11.26	13.48		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	77.54
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	71.95
LEQ	68.96	61.08	68.14	67.67	53.29	60.36	61.61	62.50	69.57	Day hour	89.00
										Absorbitive?	no
	DAY LEQ	71.95		EVENING LEQ	68.54		NIGHT LEQ	70.89		Use hour?	no
										GRADE dB	0.00
		CNEL	77.54								

Existing Traffic Noise

Project: **Garbani 10**
 Road: **Newport Road**
 Segment: **Haun Road to I-215**

	AUTOS	DAYTIME M.TRUCKS	H.TRUCKS	AUTOS	EVENING M.TRUCKS	H.TRUCKS	AUTOS	NIGHTTIME M.TRUCKS	H.TRUCKS	ADT	55900.00
										SPEED	40.00
										DISTANCE	50.00

INPUT PARAMETERS											
Vehicles per hour	3237.54	67.08	111.80	2403.70	11.18	18.63	596.27	93.17	155.28	% A	92
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3
NOISE CALCULATIONS											
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16	% HT	5
ADJUSTMENTS											
Flow	28.78	11.94	14.16	27.48	4.16	6.38	21.43	13.37	15.58		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	79.64
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	74.06
LEQ	71.07	63.18	70.25	69.77	55.40	62.47	63.72	64.61	71.67	Day hour	89.00
										Absorbative?	no
	DAY LEQ	74.06		EVENING LEQ	70.64		NIGHT LEQ	73.00		Use hour?	no
										GRADE dB	0.00
		CNEL	79.64								

Existing Plus Project Traffic Noise

Project: **Garbani 10**
Road: **Newport Road**
Segment: **Haun Road to I-215**

	DAYTIME			EVENING			NIGHTTIME			ADT	55988.98
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	40.00
										DISTANCE	50.00
INPUT PARAMETERS											
Vehicles per hour	3243.00	67.15	111.83	2407.75	11.19	18.64	597.27	93.26	155.31	% A	92.01
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3.00
NOISE CALCULATIONS											
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16	% HT	4.99
ADJUSTMENTS											
Flow	28.78	11.94	14.16	27.49	4.16	6.38	21.44	13.37	15.59		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	79.65
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	74.06
LEQ	71.07	63.19	70.25	69.78	55.40	62.47	63.73	64.61	71.68	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	74.06		EVENING LEQ	70.65		NIGHT LEQ	73.00		Use hour?	no
										GRADE dB	0.00
		CNEL	79.65								

Existing Traffic Noise

Project: **Garbani 10**
 Road: **Newport Road**
 Segment: **I-215 to Antelope**

	AUTOS	DAYTIME M.TRUCKS	H.TRUCKS	AUTOS	EVENING M.TRUCKS	H.TRUCKS	AUTOS	NIGHTTIME M.TRUCKS	H.TRUCKS	ADT	56600.00
										SPEED	40.00
										DISTANCE	50.00

INPUT PARAMETERS											
Vehicles per hour	3278.08	67.92	113.20	2433.80	11.32	18.87	603.73	94.33	157.22	% A	92
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3
NOISE CALCULATIONS											
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16	% HT	5
ADJUSTMENTS											
Flow	28.83	11.99	14.21	27.54	4.21	6.43	21.48	13.42	15.64		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	79.70
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	74.11
LEQ	71.12	63.24	70.30	69.83	55.45	62.52	63.77	64.66	71.73	Day hour	89.00
										Absorbative?	no
	DAY LEQ	74.11		EVENING LEQ	70.70		NIGHT LEQ	73.05		Use hour?	no
										GRADE dB	0.00
		CNEL	79.70								

Existing Plus Project Traffic Noise

Project: **Garbani 10**
Road: **Newport Road**
Segment: **I-215 to Antelope**

	DAYTIME			EVENING			NIGHTTIME			ADT	56688.98
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	40.00
										DISTANCE	50.00
INPUT PARAMETERS											
Vehicles per hour	3283.54	67.99	113.23	2437.85	11.33	18.87	604.74	94.42	157.26	% A	92.01
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3.00
NOISE CALCULATIONS											
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16	% HT	4.99
ADJUSTMENTS											
Flow	28.84	12.00	14.21	27.54	4.22	6.43	21.49	13.42	15.64		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	79.70
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	74.11
LEQ	71.13	63.24	70.30	69.83	55.46	62.52	63.78	64.67	71.73	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	74.11		EVENING LEQ	70.70		NIGHT LEQ	73.06		Use hour?	no
										GRADE dB	0.00
		CNEL	79.70								

Existing Traffic Noise

Project: **Garbani 10**
 Road: **Newport Road**
 Segment: **Antelope Road to Menifee Road**

	AUTOS	DAYTIME M.TRUCKS	H.TRUCKS	AUTOS	EVENING M.TRUCKS	H.TRUCKS	AUTOS	NIGHTTIME M.TRUCKS	H.TRUCKS	ADT	44300.00
										SPEED	40.00
										DISTANCE	50.00
INPUT PARAMETERS											
Vehicles per hour	2565.71	53.16	88.60	1904.90	8.86	14.77	472.53	73.83	123.06	% A	92
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3
NOISE CALCULATIONS											
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16	% HT	5
ADJUSTMENTS											
Flow	27.77	10.93	13.15	26.47	3.15	5.37	20.42	12.36	14.57		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	78.63
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	73.05
LEQ	70.06	62.17	69.24	68.76	54.39	61.46	62.71	63.60	70.66	Day hour	89.00
										Absorbative?	no
	DAY LEQ	73.05		EVENING LEQ	69.63		NIGHT LEQ	71.99		Use hour?	no
										GRADE dB	0.00
		CNEL	78.63								

Existing Traffic Noise

Project: **Garbani 10**
 Road: **Newport Road**
 Segment: **east of Menifee Road**

	AUTOS	DAYTIME M.TRUCKS	H.TRUCKS	AUTOS	EVENING M.TRUCKS	H.TRUCKS	AUTOS	NIGHTTIME M.TRUCKS	H.TRUCKS	ADT	33600.00
										SPEED	55.00
										DISTANCE	50.00

INPUT PARAMETERS											
Vehicles per hour	1946.00	40.32	67.20	1444.80	6.72	11.20	358.40	56.00	93.33	% A	92
Speed in MPH	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3
NOISE CALCULATIONS											
Reference levels	72.73	79.85	83.81	72.73	79.85	83.81	72.73	79.85	83.81	% HT	5
ADJUSTMENTS											
Flow	25.18	8.35	10.56	23.89	0.56	2.78	17.83	9.77	11.99		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	79.53
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	74.74
LEQ	72.84	63.13	69.31	71.54	55.35	61.53	65.49	64.56	70.74	Day hour	89.00
										Absorbitive?	no
	DAY LEQ	74.74		EVENING LEQ	72.05		NIGHT LEQ	72.61		Use hour?	no
										GRADE dB	0.00
		CNEL	79.53								

Existing Plus Project Traffic Noise

Project: **Garbani 10**
Road: **Newport Road**
Segment: **east of Menifee Road**

	DAYTIME			EVENING			NIGHTTIME			ADT	33625.99
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	55.00
										DISTANCE	50.00
INPUT PARAMETERS											
Vehicles per hour	1947.59	40.34	67.21	1445.98	6.72	11.20	358.69	56.03	93.34	% A	92.00
Speed in MPH	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3.00
NOISE CALCULATIONS											
Reference levels	72.73	79.85	83.81	72.73	79.85	83.81	72.73	79.85	83.81	% HT	5.00
ADJUSTMENTS											
Flow	25.19	8.35	10.56	23.89	0.57	2.78	17.84	9.77	11.99		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	79.53
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	74.75
LEQ	72.84	63.13	69.31	71.55	55.35	61.53	65.49	64.56	70.74	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	74.75		EVENING LEQ	72.05		NIGHT LEQ	72.61		Use hour?	no
										GRADE dB	0.00
		CNEL	79.53								

Existing Traffic Noise

Project: **Garbani 10**
 Road: **Scott Road**
 Segment: **west of Haun**

	AUTOS	DAYTIME M.TRUCKS	H.TRUCKS	AUTOS	EVENING M.TRUCKS	H.TRUCKS	AUTOS	NIGHTTIME M.TRUCKS	H.TRUCKS	ADT	14300.00
										SPEED	40.00
										DISTANCE	50.00
INPUT PARAMETERS											
Vehicles per hour	828.21	17.16	28.60	614.90	2.86	4.77	152.53	23.83	39.72	% A	92
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3
NOISE CALCULATIONS											
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16	% HT	5
ADJUSTMENTS											
Flow	22.85	6.02	8.24	21.56	-1.76	0.46	15.51	7.45	9.66		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	73.72
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	68.14
LEQ	65.14	57.26	64.33	63.85	49.48	56.55	57.80	58.69	65.75	Day hour	89.00
										Absorbative?	no
	DAY LEQ	68.14		EVENING LEQ	64.72		NIGHT LEQ	67.08		Use hour?	no
										GRADE dB	0.00
		CNEL	73.72								

Existing Plus Project Traffic Noise

Project: **Garbani 10**
 Road: **Scott Road**
 Segment: **west of Haun**

	AUTOS	DAYTIME M.TRUCKS	H.TRUCKS	AUTOS	EVENING M.TRUCKS	H.TRUCKS	AUTOS	NIGHTTIME M.TRUCKS	H.TRUCKS	ADT	14313.00
										SPEED	40.00
										DISTANCE	50.00
INPUT PARAMETERS											
Vehicles per hour	829.01	17.17	28.60	615.49	2.86	4.77	152.68	23.85	39.73	% A	92.00
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	% MT	3.00
NOISE CALCULATIONS											
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16	% HT	5.00
ADJUSTMENTS											
Flow	22.86	6.02	8.24	21.57	-1.76	0.46	15.51	7.45	9.66		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	73.72
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	68.14
LEQ	65.15	57.26	64.33	63.86	49.48	56.55	57.80	58.69	65.75	Day hour	89.00
										Absorbitive?	no
	DAY LEQ	68.14		EVENING LEQ	64.73		NIGHT LEQ	67.08		Use hour?	no
										GRADE dB	0.00
		CNEL	73.72								

Existing Traffic Noise

Project: **Garbani 10**
 Road: **Scott Road**
 Segment: **Haun Road to I-215**

	AUTOS	DAYTIME M.TRUCKS	H.TRUCKS	AUTOS	EVENING M.TRUCKS	H.TRUCKS	AUTOS	NIGHTTIME M.TRUCKS	H.TRUCKS	ADT	23900.00
										SPEED	40.00
										DISTANCE	50.00

INPUT PARAMETERS											
Vehicles per hour	1384.21	28.68	47.80	1027.70	4.78	7.97	254.93	39.83	66.39	% A	92
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3
NOISE CALCULATIONS											
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16	% HT	5
ADJUSTMENTS											
Flow	25.09	8.25	10.47	23.79	0.47	2.69	17.74	9.68	11.89		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	75.95
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	70.37
LEQ	67.38	59.49	66.56	66.08	51.71	58.78	60.03	60.92	67.98	Day hour	89.00
										Absorbative?	no
	DAY LEQ	70.37		EVENING LEQ	66.95		NIGHT LEQ	69.31		Use hour?	no
										GRADE dB	0.00
		CNEL	75.95								

Existing Plus Project Traffic Noise

Project: **Garbani 10**
Road: **Scott Road**
Segment: **Haun Road to I-215**

	DAYTIME			EVENING			NIGHTTIME			ADT	23976.98
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	40.00
										DISTANCE	50.00
INPUT PARAMETERS											
Vehicles per hour	1388.93	28.74	47.82	1031.21	4.79	7.97	255.80	39.91	66.42	% A	92.02
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3.00
NOISE CALCULATIONS											
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16	% HT	4.99
ADJUSTMENTS											
Flow	25.10	8.26	10.47	23.81	0.48	2.69	17.75	9.68	11.90		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	75.96
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	70.38
LEQ	67.39	59.50	66.56	66.10	51.72	58.78	60.04	60.93	67.99	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	70.38		EVENING LEQ	66.97		NIGHT LEQ	69.31		Use hour?	no
										GRADE dB	0.00
		CNEL	75.96								

Existing Traffic Noise

Project: **Garbani 10**
Road: **Scott Road**
Segment: **I-215 to Antelope Road**

	AUTOS	DAYTIME M.TRUCKS	H.TRUCKS	AUTOS	EVENING M.TRUCKS	H.TRUCKS	AUTOS	NIGHTTIME M.TRUCKS	H.TRUCKS	ADT	35200.00
										SPEED	55.00
										DISTANCE	50.00

INPUT PARAMETERS											
Vehicles per hour	2038.67	42.24	70.40	1513.60	7.04	11.73	375.47	58.67	97.78	% A	92
Speed in MPH	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3
NOISE CALCULATIONS											
Reference levels	72.73	79.85	83.81	72.73	79.85	83.81	72.73	79.85	83.81	% HT	5
ADJUSTMENTS											
Flow	25.38	8.55	10.77	24.09	0.77	2.98	18.04	9.97	12.19		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	79.73
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	74.95
LEQ	73.04	63.33	69.51	71.75	55.55	61.73	65.69	64.76	70.94	Day hour	89.00
										Absorbitive?	no
	DAY LEQ	74.95		EVENING LEQ	72.25		NIGHT LEQ	72.81		Use hour?	no
										GRADE dB	0.00
		CNEL	79.73								

Existing Plus Project Traffic Noise

Project: **Garbani 10**
Road: **Scott Road**
Segment: **I-215 to Antelope Road**

	DAYTIME			EVENING			NIGHTTIME			ADT	35327.97
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	55.00
										DISTANCE	50.00
INPUT PARAMETERS											
Vehicles per hour	2046.52	42.33	70.44	1519.43	7.06	11.74	376.91	58.80	97.83	% A	92.02
Speed in MPH	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3.00
NOISE CALCULATIONS											
Reference levels	72.73	79.85	83.81	72.73	79.85	83.81	72.73	79.85	83.81	% HT	4.98
ADJUSTMENTS											
Flow	25.40	8.56	10.77	24.11	0.78	2.99	18.05	9.98	12.20		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	79.74
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	74.96
LEQ	73.06	63.34	69.51	71.76	55.56	61.73	65.71	64.77	70.94	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	74.96		EVENING LEQ	72.27		NIGHT LEQ	72.82		Use hour?	no
										GRADE dB	0.00
		CNEL	79.74								

Existing Traffic Noise

Project: **Garbani 10**
 Road: **Scott Road**
 Segment: **Antelope Road to Menifee Road**

	AUTOS	DAYTIME M.TRUCKS	H.TRUCKS	AUTOS	EVENING M.TRUCKS	H.TRUCKS	AUTOS	NIGHTTIME M.TRUCKS	H.TRUCKS	ADT SPEED DISTANCE	19800.00 55.00 50.00

INPUT PARAMETERS											
Vehicles per hour	1146.75	23.76	39.60	851.40	3.96	6.60	211.20	33.00	55.00	% A	92
Speed in MPH	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3
NOISE CALCULATIONS											
Reference levels	72.73	79.85	83.81	72.73	79.85	83.81	72.73	79.85	83.81	% HT	5
ADJUSTMENTS											
Flow	22.89	6.05	8.27	21.59	-1.73	0.49	15.54	7.48	9.69		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	77.23
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	72.45
LEQ	70.54	60.83	67.01	69.25	53.05	59.23	63.19	62.26	68.44	Day hour	89.00
										Absorbitive?	no
	DAY LEQ	72.45		EVENING LEQ	69.75		NIGHT LEQ	70.31		Use hour?	no
										GRADE dB	0.00
		CNEL	77.23								

Existing Plus Project Traffic Noise

Project: **Garbani 10**
Road: **Scott Road**
Segment: **Antelope Road to Menifee Road**

	DAYTIME			EVENING			NIGHTTIME			ADT	19813.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	55.00
										DISTANCE	50.00
INPUT PARAMETERS											
Vehicles per hour	1147.55	23.77	39.60	851.99	3.96	6.60	211.35	33.01	55.01	% A	92.00
Speed in MPH	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	3.00
NOISE CALCULATIONS											
Reference levels	72.73	79.85	83.81	72.73	79.85	83.81	72.73	79.85	83.81	% HT	5.00
ADJUSTMENTS											
Flow	22.89	6.05	8.27	21.59	-1.73	0.49	15.54	7.48	9.69		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	77.23
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	72.45
LEQ	70.54	60.83	67.01	69.25	53.05	59.23	63.20	62.26	68.44	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	72.45		EVENING LEQ	69.76		NIGHT LEQ	70.31		Use hour?	no
										GRADE dB	0.00
		CNEL	77.23								

Existing Traffic Noise

Project: **Garbani 10**Road: **Sherman Road**

Segment: **Tupelo Street to Garbani Road**

	DAYTIME			EVENING			NIGHTTIME			ADT	2400.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	25.00
										DISTANCE	50.00
INPUT PARAMETERS											
Vehicles per hour	147.19	1.80	0.70	108.78	0.32	0.32	27.25	2.40	0.93	% A	97.4
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	% MT	1.84
NOISE CALCULATIONS											
Reference levels	59.44	71.09	77.24	59.44	71.09	77.24	59.44	71.09	77.24	% HT	0.74
ADJUSTMENTS											
Flow	17.39	-1.73	-5.83	16.08	-9.24	-9.23	10.07	-0.48	-4.58		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	57.90
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	53.42
LEQ	51.76	44.28	46.34	50.45	36.78	42.94	44.44	45.53	47.59	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	53.42		EVENING LEQ	51.31		NIGHT LEQ	50.82		Use hour?	no
										GRADE dB	0.00
		CNEL	57.90								

Existing Plus Project Traffic Noise

Project: **Garbani 10**
 Road: **Sherman Road**
 Segment: **Tupelo Street to Garbani Road**

	AUTOS	DAYTIME M.TRUCKS	H.TRUCKS	AUTOS	EVENING M.TRUCKS	H.TRUCKS	AUTOS	NIGHTTIME M.TRUCKS	H.TRUCKS	ADT	2463.99
										SPEED	25.00
										DISTANCE	50.00
INPUT PARAMETERS											
Vehicles per hour	151.12	1.85	0.72	111.68	0.33	0.33	27.97	2.46	0.96	% A	97.40
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	% MT	1.84
NOISE CALCULATIONS											
Reference levels	59.44	71.09	77.24	59.44	71.09	77.24	59.44	71.09	77.24	% HT	0.74
ADJUSTMENTS											
Flow	17.51	-1.62	-5.72	16.19	-9.13	-9.12	10.18	-0.37	-4.47		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	58.02
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	53.54
LEQ	51.88	44.40	46.45	50.56	36.89	43.05	44.55	45.65	47.70	Day hour	89.00
										Absorbitive?	no
	DAY LEQ	53.54		EVENING LEQ	51.43		NIGHT LEQ	50.94		Use hour?	no
										GRADE dB	0.00
		CNEL	58.02								

Existing Traffic Noise

Project: **Garbani 10**
 Road: **Tupelo Street**
 Segment: **Bradley Road to Sherman Road**

	AUTOS	DAYTIME M.TRUCKS	H.TRUCKS	AUTOS	EVENING M.TRUCKS	H.TRUCKS	AUTOS	NIGHTTIME M.TRUCKS	H.TRUCKS	ADT	2600.00
										SPEED	25.00
										DISTANCE	50.00
INPUT PARAMETERS											
Vehicles per hour	159.46	1.95	0.76	117.84	0.35	0.35	29.52	2.60	1.01	% A	97.4
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	% MT	1.84
NOISE CALCULATIONS											
Reference levels	59.44	71.09	77.24	59.44	71.09	77.24	59.44	71.09	77.24	% HT	0.74
ADJUSTMENTS											
Flow	17.74	-1.39	-5.49	16.43	-8.89	-8.88	10.42	-0.14	-4.24		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	58.25
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	53.77
LEQ	52.11	44.63	46.68	50.80	37.12	43.29	44.79	45.88	47.93	Day hour	89.00
										Absorbative?	no
	DAY LEQ	53.77		EVENING LEQ	51.66		NIGHT LEQ	51.17		Use hour?	no
										GRADE dB	0.00
		CNEL	58.25								

Existing Plus Project Traffic Noise

Project: **Garbani 10**
Road: **Tupelo Street**
Segment: **Bradley Road to Sherman Road**

	DAYTIME			EVENING			NIGHTTIME			ADT	2663.99
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	25.00
										DISTANCE	50.00
INPUT PARAMETERS											
Vehicles per hour	163.38	2.00	0.78	120.74	0.35	0.36	30.24	2.66	1.04	% A	97.40
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	% MT	1.84
NOISE CALCULATIONS											
Reference levels	59.44	71.09	77.24	59.44	71.09	77.24	59.44	71.09	77.24	% HT	0.74
ADJUSTMENTS											
Flow	17.85	-1.28	-5.38	16.53	-8.79	-8.78	10.52	-0.03	-4.13		
Distance	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	58.35
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	53.88
LEQ	52.22	44.74	46.79	50.90	37.23	43.39	44.89	45.99	48.04	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	53.88		EVENING LEQ	51.77		NIGHT LEQ	51.28		Use hour?	no
										GRADE dB	0.00
		CNEL	58.35								

APPENDIX F

SoundPLAN Input/Output

Noise emissions of road traffic

Station km	ADT Veh/24	Vehicles type	Traffic values					Contr device	Cons Speed km/h	Affec veh. %	Road surface	Gradient Min / Max %
			Vehicle name	day Veh/h	evening Veh/h	night Veh/h	Speed km/h					
Garbani Road												
0+000	27300	Total	-	1669	1189	413	-	none	-	-	Average (of DGAC and	0.0
		Automobiles	-	1581	1174	291	64					
		Medium trucks	-	33	6	46	64					
		Heavy trucks	-	55	9	76	64					
		Buses	-	-	-	-	-					
		Motorcycles	-	-	-	-	-					
		Auxiliary vehicle	-	-	-	-	-					
0+740	-						-	-	-	-	-	
Sherman N.												
Traffic direction: In entry direction												
0+000	10401	Total	-	649	475	132	-	none	-	-	Average (of DGAC and	0.0
		Automobiles	-	638	473	117	64					
		Medium trucks	-	8	1	11	64					
		Heavy trucks	-	3	1	4	64					
		Buses	-	-	-	-	-					
		Motorcycles	-	-	-	-	-					
		Auxiliary vehicle	-	-	-	-	-					
0+170	-						-	-	-	-	-	
Sherman N.1												
Traffic direction: In entry direction												
0+000	10401	Total	-	649	475	132	-	none	-	-	Average (of DGAC and	0.0
		Automobiles	-	638	473	117	64					
		Medium trucks	-	8	1	11	64					
		Heavy trucks	-	3	1	4	64					
		Buses	-	-	-	-	-					
		Motorcycles	-	-	-	-	-					
		Auxiliary vehicle	-	-	-	-	-					
0+300	-						-	-	-	-	-	

Receiver list

No.	Receiver name	Building side	Floor	Limit Lden dB(A)	Level w/o NP Lden dB(A)	Level w NP Lden dB(A)	Difference Lden dB	Conflict Lden dB
1	1	-	1.FI 2.FI	- -	64.1 66.0	64.1 66.0	0.0 0.0	- -
2	2	-	1.FI 2.FI	- -	65.0 66.8	65.1 66.8	0.0 0.0	- -
3	3	-	1.FI 2.FI	- -	72.3 73.6	65.3 73.6	-7.0 0.0	- -
4	4	-	1.FI 2.FI	- -	71.5 73.1	65.3 73.1	-6.2 0.0	- -
5	5	-	1.FI 2.FI	- -	71.4 73.0	64.7 73.0	-6.7 0.0	- -
6	6	-	1.FI 2.FI	- -	71.1 72.8	64.5 72.8	-6.6 0.0	- -
7	7	-	1.FI 2.FI	- -	65.4 67.6	63.8 66.2	-1.6 -1.4	- -
8	8	-	1.FI 2.FI	- -	66.6 69.0	64.5 68.1	-2.2 -0.9	- -

APPENDIX G

Groundborne Vibration Worksheets

VIBRATION LEVEL IMPACT

Project: Garbani
Source: Vibratory Roller
Scenario: North
Location: Project Site
Address: Project Site
PPV = $PPV_{ref}(5/D)^n$ (in/sec)

Date: 9/30/22

DATA INPUT

Equipment = 1 Vibratory Roller INPUT SECTION IN BLUE
Type
PPVref = 0.21 Reference PPV (in/sec) at 25 ft.
D = 95.00 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.

DATA OUT RESULTS

PPV = 0.028 IN/SEC OUTPUT IN RED

VIBRATION LEVEL IMPACT

Project: Garbani
Source: Vibratory Roller
Scenario: South
Location: Project Site
Address: Project Site
PPV = $PPV_{ref}(5/D)^n$ (in/sec)

Date: 9/30/22

DATA INPUT

Equipment = 1 Vibratory Roller INPUT SECTION IN BLUE
Type
PPVref = 0.21 Reference PPV (in/sec) at 25 ft.
D = 35.00 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.

DATA OUT RESULTS

PPV = 0.127 IN/SEC OUTPUT IN RED

VIBRATION LEVEL IMPACT

Project: Garbani
Source: Large Bulldozer
Scenario: North
Location: Project Site
Address: Project Site
PPV = $PPV_{ref}(5/D)^n$ (in/sec)

Date: 9/30/22

DATA INPUT

Equipment = 2 Large Bulldozer INPUT SECTION IN BLUE
Type
PPVref = 0.089 Reference PPV (in/sec) at 25 ft.
D = 95.00 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.

DATA OUT RESULTS

PPV = 0.012 IN/SEC OUTPUT IN RED

VIBRATION LEVEL IMPACT

Project: Garbani
Source: Large Bulldozer
Scenario: South
Location: Project Site
Address: Project Site
PPV = $PPV_{ref}(5/D)^n$ (in/sec)

Date: 9/30/22

DATA INPUT

Equipment = 2 Large Bulldozer INPUT SECTION IN BLUE
Type
PPVref = 0.089 Reference PPV (in/sec) at 25 ft.
D = 35.00 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.

DATA OUT RESULTS

PPV = 0.054 IN/SEC OUTPUT IN RED