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Highgrove Residential and Commercial Development At Mount Vernon Avenue and Center Street Project

Appendix I

Noise Impact Analysis

NOISE IMPACT ANALYSIS
HIGHGROVE RESIDENTIAL/COMMERCIAL PROJECT
COUNTY OF RIVERSIDE

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July 17, 2022

TABLE OF CONTENTS

1.0	Introduction	1
	1.1 Purpose of Analysis and Study Objectives	1
	1.2 Site Location and Study Area	1
	1.3 Proposed Project Description	1
	1.4 Executive Summary	1
	1.5 Project Design Features Incorporated into the Proposed Project.....	2
	1.6 Mitigation Measures for the Proposed Project	3
2.0	Noise Fundamentals	7
	2.1 Noise Descriptors	7
	2.2 Tone Noise	7
	2.3 Noise Propagation.....	7
	2.4 Ground Absorption	8
3.0	Ground-Borne Vibration Fundamentals	9
	3.1 Vibration Descriptors	9
	3.2 Vibration Perception	9
	3.3 Vibration Propagation.....	9
4.0	Regulatory Setting	10
	4.1 Federal Regulations	10
	4.2 State Regulations	11
	4.3 Local Regulations	14
5.0	Existing Noise Conditions.....	19
	5.1 Noise Measurement Equipment.....	19
	5.2 Noise Measurement Results	19
6.0	Modeling Parameters and Assumptions.....	23
	6.1 Construction Noise.....	23
	6.2 Operations-Related Noise.....	24
	6.3 Exterior to Interior Attenuation Rates for the Proposed Homes.....	27
	6.4 Vibration	27
7.0	Impact Analysis	29
	7.1 CEQA Thresholds of Significance.....	29
	7.2 Generation of Noise Levels in Excess of Standards	29
	7.3 Generation of Excessive Groundborne Vibration	37
	7.4 Aircraft Noise	38
8.0	References.....	40

TABLE OF CONTENTS CONTINUED

APPENDIX

Appendix A – Field Noise Measurements Photo Index

Appendix B – Field Noise Measurements Printouts

Appendix C – Proposed Single-Family Homes Exterior to Interior Attenuation Calculations

Appendix D – RCNM Model Construction Noise Calculation Printouts

Appendix E – FHWA Model Offsite Traffic Noise Calculation Printouts

Appendix F – Commercial Operations Reference Noise Measurements and Wall Calculations

Appendix G – FHWA Model Onsite Traffic Noise Calculation Printouts

LIST OF FIGURES

Figure 1 – Project Location Map	4
Figure 2 – Proposed Site Plan	5
Figure 3 – Location of Proposed Sound Wall	6
Figure 4 – Land Use Compatibility Matrix.....	13
Figure 5 – Field Noise Monitoring Locations	22
Figure 6 – Locations of Receivers Analyzed for Onsite Operational Noise Impacts	39

LIST OF TABLES

Table A – FTA Project Effects on Cumulative Noise Exposure	10
Table B – FTA Construction Noise Criteria	11
Table C – County of Riverside Stationary Source Land Use Noise Standards	15
Table D – County of Riverside Sound Level Standards	18
Table E – Existing (Ambient) Noise Level Measurements.....	20
Table F – Construction Equipment Noise Emissions and Usage Factors	23
Table G – County of Riverside Roadway Vehicle Mixes	25
Table H – FHWA Model Project Generated Vehicle Trips Roadway Parameters	26
Table I – FHWA Model Average Daily Traffic Volumes	26
Table J – Proposed Single-Family Homes Exterior to Interior Noise Reduction Rates	27
Table K – Vibration Source Levels for Construction Equipment	28
Table L – Construction Noise Levels at the Nearby Homes	30
Table M – Existing Year Traffic Noise Contributions.....	31
Table N – Existing Plus Ambient Growth Year 2022 Traffic Noise Contributions	32
Table O – Existing Plus Ambient Growth Plus Cumulative Projects Traffic Noise Contributions	33
Table P – Operational Commercial Uses Noise Levels at the Existing and Proposed Homes.....	34
Table Q – Proposed Homes Exterior Backyard Noise Levels from Nearby Roads	35
Table R – Proposed Homes Interior Noise Levels from Nearby Roads	36

ACRONYMS AND ABBREVIATIONS

ANSI	American National Standards Institute
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CMU	Concrete masonry unit
CNEL	Community Noise Equivalent Level
dB	Decibel
dBA	A-weighted decibels
DOT	Department of Transportation
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
EPA	Environmental Protection Agency
Hz	Hertz
Ldn	Day-night average noise level
Leq	Equivalent sound level
Lmax	Maximum noise level
ONAC	Federal Office of Noise Abatement and Control
OSB	Oriented Strand Board
OSHA	Occupational Safety and Health Administration
PPV	Peak particle velocity
RMS	Root mean square
SEL	Single Event Level or Sound Exposure Level
STC	Sound Transmission Class
TTM	Tentative Tract Map
VdB	Vibration velocity level in decibels

1.0 INTRODUCTION

1.1 Purpose of Analysis and Study Objectives

This Noise Impact Analysis has been prepared to determine the noise and vibration impacts associated with the proposed Highgrove Residential/Commercial project (proposed project). The following is provided in this report:

- A description of the study area and the proposed project;
- Information regarding the fundamentals of noise;
- Information regarding the fundamentals of vibration;
- A description of the local noise guidelines and standards;
- An evaluation of the current noise environment;
- An analysis of the potential short-term construction-related noise impacts from the proposed project; and
- An analysis of long-term operations-related noise impacts from the proposed project.

1.2 Site Location and Study Area

The project site is located in the central portion of the County of Riverside (County) within the Highgrove area on the north east corner of Mount Vernon Avenue and Center Street. The approximately 9.17-acre project site is currently vacant and is bounded by single-family homes to the north and east, Center Street and vacant land to the south, and Mount Vernon Avenue and single-family homes to the west. The project study area is shown in Figure 1.

Sensitive Receptors in Project Vicinity

The nearest sensitive receptors to the project site are the single-family homes located adjacent to the north and east sides of the project site. The nearest school to the project site is Highgrove Elementary School, which is located as near as 0.6 mile west of the project site.

1.3 Proposed Project Description

The proposed project consists of development of a commercial component proposed Parcel 3 that covers 0.99 acres that consists of a 4,088 square foot convenience store (7-Eleven) with 12 fueling position gas station and Parcel 2 that covers 1.06 acres that consists of an 8,373 square foot retail building. The proposed project also includes development of a residential component on the remainder of the project site (Parcel 1) that covers 6.40 acres that would be developed with 52 single-family homes. The proposed site plan is shown in Figure 2.

1.4 Executive Summary

Standard Noise Regulatory Conditions

The proposed project will be required to comply with the following regulatory conditions from the County and State of California (State).

County of Riverside Noise Regulations

The following lists the noise regulations from the Municipal Code that are applicable, but not limited to the proposed project.

- Section 9.52.020(I) Construction time limitations
- Section 9.5.040 General sound level standards (exterior and interior residential noise standards)

The following lists the vibration standards from the General Plan that are for railroad vibration impacts.

- General Plan Policy N 16.3 limits train vibration to residential dwellings to perceptible ground vibration, which is defined as a motion velocity of 0.01 inch per second over a range of 1 to 100 Hz.

State of California Noise Regulations

The following lists the State of California noise regulations that are applicable, but not limited to the proposed project.

- California Vehicle Code Section 2700-27207 – On Road Vehicle Noise Limits
- California Vehicle Code Section 38365-38350 – Off-Road Vehicle Noise Limits

Summary of Analysis Results

The following is a summary of the proposed project's impacts with regard to the State CEQA Guidelines noise checklist questions.

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

Potentially significant impact. Implementation of Mitigation Measure 1 would reduce the impact to less than significant levels.

Generation of excessive groundborne vibration or groundborne noise levels?

Less than significant impact.

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

No impact.

1.5 Project Design Features Incorporated into the Proposed Project

This analysis was based on implementation of the following project design features that are either already depicted on the proposed project site plan and architectural plans or are required from County and State Regulations.

Project Design Feature 1:

The project applicant shall utilize standard dual pane windows for all conditioned rooms of the proposed homes that have a minimum Sound Transmission Class (STC) rating of 26 STC.

Project Design Feature 2:

The project applicant shall provide a “windows closed” condition for each proposed single-family home. A “window closed” condition requires a means of mechanical ventilation per Chapter 12, Section 1205 of the Uniform Building Code. This shall be achieved with a standard forced air conditioning and heating system with a filtered outside air intake vent for each residential unit.

Project Design Feature 3:

Prior to the issuance of the grading permit, the project applicant shall submit a construction-related noise mitigation plan to the County for review and approval. The plan shall depict the locations of where construction equipment will operate on the project site and how the noise from the construction equipment will be mitigated during construction of the project, through use of such methods as:

1. Temporary noise attenuation fences;
2. Preferential location of equipment; and
3. Use of current noise suppression technology and equipment.

Project Design Feature 4:

The project applicant shall construct the combination retaining wall and 6-foot high free-standing wall located between the commercial and residential portions of the project that is depicted on both the grading and wall and fence plans. The free-standing portion of the wall shall be constructed of concrete masonry units (CMUs) and shall be free of any decorative cutouts or openings.

1.6 Mitigation Measures for the Proposed Project

This analysis found that through adherence to the noise and vibration regulations detailed in Section 1.4 above, through implementation of the Project Design Features detailed in Section 1.5 above, and through implementation of the following mitigation all noise and vibration impacts would be reduced to less than significant levels.

Mitigation Measure 1:

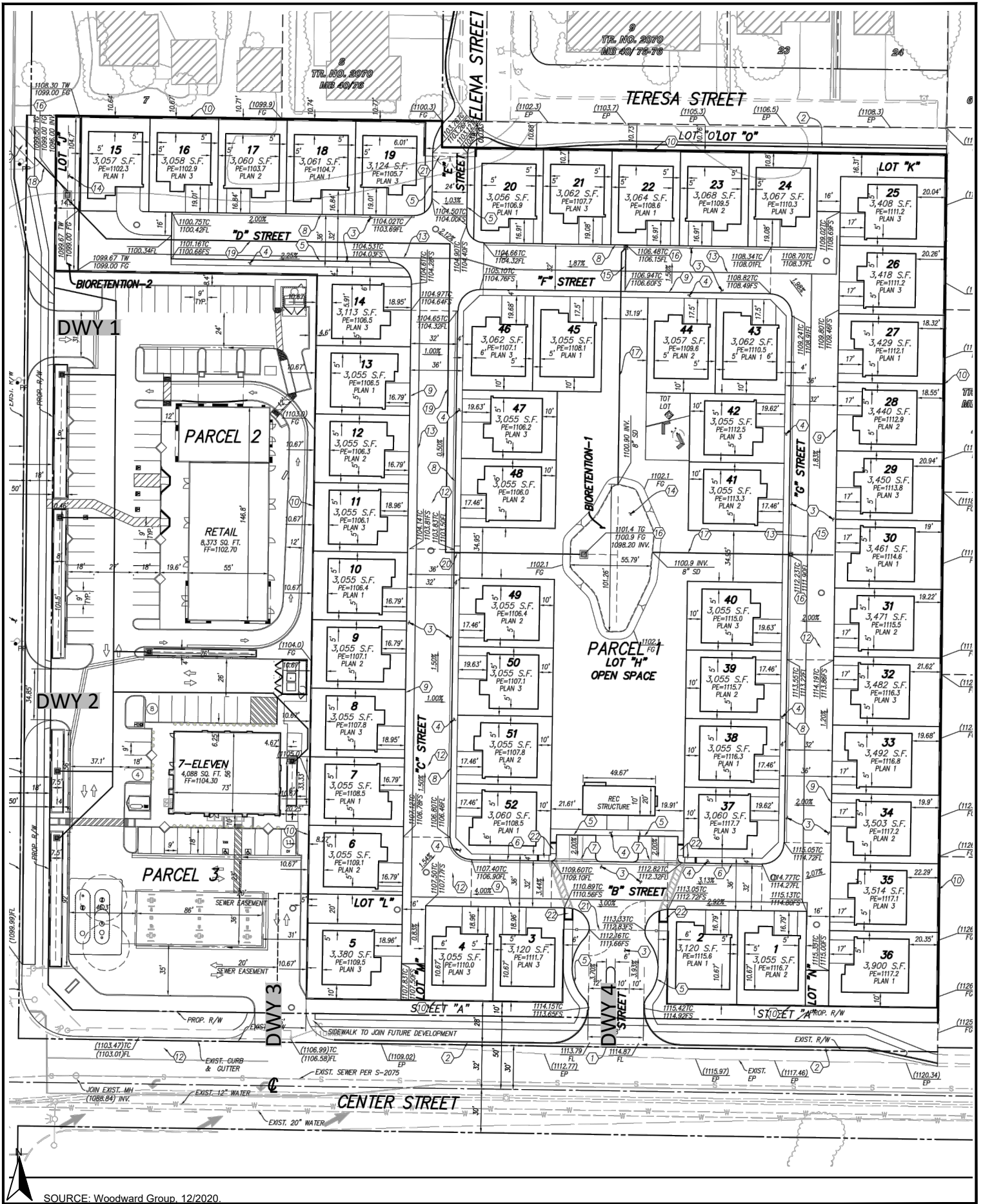
The project applicant shall construct a minimum 5.0-foot high solid wall on the west side of the Lot for Building 15 that is adjacent to Mt Vernon Avenue (see Figure 3). The wall shall be constructed of concrete masonry units (CMUs) and shall be free of any decorative cutouts or openings.



SOURCE: Google Maps.



Figure 1
Project Location Map



SOURCE: Woodward Group, 12/2020.

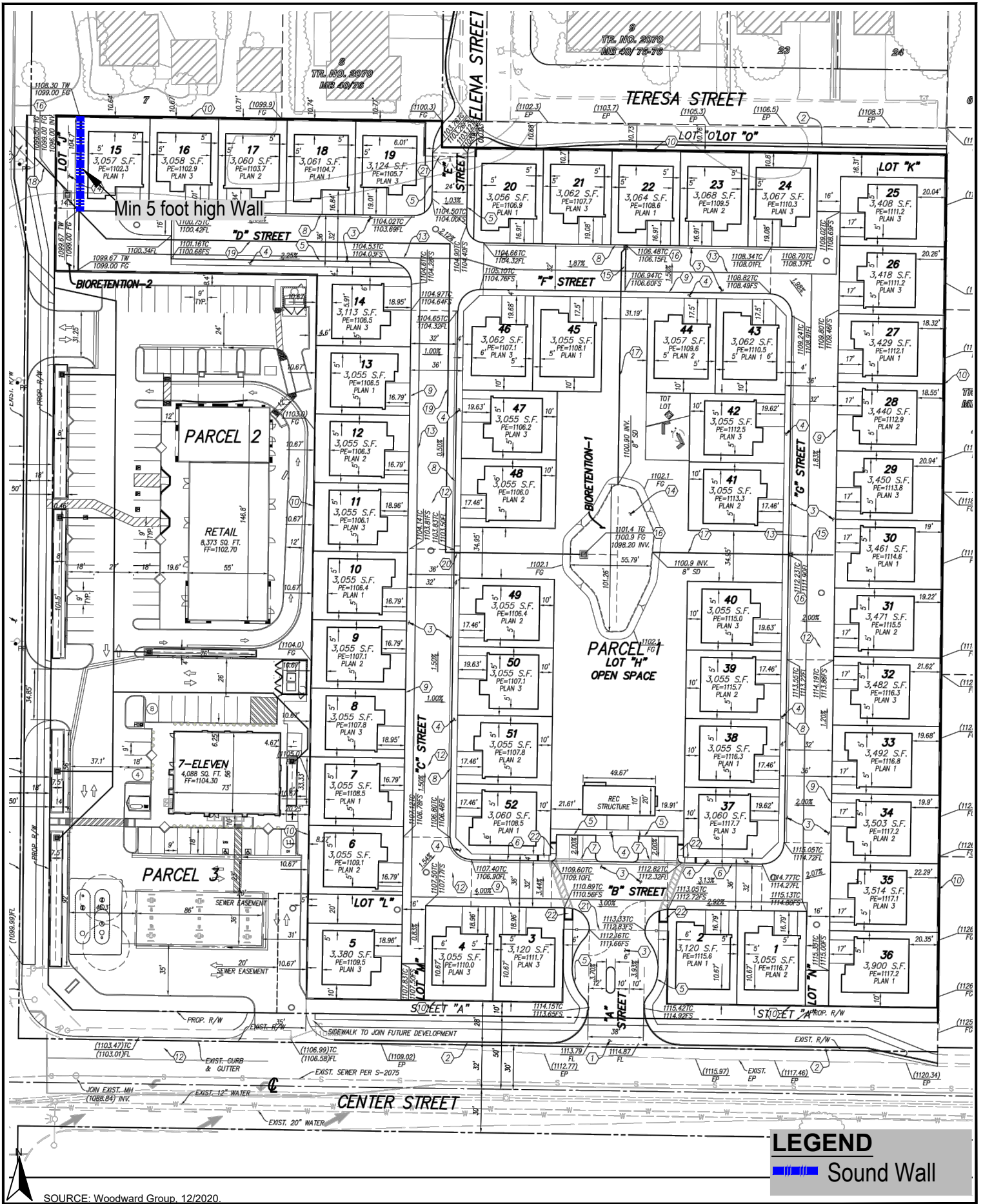


Figure 3
 Location of Proposed Sound Wall

2.0 NOISE FUNDAMENTALS

Noise is defined as unwanted sound. Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm or when it has adverse effects on health. Sound is produced by the vibration of sound pressure waves in the air. Sound pressure levels are used to measure the intensity of sound and are described in terms of decibels. The decibel (dB) is a logarithmic unit which expresses the ratio of the sound pressure level being measured to a standard reference level. A-weighted decibels (dBA) approximate the subjective response of the human ear to a broad frequency noise source by discriminating against very low and very high frequencies of the audible spectrum.

2.1 Noise Descriptors

Noise Equivalent sound levels are not measured directly, but are calculated from sound pressure levels typically measured in A-weighted decibels (dBA). The equivalent sound level (Leq) represents a steady state sound level containing the same total energy as a time varying signal over a given sample period. The worst-hour traffic Leq is the noise metric used by California Department of Transportation (Caltrans) for all traffic noise impact analyses.

The Day-Night Average Level (Ldn) is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. The time of day corrections require the addition of ten decibels to sound levels at night between 10 p.m. and 7 a.m. While the Community Noise Equivalent Level (CNEL) is similar to the Ldn, except that it has another addition of 4.77 decibels to sound levels during the evening hours between 7 p.m. and 10 p.m. These additions are made to the sound levels at these time periods because during the evening and nighttime hours, when compared to daytime hours, there is a decrease in the ambient noise levels, which creates an increased sensitivity to sounds. For this reason, the sound appears louder in the evening and nighttime hours and is weighted accordingly. The County of Riverside relies on the Ldn noise standard to assess transportation-related impacts on noise sensitive land uses.

2.2 Tone Noise

A pure tone noise is a noise produced at a single frequency and laboratory tests have shown that humans are more perceptible to changes in noise levels of a pure tone. For a noise source to contain a “pure tone,” there must be a significantly higher A-weighted sound energy in a given frequency band than in the neighboring bands, thereby causing the noise source to “stand out” against other noise sources. A pure tone occurs if the sound pressure level in the one-third octave band with the tone exceeds the average of the sound pressure levels of the two contiguous one-third octave bands by:

- 5 dB for center frequencies of 500 hertz (Hz) and above
- 8 dB for center frequencies between 160 and 400 Hz
- 15 dB for center frequencies of 125 Hz or less

2.3 Noise Propagation

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, radiate 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) between source and receiver. 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.

2.4 Ground Absorption

The sound drop-off rate is highly dependent on the conditions of the land between the noise source and receiver. To account for this ground-effect attenuation (absorption), two types of site conditions are commonly used in traffic noise models, soft-site and hard-site conditions. Soft-site conditions account for the sound propagation loss over natural surfaces such as normal earth and ground vegetation. For point sources, a drop-off rate of 7.5 dBA/DD is typically observed over soft ground with landscaping, as compared with a 6.0 dBA/DD drop-off rate over hard ground such as asphalt, concrete, stone and very hard packed earth. For line sources a 4.5 dBA/DD is typically observed for soft-site conditions compared to the 3.0 dBA/DD drop-off rate for hard-site conditions. Caltrans research has shown that the use of soft-site conditions is more appropriate for the application of the Federal Highway Administration (FHWA) traffic noise prediction model used in this analysis.

3.0 GROUND-BORNE VIBRATION FUNDAMENTALS

Ground-borne vibrations consist of rapidly fluctuating motions within the ground that have an average motion of zero. The effects of ground-borne vibrations typically only cause a nuisance to people, but at extreme vibration levels damage to buildings may occur. Although ground-borne vibration can be felt outdoors, it is typically only an annoyance to people indoors where the associated effects of the shaking of a building can be notable. Ground-borne noise is an effect of ground-borne vibration and only exists indoors, since it is produced from noise radiated from the motion of the walls and floors of a room and may also consist of the rattling of windows or dishes on shelves.

3.1 Vibration Descriptors

There are several different methods that are used to quantify vibration amplitude such as the maximum instantaneous peak in the vibrations velocity, which is known as the peak particle velocity (PPV) or the root mean square (rms) amplitude of the vibration velocity. Due to the typically small amplitudes of vibrations, vibration velocity is often expressed in decibels and is denoted as (L_v) and is based on the rms velocity amplitude. A commonly used abbreviation is “VdB”, which in this text, is when L_v is based on the reference quantity of 1 micro inch per second.

3.2 Vibration Perception

Typically, developed areas are continuously affected by vibration velocities of 50 VdB or lower. These continuous vibrations are not noticeable to humans whose threshold of perception is around 65 VdB. Off-site sources that may produce perceptible vibrations are usually caused by construction equipment, steel-wheeled trains, and traffic on rough roads, while smooth roads rarely produce perceptible ground-borne noise or vibration.

3.3 Vibration Propagation

The propagation of ground-borne vibration is not as simple to model as airborne noise. This is due to the fact that noise in the air travels through a relatively uniform medium, while ground-borne vibrations travel through the earth which may contain significant geological differences. There are three main types of vibration propagation; surface, compression, and shear waves. Surface waves, or Rayleigh waves, travel along the ground’s surface. These waves carry most of their energy along an expanding circular wave front, similar to ripples produced by throwing a rock into a pool of water. P-waves, or compression 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. S-waves, or shear 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 vibration energy decreases in a logarithmic nature and the vibration levels typically decrease by 6 VdB per doubling of the distance from the vibration source. As stated above, this drop-off rate can vary greatly depending on the soil but has been shown to be effective enough for screening purposes, in order to identify potential vibration impacts that may need to be studied through actual field tests.

4.0 REGULATORY SETTING

The project site is located in the County of Riverside. Noise regulations are addressed through the efforts of various federal, state, and local government agencies. The agencies responsible for regulating noise are discussed below.

4.1 Federal Regulations

The adverse impact of noise was officially recognized by the federal government in the Noise Control Act of 1972, which serves three purposes:

- Promulgating noise emission standards for interstate commerce
- Assisting state and local abatement efforts
- Promoting noise education and research

The Federal Office of Noise Abatement and Control (ONAC) was initially tasked with implementing the Noise Control Act. However, the ONAC has since been eliminated, leaving the development of federal noise policies and programs to other federal agencies and interagency committees. For example, the Occupational Safety and Health Administration (OSHA) agency prohibits exposure of workers to excessive sound levels. The Department of Transportation (DOT) assumed a significant role in noise control through its various operating agencies. The Federal Aviation Administration (FAA) regulates noise of aircraft and airports. Surface transportation system noise is regulated by a host of agencies, including the Federal Transit Administration (FTA), which regulates transit noise, while freeways that are part of the interstate highway system are regulated by the Federal Highway Administration (FHWA). Finally, the federal government actively advocates that local jurisdictions use their land use regulatory authority to arrange new development in such a way that “noise sensitive” uses are either prohibited from being sited adjacent to a highway or, alternately that the developments are planned and constructed in such a manner that potential noise impacts are minimized.

Although the proposed project is not under the jurisdiction of the FTA, the *Transit Noise and Vibration Assessment Manual* (FTA Manual), prepared by the FTA, September 2018, is the only guidance document from a government agency that defines what constitutes a significant noise impact from implementing a project. The FTA standards are based on extensive studies by the FTA and other governmental agencies on the human effects and reaction to noise and a summary of the FTA findings are provided below in Table A.

Table A – FTA Project Effects on Cumulative Noise Exposure

Existing Noise Exposure (dBA Leq or Ldn)	Allowable Noise Impact Exposure dBA Leq or Ldn		
	Allowable Project Noise Exposure Before Moderate Impact	Allowable Combined Total Noise Exposure	Allowable Noise Exposure Increase Before Moderate Impact
45	51	52	+7
50	53	55	+5
55	55	58	+3
60	57	62	+2
65	60	66	+1

Existing Noise Exposure (dBA Leq or Ldn)	Allowable Noise Impact Exposure dBA Leq or Ldn		
	Allowable Project Noise Exposure Before Moderate Impact	Allowable Combined Total Noise Exposure	Allowable Noise Exposure Increase Before Moderate Impact
70	64	71	+1
75	65	75	0

Source: Federal Transit Administration, 2018.

The FTA Manual also provides guidance on construction noise and recommends developing construction noise criteria on a project-specific basis that utilizes local noise ordinances if possible. However, local noise ordinances usually relates to nuisance and hours of allowed activity and sometimes specify limits in terms of maximum levels, but are generally not practical for assessing the noise impacts of a construction project. Project construction noise criteria should take into account the existing noise environment, the absolute noise levels during construction activities, the duration of the construction, and the adjacent land uses. The FTA standards are based on extensive studies by the FTA and other governmental agencies on the human effects and reaction to noise and a summary of the FTA findings for a detailed construction noise assessment are provided below in Table B.

Table B – FTA Construction Noise Criteria

Land Use	Day (dBA Leq _(8-hour))	Night (dBA Leq _(8-hour))	30-day Average (dBA Ldn)
Residential	80	70	75
Commercial	85	85	80 ⁽¹⁾
Industrial	90	90	85 ⁽¹⁾

Notes:

⁽¹⁾ Use a 24-hour Leq_(24-hour) instead of Ldn_(30-day).

Source: Federal Transit Administration, 2018.

Since the federal government has preempted the setting of standards for noise levels that can be emitted by the transportation sources, the County is restricted to regulating the noise generated by the transportation system through nuisance abatement ordinances and land use planning.

4.2 State Regulations

Noise Standards

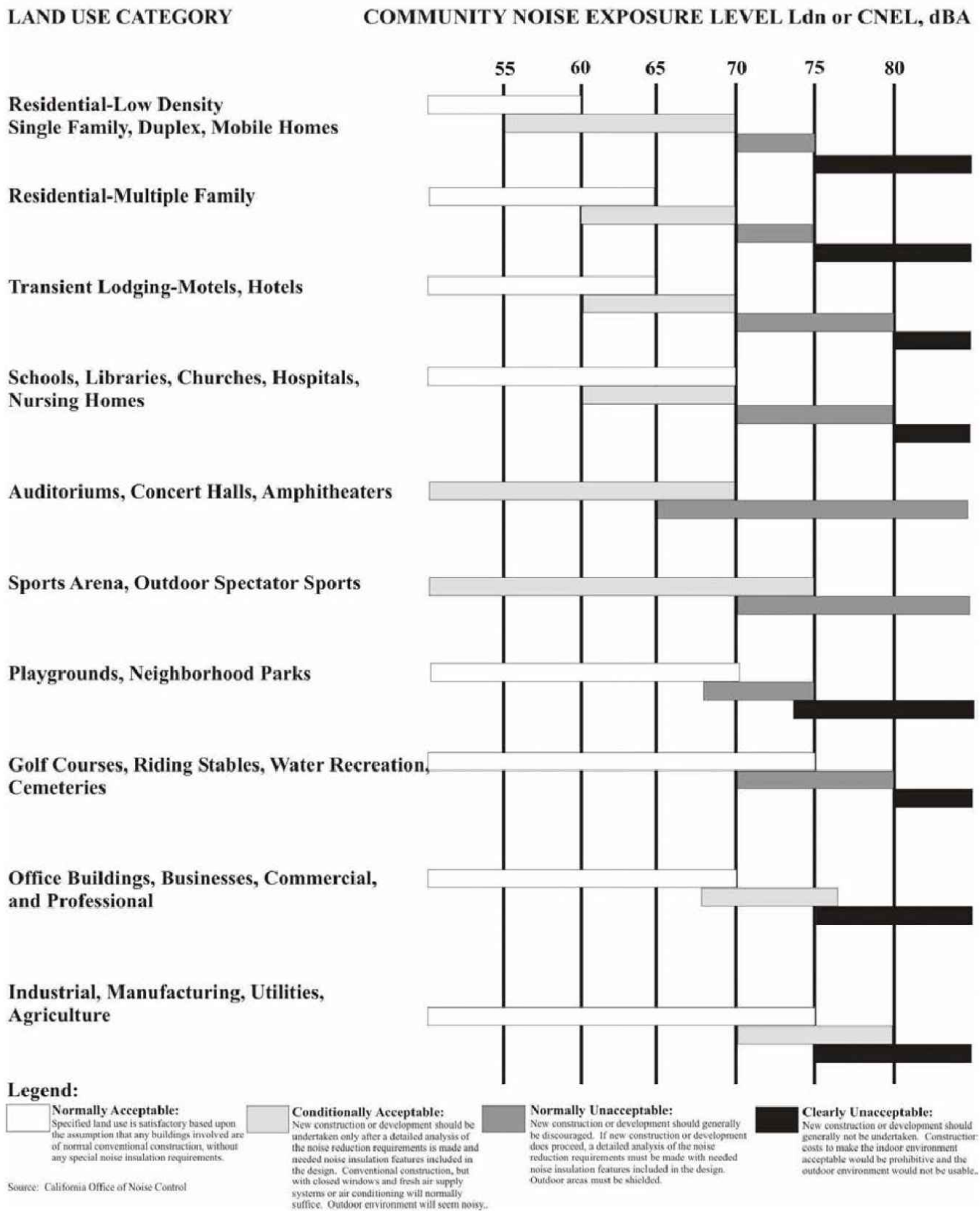
California Department of Health Services Office of Noise Control

Established in 1973, the California Department of Health Services Office of Noise Control (ONC) was instrumental in developing regularity tools to control and abate noise for use by local agencies. One significant model is the “Land Use Compatibility for Community Noise Environments Matrix,” which allows the local jurisdiction to clearly delineate compatibility of sensitive uses with various incremental levels of noise and which is shown below in Figure 4.

California Noise Insulation Standards

Title 24, Chapter 1, Article 4 of the California Administrative Code (California Noise Insulation Standards) requires noise insulation in new hotels, motels, apartment houses, and dwellings (other than single-family detached housing) that provides an annual average noise level of no more than 45 dBA CNEL. When such structures are located within a 60-dBA CNEL (or greater) noise contour, an acoustical analysis is required to ensure that interior levels do not exceed the 45-dBA CNEL annual threshold. In addition, Title 21, Chapter 6, Article 1 of the California Administrative Code requires that all habitable rooms, hospitals, convalescent homes, and places of worship shall have an interior CNEL of 45 dB or less due to aircraft noise.

**Table N-1
Land Use Compatibility for Community Noise Exposure**



SOURCE: County of Riverside General Plan.

Government Code Section 65302

Government Code Section 65302 mandates that the legislative body of each county and city in California adopt a noise element as part of its comprehensive general plan. The local noise element must recognize the land use compatibility guidelines published by the State Department of Health Services. The guidelines rank noise land use compatibility in terms of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable.

California Vehicle Code Section 27200-27207 – On-Road Vehicle Noise

California Vehicle Code Section 27200-27207 provides noise limits for vehicles operated in California. For vehicles over 10,000 pounds noise is limited to 88 dB for vehicles manufactured before 1973, 86 dB for vehicles manufactured before 1975, 83 dB for vehicles manufactured before 1988, and 80 dB for vehicles manufactured after 1987. All measurements are based at 50 feet from the vehicle.

California Vehicle Section 38365-38380 – Off-Road Vehicle Noise

California Vehicle Code Section 38365-38380 provides noise limits for off-highway motor vehicles operated in California. 92 dBA for vehicles manufactured before 1973, 88 dBA for vehicles manufactured before 1975, 86 dBA for vehicles manufactured before 1986, and 82 dBA for vehicles manufactured after December 31, 1985. All measurements are based at 50 feet from the vehicle.

Vibration Standards

Title 14 of the California Administrative Code Section 15000 requires that all state and local agencies implement the California Environmental Quality Act (CEQA) Guidelines, which requires the analysis of exposure of persons to excessive groundborne vibration. However, no statute has been adopted by the state that quantifies the level at which excessive groundborne vibration occurs.

The *Transportation and Construction Vibration Guidance Manual*, prepared by Caltrans, April 2020, provides practical guidance to Caltrans engineers, planners, and consultants who must address vibration issues associated with the construction, operation, and maintenance of Caltrans projects. However, this manual is also used as a reference point by many lead agencies and CEQA practitioners throughout California, as it provides numeric thresholds for vibration impacts. Thresholds are established for continuous (construction-related) and transient (transportation-related) sources of vibration, which found that the human response becomes distinctly perceptible at 0.25 inch per second PPV for transient sources and 0.04 inch per second PPV for continuous sources.

4.3 Local Regulations

The County of Riverside General Plan and Municipal Code establishes the following applicable policies related to noise and vibration.

County of Riverside General Plan Policies

- N 1.1** Protect noise sensitive land uses from high levels of noise by restricting noise-producing land uses from these areas. If the noise-producing land use cannot be relocated, then noise buffers such as setbacks, landscaping, or block walls shall be used.

- N1.3** Consider the following uses noise-sensitive and discourage these uses in areas in excess of 65 CNEL:

- Schools;
- Hospitals;
- Rest Homes;
- Long Term Care Facilities;
- Mental Care Facilities;
- Residential Uses;
- Libraries;
- Passive Recreation Uses; and
- Places of Worship.

N 1.5 Prevent and mitigate and mitigate the adverse impacts of excessive noise exposure on the residents, employees, visitors, and noise sensitive uses of Riverside County.

N 2.3 Mitigate exterior and interior noises to the levels listed in Table N-2 [Table C] below to the extent feasible, for stationary sources:

Table C – County of Riverside Stationary Source Land Use Noise Standards

Land Use	Interior Standards	Exterior Standards
Residential		
10:00 p.m. to 7:00 a.m.	40 L _{eq} (10 minute)	45 L _{eq} (10 minute)
7:00 a.m. to 10:00 p.m.	55 L _{eq} (10 minute)	65 L _{eq} (10 minute)

Notes: These are only preferred standards; final decision will be made by the Riverside County Planning Department and Office of Public Health

Source: County of Riverside, 2015.

N 4.1 Prohibit facility-related noise, received by any sensitive use from exceeding the following worst-case noise levels:

- 45 dBA-10-minute L_{eq} between 10:00 p.m. and 7:00 a.m.
- 65 dBA-10-minute L_{eq} between 7:00 a.m. and 10:00 p.m.

N 4.7 Evaluate noise producers for the possibility of pure-tone producing noises. Mitigate any pure tones that may be emitted from a noise source.

N 7.1 New land use development within Airport Influence Areas shall comply with airport land use noise compatibility criteria contained in the corresponding airport land use compatibility plan for the area. Each Area Plan affected by a public-use airport includes one or more Airport Influence Areas, one for each airport. The applicable noise compatibility criteria are fully set forth in Appendix I-1 and summarized in the Policy Area section of the affected Area Plan.

N 7.2 Adhere to applicable noise compatibility criteria when making decisions regarding land uses adjacent to airports. Refer to the Airports section of the Land Use Element (Page LU-32) and the Airport Influence Area sections of the corresponding Area Plans.

N 7.4 Check each development proposal to determine if it is located within an airport noise impact area as depicted in the applicable Area Plan’s Policy Area section regarding Airport Influence Areas. Development proposals within a noise impact area shall comply with applicable airport land use noise compatibility criteria.

-
- N 9.3** Require development that generates increased traffic and subsequent increases in the ambient noise level adjacent to noise-sensitive land uses to provide for appropriate mitigation measures.
- N 9.6** Require that all future exterior noise forecasts use Level of Service C, and be based on designed road capacity or 20-year projection of development (whichever is less) for future noise forecasts.
- N 9.7** Require that field noise monitoring be performed prior to siting any sensitive land uses along arterial roadways. Noise level measurements should be at least 10 minutes in duration and should include simultaneous vehicle counts so that more accurate vehicle ratios may be used in modeling ambient noise levels.
- N 12.1** Utilize natural barriers such as hills, berms, and dense vegetation to assist in noise reduction.
- N 12.2** Utilize dense landscaping to effectively reduce noise. However, when there is a long initial period where the immaturity of new landscaping makes this approach only marginally effective, utilize a large number of highly dense species planted in a fairly mature state, at close intervals, in conjunction with earthen berms, setbacks, or block walls.
- N 13.1** Minimize the impacts of construction noise on adjacent uses within acceptable practices.
- N13.2** Ensure that construction activities are regulated to establish hours of operation in order to prevent and/or mitigate the generation of excessive or adverse noise impacts on surrounding areas.
- N13.3** Condition subdivision approval adjacent to developed/occupied noise-sensitive land uses (see policy N 1.3) by requiring the developer to submit a construction-related noise mitigation plan to the County for review and approval prior to issuance of a grading permit. The plan must depict the location of construction equipment and how the noise from this equipment will be mitigated during construction of this project, through use of such methods as:
- a. Temporary noise attenuation fences;
 - b. Preferential location of equipment; and
 - c. Use of current noise suppression technology and equipment.
- N 13.4** Require that all construction equipment utilizes noise reduction features (e.g. mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.
- N 14.1** Enforce the California Building Standards that sets standards for building construction to mitigate interior noise levels to tolerable 45 CNEL limit. These standards are utilized in conjunction with the Uniform Building Code by the County's Building Department to ensure that noise protection is provided to the public. Some design features may include extra-dense insulation, double paned windows, and dense construction materials.
- N 14.6** Prevent the transmission of excessive and unacceptable noise levels between individual tenants and businesses in commercial structures and between individual dwelling units in multi-family residential structures.
- N 16.1** Restrict the placement of sensitive land uses in proximity to vibration-producing land uses.

N 16.2 Consider the following land uses sensitive to vibration:

- Hospitals;
- Residential Areas;
- Concert Halls;
- Libraries;
- Sensitive Research Operations;
- Schools; and
- Offices

N 16.3 Prohibit exposure of residential dwellings to perceptible ground vibration from passing trains as perceived at the ground or second floor. Perceptible motion shall be presumed to be a motion velocity of 0.01 inches/second over a range of 1 to 100 Hz.

County of Riverside Municipal Code

The County of Riverside Municipal Code establishes the following applicable standards related to noise.

Chapter 9.52 Noise Regulation

9.5.010 Intent

At certain levels, sound becomes noise and may jeopardize the health, safety or general welfare of Riverside County residents and degrade their quality of life. Pursuant to its police power, the board of supervisors declares that noise shall be regulated in the manner described in this chapter. This chapter is intended to establish county-wide standards regulating noise. This chapter is 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.

9.5.020 Exemptions

Sound emanating from the following sources is exempt from the provisions of this chapter:

- I. Private construction projects located within one-quarter mile of an inhabited dwelling, provided that:
 - 1. Construction does not occur between the hours of six p.m. and six a.m. during the months of June through September, and
 - 2. Construction does not occur between the hours of six p.m. and seven a.m. during the months of October thru May;
- J. Property maintenance, including, but not limited to, the operation of lawnmowers, leaf blowers, etc., provided such maintenance occurs between the hours of seven a.m. and eight p.m.;
- K. Motor vehicles, other than off-highway vehicles. This exemption does not include sound emanating from motor vehicle sound systems;
- L. Heating and air conditioning equipment;

9.5.040 General sound level standards

No person shall create any sound, or allow the creation of any sound, on any property that causes the exterior sound level on any other occupied property to exceed the sound level standards set forth in Table 1 [Table D].

Table D – County of Riverside Sound Level Standards

General Plan Foundation Component	General Plan Land Use Designation	General Plan Land Use Designation Name	Density	Exterior Standards	
				7 am – 10 pm	10 pm – 7 am
Community Development	MDR	Medium Density Residential	2 – 5	55	45
	HDR	High Density Residential	8 – 14	55	45
	VHDR	Very High Density Residential	14 – 20	55	45

Source: County of Riverside, 2019.

5.0 EXISTING NOISE CONDITIONS

To determine the existing noise levels, noise measurements have been taken in the vicinity of the project site. The field survey noted that noise within the proposed project area is generally characterized by vehicle traffic on Mt. Vernon Avenue and Center Street. The following describes the measurement procedures, measurement locations, and measurement results.

5.1 Noise Measurement Equipment

The noise measurements were taken using three Larson Davis Model LXT1 Class 1 sound level meters programmed in “slow” mode to record the sound pressure level at 1-second intervals for 24 hours in “A” weighted form. In addition, the L_{eq} averaged over the entire measuring time and L_{max} were recorded with the three sound level meters. The sound level meters and microphones were mounted on trees and power poles, were placed between four and six feet above the ground and were equipped with windscreens during all measurements. The noise meters were calibrated before and after the monitoring using a Larson Davis Cal200 calibrator. All noise level measurement equipment meets American National Standards Institute (ANSI) specifications for sound level meters (ANSI S1.4-2014 standard).

Noise Measurement Location

The noise monitoring locations were selected in order to obtain noise levels on the project site from Mt. Vernon Avenue and Center Street as well as at the nearby homes to the proposed commercial uses. Descriptions of the noise monitoring sites are provided below in Table E and are shown in Figure 5. Appendix A includes a photo index of the study area and noise level measurement locations.

Noise Measurement Timing and Climate

The noise measurements were recorded between 1:09 p.m. on Tuesday, August 11, 2020 and 1:24 p.m. on Wednesday, August 12, 2020. When the noise measurements were started the sky was clear, the temperature was 95 degrees Fahrenheit, the humidity was 20 percent, barometric pressure was 28.69 inches of mercury, and the wind was blowing around two miles per hour. Overnight, the temperature dropped to 56 degrees Fahrenheit. At the conclusion of the noise measurements, the sky was clear, the temperature was 102 degrees Fahrenheit, the humidity was 15 percent, barometric pressure was 28.68 inches of mercury, and the wind was blowing around two miles per hour.

5.2 Noise Measurement Results

The results of the noise level measurements are presented in Table E. The measured sound pressure levels in dBA have been used to calculate the minimum and maximum L_{eq} averaged over 1-hour intervals. Table E also shows the L_{eq} , L_{max} , and L_{dn} , based on the entire measurement time. The L_{dn} was calculated through use of the hourly L_{eq} shown below in Table F that was entered into Equation 2-23 from *Technical Noise Supplement to the Traffic Noise Analysis Protocol (TeNS)*, prepared by Caltrans, September 2013. The noise monitoring data printouts are included in Appendix B. Since noise meters logged the noise levels at 1 second increments, only the noise measurement summary and the first 30 minutes of data is provided. The entire data set that is approximately 900 pages will be provided upon request.

Table E – Existing (Ambient) Noise Level Measurements

Site No.	Site Description	Average (dBA L _{eq})		1-hr Average (dBA L _{eq} /Time)		Average (dBA Ldn)
		Daytime ¹	Nighttime ²	Minimum	Maximum	
1	Located on a tree near the southeast corner of the project site, approximately 30 feet north of Center Street centerline.	63.8	59.1	52.3 2:56 a.m.	66.4 7:17 a.m.	66.6
2	Located on a power pole near the northwest corner of the project site approximately 30 feet east west of Mt Vernon Avenue centerline.	66.3	61.5	52.4 2:47 a.m.	68.6 1:46 p.m.	69.0
3	Located southwest of the project site on a tree in the front yard of 316 Whipporwill Drive, approximately 35 feet east of Whipporwill Drive centerline and 50 feet south of Center Street centerline.	63.8	56.1	47.7 2:14 a.m.	71.0 8:03 p.m.	64.8

Notes:

¹ Daytime defined as 7:00 a.m. to 10:00 p.m. (Section 9.52.040 of the Municipal Code)

² Nighttime define as 10:00 p.m. to 7:00 a.m. (Section 9.52.040 of the Municipal Code)

Source: Noise measurements taken between Wednesday, July 10 and Thursday, July 11, 2019.

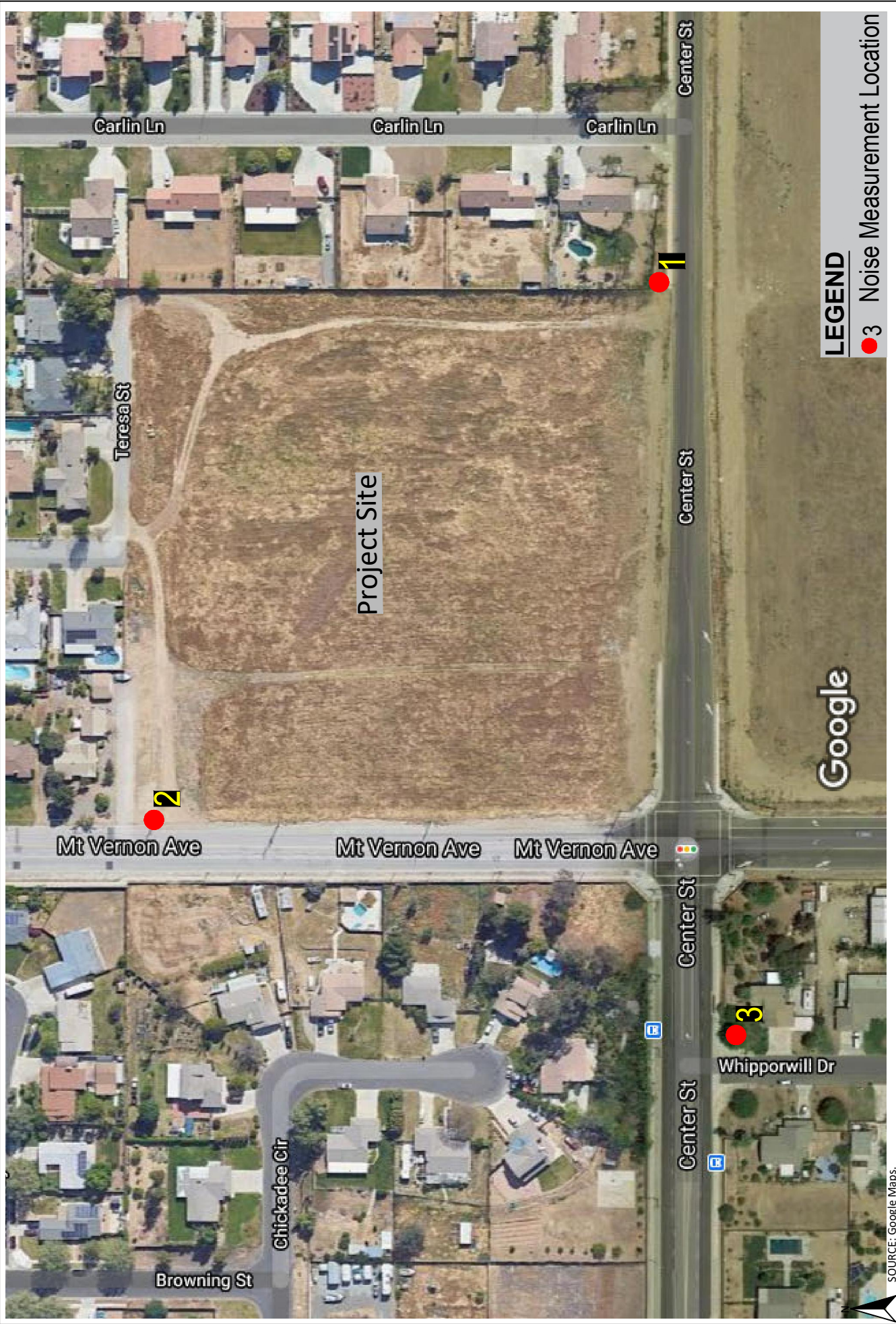
Table E shows that currently, Noise Measurement 1, which was located near the southeast corner of the project site and Noise Measurement 2, which was located near the northwest corner of the project site, currently exceeds the County's 65 dBA Ldn residential exterior noise standard.

Table F – Existing (Ambient) Noise Level Measurements Hourly Data (Leq-hr)

Hour	Leq-hr		
	Site 1	Site 2	Site 3
1 pm - 2 pm ¹	64.4	68.5	60.7
2 pm - 3 pm	63.8	66.2	63.2
3 pm - 4 pm	64.6	67.0	60.3
4 pm - 5 pm	63.1	67.9	62.1
5 pm - 6 pm	63.8	67.5	61.1
6 pm - 7 pm	61.9	66.9	61.2
7 pm - 8 pm	62.8	65.3	59.7
8 pm - 9 pm	64.9	65.8	71.0
9 pm - 10 pm	62.8	63.6	55.6
10 pm - 11 pm	60.4	61.4	52.5
11 pm - 12 am	56.7	62.8	54.4
12 am - 1 am	58.9	59.4	57.8
1 am - 2 am	53.7	59.8	50.3
2 am - 3 am	53.1	53.5	47.8
3 am - 4 am	53.9	57.9	52.3
4 am - 5 am	57.5	60.2	53.7
5 am - 6 am	61.2	63.8	58.2
6 am - 7 am	63.9	65.3	61.3
7 am - 8 am	66.1	65.9	65.5
8 am - 9 am	64.8	65.4	63.1
9 am - 10 am	63.2	64.7	59.8
10 am - 11 am	62.8	65.0	62.7
11 am - 12 pm	63.5	65.4	61.8
12 pm - 1 pm	63.1	65.1	64.1

Notes:

¹ Sites 1, 2 and 3 were averaged over less than hour of data.



LEGEND

- 3 Noise Measurement Location

Figure 5
Filed Noise Monitoring Locations

6.0 MODELING PARAMETERS AND ASSUMPTIONS

6.1 Construction Noise

The construction activities for the proposed project consists of site preparation and grading of the project site, building construction and application of architectural coatings to the proposed structures, and paving of the proposed parking lots, onsite roads and driveways.

The noise impacts from construction of the proposed project have been analyzed through use of the FHWA's Roadway Construction Noise Model (RCNM). The FHWA compiled noise measurement data regarding the noise generating characteristics of several different types of construction equipment used during the Central Artery/Tunnel project in Boston. Table G below provides a list of the construction equipment anticipated to be used for each phase of construction as detailed in *Air Quality, Energy, and Greenhouse Gas Emissions Impact Analysis Highgrove Residential/Commercial Project* (Air Quality Analysis), prepared by Vista Environmental, May 3, 2021.

Table G – Construction Equipment Noise Emissions and Usage Factors

Equipment Description	Number of Equipment	Acoustical Use Factor ¹ (percent)	Spec 721.560 Lmax at 50 feet ² (dBA, slow ³)	Actual Measured Lmax at 50 feet ⁴ (dBA, slow ³)
Site Preparation				
Rubber Tired Dozer	3	40	85	82
Tractor, Loader or Backhoe ⁵	4	40	84	N/A
Grading				
Excavator	1	40	85	81
Grader	1	40	85	83
Rubber Tired Dozer	1	40	85	82
Tractor, Loader or Backhoe ⁵	3	40	84	N/A
Building Construction				
Crane	1	16	85	81
Forklift (Gradall)	3	40	85	83
Generator	1	50	82	81
Tractor, Loader or Backhoe ⁵	3	40	84	N/A
Welder	1	40	73	74
Paving				
Paver	2	50	85	77
Paving Equipment	2	50	85	77
Roller	2	20	85	80
Architectural Coating				
Air Compressor	1	40	80	78

Notes:

¹ Acoustical use factor is the percentage of time each piece of equipment is operational during a typical workday.

² Spec 721.560 is the equipment noise level utilized by the RCNM program.

³ The "slow" response averages sound levels over 1-second increments. A "fast" response averages sound levels over 0.125-second increments.

⁴ Actual Measured is the average noise level measured of each piece of equipment during the Central Artery/Tunnel project in Boston, Massachusetts primarily during the 1990s.

⁵ For the tractor/loader/backhoe, the tractor noise level was utilized, since it is the loudest of the three types of equipment.

Source: Federal Highway Administration, 2006 and CalEEMod default equipment mix.

Table G also shows the associated measured noise emissions for each piece of equipment from the RCNM model and measured percentage of typical equipment use per day. Construction noise impacts to the nearby sensitive receptors have been calculated according to the equipment noise levels and usage factors listed in Table G and through use of the RCNM. For each phase of construction, all construction equipment was analyzed based on being placed in the middle of the project site, which is based on the analysis methodology detailed in FTA Manual for a General Assessment. However, in order to provide a conservative analysis, all equipment was analyzed, instead of just the two noisiest pieces of equipment as detailed in the FTA Manual.

6.2 Operations-Related Noise

FHWA Model Methodology

The proposed project would result in increases in traffic noise to the nearby roadways as well as introduce new sensitive receptors to the project site. The project impacts to the offsite roadways as well as the nearby roadway impacts to the proposed homes were analyzed through use of the FHWA Traffic Noise Prediction Model - FHWA-RD-77-108 (FHWA Model). The FHWA Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). Adjustments are then made to the reference energy mean emission level to account for: the roadway active width (i.e., the distance between the center of the outermost travel lanes on each side of the roadway), the total average daily traffic (ADT) and the percentage of ADT which flows during the day, evening and night, the travel speed, the vehicle mix on the roadway, which is a percentage of the volume of automobiles, medium trucks and heavy trucks, the roadway grade, the angle of view of the observer exposed to the roadway and site conditions ("hard" or "soft" relates to the absorption of the ground, pavement or landscaping).

To assess the roadway noise generation in a uniform manner, all vehicles have been analyzed in the FHWA Model at the single lane equivalent acoustic center of the roadway being analyzed. In order to determine the height above the road grade where the noise is being emitted from, each type of vehicle has been analyzed independently with autos at road grade, medium trucks at 2.3 feet above road grade, and heavy trucks at 8 feet above road grade. These elevations were determined through a noise-weighted average of the elevation of the exhaust pipe, tires and mechanical parts in the engine, which are the primary noise emitters from a vehicle.

The roadway noise calculations to the proposed homes and the project's traffic noise impacts to the nearby roads have been analyzed with different parameters that are detailed below.

FHWA Model Traffic Noise Prediction Model Inputs for the Noise Analysis to the Proposed Homes

Calculations of the expected future exterior and interior noise levels at the proposed homes were made through use of the FHWA traffic noise prediction model and the parameters outlined in Appendix I-1: Noise Element Data from the County of Riverside General Plan. According to these guidelines, the FHWA Model was set to "Hard" site conditions, which utilizes a noise propagation rate of 3 dB per doubling of distance between source and receiver, a highway design capacity for a level of service (LOS) "C" and a traffic speed of 40 miles per hour is used to determine the maximum future traffic noise impacts to the proposed residences. The Riverside County Circulation Element provides the following classifications, road widths and capacity in average daily traffic (ADT) for the adjacent roadways to the proposed project:

- Center Street: 2-lane Collector road with a width of 74 feet and LOS “C” capacity of 10,400 ADT; and
- Mt. Vernon: 4-lane Secondary with a width of 100 feet and LOS “C” capacity of 20,700 ADT.

The County provides the vehicle mixes to be used in the FHWA-RD-77-108 Model that are shown below in Table H.

Table H – County of Riverside Roadway Vehicle Mixes

Vehicle Type	Traffic Flow Distributions			Overall
	Day (7 a.m. to 7 p.m.)	Evening (7 p.m. to 10 p.m.)	Night (10 p.m. to 7 a.m.)	
Secondary, Collector or Smaller				
Automobiles	73.60%	13.60%	10.22%	97.42%
Medium Trucks	0.90%	0.04%	0.9%	1.84%
Heavy Trucks	0.35%	0.04%	0.35%	0.74%
Major, Arterial Highways, and Expressways				
Automobiles	69.50%	12.90%	9.60%	92.00%
Medium Trucks	1.44%	0.06%	1.50%	3.00%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%

Source: County of Riverside, 2015.

Per the County requirements both the exterior private yards and interior area noise impacts to the proposed homes were analyzed. The receptors for the exterior private yards were placed 10 feet behind the noise barrier and 5 feet above ground. The receptors for the interior noise calculations were based on the proposed site plan distances to the center of the nearest rooms in representative homes were placed behind the proposed backyard wall locations. The first-floor receptors were placed 5 feet above pad elevation and the second-floor receptors were placed 14.5 feet above pad elevation.

FHWA Model Traffic Noise Prediction Model Inputs for Project Generated Trips to Nearby Roads

The roadway parameters used for the analysis of the noise impacts created by project generated vehicle trips are presented in Table I. The roadway classifications and associated road widths are based on the County’s General Plan Circulation Element. The roadway speeds are based on the posted speed limits. The distance to the nearest sensitive receptor was determined by measuring the distance from the roadway centerline to the nearest residence. Since the study area is located in a suburban environment and landscaping or natural vegetation exists along the sides of all analyzed roadways, “Soft” site conditions were modeled.

Table I – FHWA Model Project Generated Vehicle Trips Roadway Parameters

Roadway	Segment	General Plan Classification	Vehicle Speed (MPH)	Distance to Nearest Receptor ¹ (feet)
Michigan Avenue	North of Center Street	Collector	25	55
Michigan Avenue	South of Center Street	Collector	25	55
Mt. Vernon Avenue	North of Main Street	Secondary	40	65
Mt. Vernon Avenue	North of Project Driveway 1	Secondary	45	75
Mt. Vernon Avenue	North of Center Street	Secondary	45	145
Mt. Vernon Avenue	South of Center Street	Secondary	45	145
Main Street	West of Mt. Vernon Avenue	Secondary	40	65
Center Street	West of Michigan Avenue	Secondary	40	55
Center Street	West of Mt. Vernon Avenue	Secondary	40	70
Center Street	East of Project Driveway 4	Collector	40	65

Notes:

¹ Distance measured from nearest residential structure to centerline of roadway.

Source: County of Riverside, 2015.

The average daily traffic (ADT) volumes were obtained from the *TTM 37743 – Highgrove Traffic Impact Analysis* (Traffic Impact Analysis), prepared by Trames Solutions, Inc., June 4, 2020. The ADT volumes were calculated by multiplying the PM peak hour volumes by 12. The ADT volumes used in this analysis are shown in Table J. The vehicle mixes utilized to analyze the noise impacts created by project generated vehicle trips are the same vehicle mixes provided by the County that are shown above in Table H.

Table J – FHWA Model Average Daily Traffic Volumes

Roadway	Segment	Average Daily Traffic Volumes					
		Existing	Existing + Project	Ambient	Ambient + Project	Cumulative	Cumulative + Project
Michigan Avenue	North of Center Street	2,820	3,040	2,910	3,130	3,320	3,540
Michigan Avenue	South of Center Street	1,120	1,340	1,150	1,370	1,200	1,420
Mt. Vernon Avenue	North of Main Street	9,840	10,270	10,230	10,660	11,400	11,830
Mt. Vernon Avenue	North of Project Driveway 1	8,090	8,630	8,390	8,930	9,530	10,070
Mt. Vernon Avenue	North of Center Street	8,090	9,060	8,230	9,200	9,390	10,360
Mt. Vernon Avenue	South of Center Street	6,240	6,670	6,470	6,900	7,240	7,670
Main Street	West of Mt. Vernon Avenue	1,880	1,990	1,950	2,060	2,660	2,770
Center Street	West of Michigan Avenue	5,220	5,870	5,370	6,020	6,480	7,130
Center Street	West of Mt. Vernon Avenue	3,060	4,140	3,130	4,210	3,880	4,960
Center Street	East of Project Driveway 4	2,240	2,350	2,330	2,440	2,690	2,800

Source: Trames Solutions, Inc., 2020.

6.3 Exterior to Interior Attenuation Rates for the Proposed Homes

In order to calculate the exterior to interior attenuation rates for the potentially noise impacted single-family homes, which is limited to Plan 1, the architectural plans were utilized to calculate the exterior to interior noise reduction rates of the potentially noise impacted second floor rooms of Plan 1. For each room the floor area covered by carpet was calculated along with the total square footage of the ceilings and walls, in order to determine the sound absorption rate of the room. The area of exterior walls and windows were also calculated in order to determine the exterior transmission levels. The windows and exterior doors were based on standard dual pane windows and doors that have a minimum sound transmission class (STC) rating of 26 STC. Project Design Feature 1 was included to ensure that dual paned windows with a minimum 26 STC rating are installed in the proposed homes. The walls were based on standard wall construction that includes a stucco exterior, ½-inch sheer panel, R-13 insulation, and ½-inch drywall on the interior. The exterior to interior noise reduction was then determined by combining the calculated room absorption rate to the exterior to interior transmission calculations.

Table K shows the calculated exterior to interior noise reduction rates for the potentially impacted second floor rooms for Plan 1, which are limited to the rooms facing Mt Vernon Avenue. The spreadsheet showing the exterior to interior attenuation rate calculations are provided in Appendix C. The noise reduction rates provided in Table K are based on a “windows closed” condition, where a forced air heating and air conditioning system is provided so that the windows are not required for ventilation. In order to ensure that the “windows closed” condition is met, Project Design Feature 2 has been included in this analysis.

Table K – Proposed Single-Family Homes Exterior to Interior Noise Reduction Rates

Plan	Floor	Room Type	Exterior to Interior Noise Reduction (dBA) With STC 26 Windows/Doors ¹
Plan 1	Second	Bedroom 2	31
		Bedroom 3	30
Minimum Exterior to Interior Noise Reduction			30

Notes:

¹ Based on standard dual pane windows with a 26 STC rating, which are required per Title 24 energy saving requirements.

Source: Kinsler, 2000; Harris, 1994.

6.4 Vibration

Construction activity can result in varying degrees of ground vibration, depending on the equipment used on the site. Operation of construction equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Buildings in the vicinity of the construction site respond to these vibrations with varying results ranging from no perceptible effects at the low levels to damage at the highest levels. Table L gives approximate vibration levels for particular construction activities. The data in Table L provides a reasonable estimate for a wide range of soil conditions.

Table L – Vibration Source Levels for Construction Equipment

Equipment		Peak Particle Velocity at 25 feet (inches/second)	Approximate Vibration Level (L_v) at 25 feet
Pile driver (impact)	Upper range	1.518	112
	typical	0.644	104
Pile driver (sonic)	Upper range	0.734	105
	typical	0.170	93
Clam shovel drop (slurry wall)		0.202	94
Vibratory Roller		0.210	94
Hoe Ram		0.089	87
Large bulldozer		0.089	87
Caisson drill		0.089	87
Loaded trucks		0.076	86
Jackhammer		0.035	79
Small bulldozer		0.003	58

Source: Federal Transit Administration, September 2018.

The construction-related vibration impacts have been calculated through the vibration levels shown above in Table L and through typical vibration propagation rates. The equipment assumptions were based on the equipment lists provided above in Table G.

7.0 IMPACT ANALYSIS

7.1 CEQA Thresholds of Significance

Consistent with the California Environmental Quality Act (CEQA) and the State CEQA Guidelines, a significant impact related to noise would occur if a proposed project is determined to result in:

- Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Generation of excessive groundborne vibration or groundborne noise levels; or
- For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.

7.2 Generation of Noise Levels in Excess of Standards

The proposed project would not generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. The following section calculates the potential noise emissions associated with the temporary construction activities and long-term operations of the proposed project and compares the noise levels to the County standards.

Construction-Related Noise

The construction activities for the proposed project are anticipated to include site preparation and grading of the project site, building construction and application of architectural coatings to the proposed structures, and paving of the proposed parking lots, onsite roads and driveways. Noise impacts from construction activities associated with the proposed project would be a function of the noise generated by construction equipment, equipment location, sensitivity of nearby land uses, and the timing and duration of the construction activities. The nearest sensitive receptors to the project site are single-family homes located adjacent to the north and east sides of the project site. There are also single-family homes located as near as 80 feet to the west of the project site that are on the west side of Mt Vernon Avenue.

General Plan Policy N 13.1 requires that construction noise impacts to be minimized on adjacent uses through acceptable practices. General Plan Policy N 13.2 requires that construction activities are limited to established hours of operation in order to mitigate the generation of excessive or adverse noise impacts on the surrounding community. Section 9.52.020(I) of the Municipal Code provides the established hours of construction operations, and details that construction activities that occurs between 6:00 a.m. and 6:00 p.m. during the months of June through September and between 7:00 a.m. and 6:00 p.m. during the months of October through May are exempt from the Noise Ordinance. General Plan Policy N 13.3 requires construction of subdivisions that are adjacent to occupied noise sensitive land uses to submit a construction-related noise mitigation plan to the County that depicts how construction noise will be mitigated through use of temporary noise fences, preferred location of equipment and use of current noise suppression technology and equipment. Project Design Feature 3 has been included in this analysis to ensure compliance with General Plan Policy N 13.3 that requires the County to review and approve a construction-related noise mitigation plan, prior to issuance of the grading permit for the proposed project. General Plan Policy 13.4 requires that all construction equipment utilize noise reduction features

(e.g. mufflers and engine shrouds) that are no less effectively than what was originally installed by the manufacturer. As detailed above, through implementation of Project Design Feature 3, construction of the proposed project would not exceed the applicable standards in the General Plan and Municipal Code.

However, the County construction noise standards do not provide any limits to the noise levels that may be created from construction activities and even with adherence to the County standards, the resultant construction noise levels may result in a significant substantial temporary noise increase to the nearby residents. In order to determine if the proposed construction activities would create a significant substantial temporary noise increase, the FTA construction noise criteria thresholds detailed above in Section 4.1 have been utilized, which shows that a significant construction noise impact would occur if construction noise exceeds 80 dBA during the daytime at any of the nearby homes.

Construction noise impacts to the nearby sensitive receptors have been calculated through use of the RCNM and the parameters and assumptions detailed in Section 6.1 of this report including Table G – Construction Equipment Noise Emissions and Usage Factors. The results are shown below in Table M and the RCNM printouts are provided in Appendix D.

Table M – Construction Noise Levels at the Nearby Homes

Construction Phase	Construction Noise Level (dBA Leq) at:		
	Homes to North ¹	Homes to East ²	Homes to West ³
Site Preparation ²	70	70	70
Grading ²	70	70	69
Building Construction	71	71	70
Paving	66	66	65
Painting	58	58	57
FTA Construction Noise Threshold⁴	80	80	80
Exceed Thresholds?	No	No	No

¹ The distance from the center of the project site to the homes to the north was measured at 320 feet.

² The distance from the center of the project site to the homes to the east was measured at 315 feet.

³ The distance from the center of the project site to the homes to the west was measured at 350 feet.

⁴ FTA Construction Noise Threshold obtained from Table B above.

Source: RCNM, Federal Highway Administration, 2006

Table M shows that the greatest noise impacts would occur during the building construction phase of construction, with a noise level as high as 70 dBA Leq at the nearest homes that are located adjacent to the north and east sides of the project site. All calculated construction noise levels shown in Table M are within the FTA daytime construction noise standard of 80 dBA. Therefore, through adherence to the allowable construction times detailed in Section 9.52.020(l) of the Municipal Code and through implementation of Project Design Feature 3, that requires the preparation of a construction-related noise mitigation plan, prior to the issuance of the grading plan for the proposed project, the proposed project would not create a substantial temporary increase in ambient noise levels from construction of the proposed project. Impacts would be less than significant.

Operational-Related Noise

The proposed project would consist of the development of a convenience store (7-Eleven) with 12 fueling position gas station, an 8,373 square foot retail building, and 52 single-family homes. Potential noise impacts associated with the operations of the proposed project would be from project-generated

vehicular traffic on the nearby roadways and from onsite activities, which have been analyzed separately below. In addition, the proposed homes would be adjacent to Mt Vernon Avenue and Center Street, which may create exterior and interior noise levels in excess of County standards at the proposed homes, which also has been analyzed below.

Roadway Vehicular Noise Impacts to Nearby Existing Homes

Vehicle noise is a combination of the noise produced by the engine, exhaust and tires. The level of traffic noise depends on three primary factors (1) the volume of traffic, (2) the speed of traffic, and (3) the number of trucks in the flow of traffic. The proposed project does not propose any uses that would require a substantial number of truck trips and the proposed project would not alter the speed limit on any existing roadway so the proposed project’s potential offsite noise impacts have been focused on the noise impacts associated with the change of volume of traffic that would occur with development of the proposed project.

General Plan Policy N 9.3 requires development projects that generates increased traffic and subsequent increases in the ambient noise level adjacent to noise-sensitive land uses to provide appropriate mitigation measures. However, General Plan Policy 9.3, nor any other General Plan policy defines what constitutes a “substantial permanent increase to ambient noise levels”. As such, this impact analysis has utilized guidance from the Federal Transit Administration for a moderate impact that has been detailed above in Table A that shows that the project contribution to the noise environment can range between 0 and 7 dB, which is dependent on the existing roadway noise levels.

The potential offsite traffic noise impacts created by the on-going operations of the proposed project have been analyzed through utilization of the FHWA model and parameters described above in Section 6.2 and the FHWA model traffic noise calculation spreadsheets are provided in Appendix E. The proposed project’s potential offsite traffic noise impacts have been analyzed for the existing year, existing plus ambient year 2022, and existing plus ambient year 2022 plus cumulative projects scenarios that are discussed separately below.

Existing Conditions

The proposed project’s potential offsite traffic noise impacts have been calculated through a comparison of the Existing scenario to the Existing With Project scenario. The results of this comparison are shown in Table N.

Table N – Existing Year Traffic Noise Contributions

Roadway	Segment	dBA Ldn at Nearest Receptor ¹			Increase Threshold ²
		Existing	Existing Plus Project	Project Contribution	
Michigan Avenue	North of Center Street	51.7	52.1	0.3	+5 dBA
Michigan Avenue	South of Center Street	49.6	50.3	0.8	+5 dBA
Mt. Vernon Avenue	North of Main Street	62.4	62.6	0.2	+2 dBA
Mt. Vernon Avenue	North of Project Driveway 1	61.9	62.2	0.3	+2 dBA
Mt. Vernon Avenue	North of Center Street	57.5	58.0	0.5	+3 dBA
Mt. Vernon Avenue	South of Center Street	56.3	56.6	0.3	+3 dBA
Main Street	West of Mt. Vernon Avenue	55.3	55.5	0.2	+3 dBA
Center Street	West of Michigan Avenue	60.9	61.4	0.5	+2 dBA

Table N – Existing Year Traffic Noise Contributions

Roadway	Segment	dBA Ldn at Nearest Receptor ¹			Increase Threshold ²
		Existing	Existing Plus Project	Project Contribution	
Center Street	West of Mt. Vernon Avenue	56.8	58.2	1.3	+3 dBA
Center Street	East of Project Driveway 4	55.5	55.7	0.2	+3 dBA

Notes:

¹ Distance to nearest residential use shown in Table I, does not take into account existing noise barriers.

² Increase Threshold obtained from the FTA's allowable noise impact exposures detailed above in Table A.

Source: FHWA Traffic Noise Prediction Model FHWA-RD-77-108.

Table N shows that the proposed project's permanent roadway noise increases to the nearby homes from the generation of additional vehicular traffic would not exceed the FTA's allowable increase thresholds detailed above. Therefore, the proposed project would not result in a substantial permanent increase in ambient noise levels for the existing conditions. Impacts would be less than significant.

Existing Plus Ambient Growth Year 2022 Conditions

The proposed project's potential offsite traffic noise impacts have been calculated through a comparison of the existing plus ambient growth year 2022 scenario to the existing plus ambient growth year 2022 with project scenario. The results of this comparison are shown in Table O.

Table O – Existing Plus Ambient Growth Year 2022 Traffic Noise Contributions

Roadway	Segment	dBA Ldn at Nearest Receptor ¹			Increase Threshold ²
		Ambient Without Project	Ambient With Project	Project Contribution	
Michigan Avenue	North of Center Street	51.9	52.2	0.3	+5 dBA
Michigan Avenue	South of Center Street	49.7	50.4	0.8	+5 dBA
Mt. Vernon Avenue	North of Main Street	62.6	62.8	0.2	+2 dBA
Mt. Vernon Avenue	North of Project Driveway 1	62.1	62.3	0.3	+2 dBA
Mt. Vernon Avenue	North of Center Street	57.5	58.0	0.5	+3 dBA
Mt. Vernon Avenue	South of Center Street	56.5	56.8	0.3	+3 dBA
Main Street	West of Mt. Vernon Avenue	55.4	55.6	0.2	+3 dBA
Center Street	West of Michigan Avenue	61.0	61.5	0.5	+2 dBA
Center Street	West of Mt. Vernon Avenue	56.9	58.2	1.3	+3 dBA
Center Street	East of Project Driveway 4	55.6	55.8	0.2	+3 dBA

Notes:

¹ Distance to nearest residential use shown in Table I, does not take into account existing noise barriers.

² Increase Threshold obtained from the FTA's allowable noise impact exposures detailed above in Table A.

Source: FHWA Traffic Noise Prediction Model FHWA-RD-77-108.

Table O shows that the proposed project's permanent noise increases to the nearby homes from the generation of additional vehicular traffic would not exceed the FTA's allowable increase thresholds detailed above. Therefore, the proposed project would not result in a substantial permanent increase in ambient noise levels for the existing plus ambient growth year 2022 conditions. Impacts would be less than significant.

Existing Plus Ambient Growth Plus Cumulative Projects Year 2022 Conditions

The proposed project's potential offsite traffic noise impacts have been calculated through a comparison of the existing plus ambient growth plus cumulative year 2022 scenario to the existing plus ambient growth plus cumulative year 2022 with project scenario. The results of this comparison are shown in Table P.

Table P – Existing Plus Ambient Growth Plus Cumulative Projects Traffic Noise Contributions

Roadway	Segment	dBA Ldn at Nearest Receptor ¹			Increase Threshold ²
		Cumulative Without Project	Cumulative With Project	Project Contribution	
Michigan Avenue	North of Center Street	52.5	52.7	0.2	+5 dBA
Michigan Avenue	South of Center Street	49.9	50.6	0.7	+5 dBA
Mt. Vernon Avenue	North of Main Street	63.1	63.2	0.1	+2 dBA
Mt. Vernon Avenue	North of Project Driveway 1	62.6	62.9	0.3	+2 dBA
Mt. Vernon Avenue	North of Center Street	58.1	58.5	0.4	+3 dBA
Mt. Vernon Avenue	South of Center Street	57.0	57.2	0.2	+3 dBA
Main Street	West of Mt. Vernon Avenue	56.8	56.9	0.1	+3 dBA
Center Street	West of Michigan Avenue	61.8	62.2	0.4	+2 dBA
Center Street	West of Mt. Vernon Avenue	57.9	58.9	1.0	+3 dBA
Center Street	East of Project Driveway 4	56.3	56.4	0.1	+3 dBA

Notes:

¹ Distance to nearest residential use shown in Table I, does not take into account existing noise barriers.

² Increase Threshold obtained from the FTA's allowable noise impact exposures detailed above in Table A.

Source: FHWA Traffic Noise Prediction Model FHWA-RD-77-108.

Table P shows that the proposed project's permanent noise increases to the nearby homes from the generation of additional vehicular traffic would not exceed the FTA's allowable increase thresholds detailed above. Therefore, the proposed project would not result in a substantial permanent increase in ambient noise levels for the existing plus ambient growth plus cumulative year 2022 conditions. Impacts would be less than significant.

Proposed Commercial Uses Onsite Noise Sources

The operation of the proposed project may create an increase in onsite noise levels from the operation of rooftop mechanical equipment, parking lots, delivery trucks, gas pumps, and possible drive thru speaker at the retail building. Section 9.52.040 of the County's Municipal Code limits noise created by the proposed commercial uses on the nearby existing and proposed residential properties to 55 dBA between 7 a.m. and 10 p.m. and to 45 dBA between 10 p.m. and 7 a.m..

In order to determine the noise impacts from the operation of rooftop mechanical equipment, parking lots, delivery trucks, gas pumps, and possible drive thru speaker, reference noise measurements were taken of each noise source and are shown in Table Q. In order to account for the noise reduction provided by the existing 6-foot high sound walls on the south and east property lines, the wall attenuation equations from the *Technical Noise Supplement to the Traffic Noise Analysis Protocol (TeNS)*, prepared by Caltrans, September 2013, were utilized and the noise calculation spreadsheet along with the reference noise measurements are provided in Appendix F. It should be noted that the proposed plans show a wall between the commercial and residential area on the project site would be a combination retaining wall

and a 6-foot high free-standing wall and that the elevation of the proposed homes would be as much as three feet higher than the commercial area. Project Design Feature 4 has been included to ensure that that combination retaining wall and 6-foot high free-standing wall located between the commercial and residential portions of the project will be constructed. Two receivers were placed at representative existing homes located west of the proposed commercial uses and two receivers were placed at representative proposed homes located east of the proposed commercial uses. The locations of the representative receivers are shown in Figure 6.

Table Q – Operational Commercial Uses Noise Levels at the Existing and Proposed Homes

Noise Source	Operational Noise Levels ¹ (dBA Leq)			
	OFF 1 –Home to West ² (North)	OFF 2 –Home to West ² (South)	ON 3 – Home to East ³ (North)	ON 4 – Home to East ³ (South)
Rooftop Equipment ⁴	23.4	23.8	30.4	28.3
Parking Lot ⁵	28.3	26.1	30.2	36.5
Truck Delivery ⁶	34.4	33.9	36.4	41.1
Fueling Pumps ⁷	15.8	23.6	18.0	32.2
Drive Thru Speaker ⁸	25.9	23.0	43.2	25.5
Combined Noise Level	36.1	35.4	44.4	43.0
County Noise Standard (day/night)	55/45	55/45	55/45	55/45
Exceed County Noise Standard?	No/No	No/No	No/No	No/No

Notes:

¹ The locations of Receptors 1 – 4 are shown in Figure 6.

² The calculated noise levels account for the noise reduction provided by the existing 6 foot high wall on the west side of Mt Vernon Avenue.

³ The calculated noise levels account for the noise reduction provided by the combined retaining wall and free-standing wall, where the free-standing portion is a minimum 6 feet high, see Project Design Feature 4.

⁴ Rooftop equipment is based on a reference noise measurement of 65.1 dBA at 6 feet.

⁵ Parking lot is based on a reference noise measurement of 63.1 dBA at 5 feet.

⁶ Truck delivery is based on a reference noise measurement of 54.8 dBA at 30 feet.

⁷ Fueling pumps is based on a reference noise measurement of 60.3 dBA at 5 feet.

⁸ Drive thru speaker is based on a reference noise measurement of 61.2 dBA at 10 feet.

Source: Noise calculation methodology from Caltrans, 2013 (see Appendix F).

Table Q shows that with implementation of Project Design Feature 4, the highest noise level created from the proposed commercial uses would occur at ON 3, which is located immediately to the east of the proposed drive thru speaker that would be located on the east side of the proposed retail building, where the combined noise from all sources would be 44.4 dBA Leq. All potential noise sources from the proposed commercial uses would be within the County’s residential noise standards of 55 dBA between 7 a.m. and 10 p.m. and 45 dBA between 10 p.m. and 7 a.m. at both the nearest proposed homes and nearest offsite existing homes to each noise source. Therefore, with implementation of Project Design Feature 3, the onsite operational noise impacts would be less than significant.

Roadway Vehicular Noise Impacts to Proposed Homes

The proposed project would consist of the development of a mixed-use development that would include 52 single-family homes. The County’s General Plan requires that the interior noise levels in new residential dwellings shall not exceed 45 dB Ldn and that the exterior backyard area noise levels shall not exceed 65 dB Ldn. It is anticipated that the primary source of traffic noise to the project site will be from Mt Vernon Avenue and Center Street. The proposed homes will also experience some background traffic noise effects from the proposed project’s internal roadways and neighboring residential roadways. As the traffic on these local streets would consist of low traffic volumes at slower speeds and the traffic noise

from these roads would not make a significant contribution to the noise environment, the noise levels from these local roads were not analyzed. The FHWA traffic noise prediction model parameters used in this analysis are discussed above in detail in Section 6.2 and the FHWA model printouts are provided in Appendix G.

Roadway Noise Impacts to the Proposed Homes Backyards

The anticipated noise levels have been calculated for the backyards that are adjacent to Center Street and Mt Vernon Avenue and the results are shown below in Table R.

Table R – Proposed Homes Exterior Backyard Noise Levels from Nearby Roads

Building Number	Roadway	Exterior Backyard Noise Levels (dBA Ldn)		Minimum Sound Wall Height (feet)
		Without Sound Wall	With Sound Wall	
1	Center Street	65	--	--
2	Center Street	65	--	--
3	Center Street	65	--	--
4	Center Street	65	--	--
5	Center Street	65	--	--
15	Mt Vernon Avenue	67	60	5.0
36	Center Street	65	--	--

Notes:
 Exceedance of County’s 65 dBA Ldn residential exterior noise standard shown in **bold**.
 Source: FHWA RD-77-108 Model.

Table R shows that only the exterior private backyard noise level of Building Number 15 that is adjacent to Mt Vernon Avenue would exceed the County’s 65 dBA Ldn noise standard without construction of any sound walls. This would be considered a significant impact.

Mitigation Measure 1 is provided that would require the applicant to construct a minimum 5.0-foot high solid wall on the west side of the Lot for Building 15 that is adjacent to Mt Vernon Avenue.

Table R shows that with application of the proposed sound wall specified in Mitigation Measure 1, the noise levels at the proposed homes backyard areas would be reduced to within the County’s exterior residential noise standard. Impacts would be less than significant after implementation of Mitigation Measure 1.

Roadway Noise Impacts to the Proposed Homes Interior Areas

To assess the interior noise levels related to compliance with the dBA Ldn interior noise standard, the same proposed homes analyzed for the exterior private backyard analysis were also analyzed for their interior noise levels. The exterior noise level at the façade of the first and second floors were calculated through use of the same methodology detailed above for the outdoor noise calculations and in Section 6.2 above and the results are shown below in Table S. Per County of Riverside guidelines, the interior noise levels were calculated based on 20 dB of attenuation, which has been determined as the noise attenuation provided by standard residential architecture as defined in the County of Riverside guidelines. Table S also show the interior noise levels calculated based on 30 dB of attenuation, which is the minimum attenuation rate calculated for the proposed Plan 1 homes above in Section 6.3.

Table S – Proposed Homes Interior Noise Levels from Nearby Roads

Building Number	Roadway	Floor	Exterior Noise Level at Building Façade (dBA Ldn)	Interior Noise Levels (dBA Ldn)	
				Standard Design ¹	Proposed Design ²
1	Center Street	1	65	45	--
		2	65	45	--
2	Center Street	1	65	45	--
		2	65	45	--
3	Center Street	1	65	45	--
		2	65	45	--
4	Center Street	1	65	45	--
		2	65	45	--
5	Center Street	1	65	45	--
		2	65	45	--
15	Mt Vernon Avenue	1	62	42	--
		2	67	47	37
36	Center Street	1	65	45	--
		2	65	45	--

Notes:

¹ Standard Design is based on 20 dBA of noise reduction per County of Riverside General Plan.

² Proposed Design is based on .30 dBA of noise reduction (see Section 6.3 above for calculations).

Exceedance of County 45 dBA Ldn noise standard shown in **bold**.

Source: FHWA RD-77-108 Model.

Table S shows that based on the County of Riverside guidelines for standard residential design of 20 dB of noise attenuation, that only Building 15 that is adjacent to Mt Vernon Avenue would exceed the County’s 45 dBA Ldn interior noise standard. The County of Riverside guidelines also details that noise analyses may utilize higher exterior to interior attenuation rates if the proposed homes are calculated through modeling, which has been provided above in Section 6.3 of this analysis and shows that the proposed Plan1, which is proposed for Lot 1 will provide a minimum of 30 STC of noise reduction. It should be noted that the modeling of the proposed homes provided in Section 6.2 was limited to the second floor rooms facing Mt Vernon Avenue, since those are the only rooms shown above in Table S that have the potential to exceed the interior noise standards. Table S shows with utilization of the calculated noise reduction rates for the proposed homes (Proposed Design) that the interior noise level would be within the County’s 45 dBA Ldn interior noise standard. Impacts would be less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Mitigation Measure 1:

The project applicant shall construct a minimum 5.0-foot high solid wall on the west side of the Lot for Building 15 that is adjacent to Mt Vernon Avenue. The wall shall be constructed of concrete masonry units (CMUs) and shall be free of any decorative cutouts or openings.

Level of Significance After Mitigation

Less than significant impact.

7.3 Generation of Excessive Groundborne Vibration

The proposed project would not expose persons to or generation of excessive groundborne vibration or groundborne noise levels. The following section analyzes the potential vibration impacts associated with the construction and operations of the proposed project.

Construction-Related Vibration Impacts

The construction activities for the proposed project are anticipated to include site preparation and grading of the project site, building construction and application of architectural coatings to the proposed structures, and paving of the proposed parking lots, onsite roads and driveways. Vibration impacts from construction activities associated with the proposed project would typically be created from the operation of heavy off-road equipment. The nearest sensitive receptors to the project site are single-family homes located adjacent to the north and east sides of the project site. There are also single-family homes located as near as 80 feet to the west of the project site that are on the west side of Mt Vernon Avenue.

Since neither the County's General Plan nor the Municipal Code provide a quantifiable vibration threshold for construction equipment, Caltrans guidance that is detailed above in Section 4.2 has been utilized, which defines the threshold of perception from transient sources at 0.25 inch per second PPV.

The primary source of vibration during construction would be from the operation of a bulldozer. From Table L above a large bulldozer would create a vibration level of 0.089 inch per second PPV at 25 feet. Based on typical propagation rates, the vibration level at the nearest offsite receptor that has been modeled as 10 feet away per guidance provided in the County of Riverside General Plan would be 0.24 inch per second PPV. The vibration level at the nearest offsite receptor would be within the 0.25 inch per second PPV threshold detailed above. Therefore, a less than significant vibration impact is anticipated from construction of the proposed project.

Operations-Related Vibration Impacts

The proposed project would consist of the development of a convenience store (7-Eleven) with 12 fueling position gas station, an 8,373 square foot retail building, and 52 single-family homes. The commercial portion of the project would result in the regular operation of delivery trucks on the project site, which are a known source of vibration. The proposed homes would be located as near as 45 feet from where the delivery trucks would typically operate on the commercial portion of the project site.

Caltrans has done extensive research on vibration level created along freeways and State Routes and their vibration measurements of roads have never exceeded 0.08 inches per second PPV at 15 feet from the center of the nearest lane, with the worst combinations of heavy trucks. As detailed above, truck activities would occur onsite as near as 45 feet from the proposed homes. Based on typical propagation rates, the vibration level at the nearest proposed homes would be 0.02 inch per second PPV. Therefore, vibration created from operation of the proposed project would be within the 0.25 inch per second PPV threshold of detailed above. Impacts would be less than significant.

Level of Significance

Less than significant impact.

7.4 Aircraft Noise

The proposed project may expose people residing or working in the project area to excessive noise levels from aircraft. The nearest airport is Flabob Airport that is located as near as 5.4 miles southwest of the project site. The project site is located outside of the 60 dBA CNEL noise contours of Flabob Airport. No impacts would occur from aircraft noise.

Level of Significance

No impact.

8.0 REFERENCES

California Department of Transportation, *2016 Annual Average Daily Truck Traffic on the California State Highway System*, 2018.

California Department of Transportation (Caltrans), *Technical Noise Supplement to the Traffic Noise Analytics Protocol*, September 2013.

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

County of Riverside, *A Codification of the General Ordinances of Riverside County, California*, May 21, 2019.

County of Riverside, *County of Riverside General Plan*, December 2015.

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

Riverside County Airport Land Use Commission, *Riverside County Airport Land Use Compatibility Plan Policy Document*, January 2012.

Trames Solutions, Inc., *TTM 37743 – Highgrove Traffic Impact Analysis*, June 4, 2020.

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

Vista Environmental, *Air Quality, Energy, and Greenhouse Gas Emissions Impact Analysis Highgrove Residential/Commercial Project*, May 3, 2021.

APPENDIX A

Field Noise Measurements Photo Index



Noise Measurement Site 1 - looking north



Noise Measurement Site 1 - looking northeast



Noise Measurement Site 1 - looking east



Noise Measurement Site 1 - looking southeast



Noise Measurement Site 1 - looking south



Noise Measurement Site 1 - looking southwest



Noise Measurement Site 1 - looking west



Noise Measurement Site 1 - looking northwest



Noise Measurement Site 2 - looking north



Noise Measurement Site 2 - looking northeast



Noise Measurement Site 2 - looking east



Noise Measurement Site 2 - looking southeast



Noise Measurement Site 2 - looking south



Noise Measurement Site 2 - looking southwest



Noise Measurement Site 2 - looking west



Noise Measurement Site 2 - looking northwest



Noise Measurement Site 3 - looking north



Noise Measurement Site 3 - looking northeast



Noise Measurement Site 3 - looking east



Noise Measurement Site 3 - looking southeast



Noise Measurement Site 3 - looking south



Noise Measurement Site 3 - looking southwest



Noise Measurement Site 3 - looking west



Noise Measurement Site 3 - looking northwest

APPENDIX B

Field Noise Measurements Printouts

Site 1 - Near SE Corner of Project Site
 August 11, 2020 1:17:03 PM Leq Daytime = 63.8
 Impingement Time = 1 s Freq Weighting=A Leq Nighttime = 59.1
 Record Num = 86402 CNEL(24hr) = 67.1
 Leq = 62.6 Ldn(24hr) = 66.6
 Min = 33.9 Min Leq hr at 2:56 AM 52.3
 Max = 91.1 Max Leq hr at 7:17 AM 66.4

SPL	Time	Leq (1 hour Avg.)	Ldn CNEL
58.0	13:17:03		58.0
58.0	13:17:04		58.0
58.1	13:17:05		58.1
59.5	13:17:06		59.5
60.5	13:17:07		60.5
75.1	13:17:08		75.1
74.3	13:17:09		74.3
71.9	13:17:10		71.9
68.3	13:17:11		68.3
64.3	13:17:12		64.3
60.7	13:17:13		60.7
57.3	13:17:14		57.3
53.4	13:17:15		53.4
54.5	13:17:16		54.5
56.4	13:17:17		56.4
57.3	13:17:18		57.3
56.9	13:17:19		56.9
55.8	13:17:20		55.8
54.4	13:17:21		54.4
58.9	13:17:22		58.9
62.4	13:17:23		62.4
59.8	13:17:24		59.8
57.8	13:17:25		57.8
56.4	13:17:26		56.4
54.3	13:17:27		54.3
55.5	13:17:28		55.5
54.1	13:17:29		54.1
57.7	13:17:30		57.7
57.8	13:17:31		57.8
57.3	13:17:32		57.3
56.6	13:17:33		56.6
57.3	13:17:34		57.3
59.0	13:17:35		59.0
58.3	13:17:36		58.3
58.6	13:17:37		58.6
56.2	13:17:38		56.2
56.1	13:17:39		56.1
54.2	13:17:40		54.2
52.2	13:17:41		52.2
57.2	13:17:42		57.2
55.8	13:17:43		55.8
57.2	13:17:44		57.2
58.1	13:17:45		58.1
57.3	13:17:46		57.3
59.6	13:17:47		59.6
64.8	13:17:48		64.8
65.5	13:17:49		65.5
64.3	13:17:50		64.3
63.4	13:17:51		63.4
63.8	13:17:52		63.8
68.7	13:17:53		68.7
69.4	13:17:54		69.4
65.7	13:17:55		65.7
64.8	13:17:56		64.8
62.6	13:17:57		62.6
61.2	13:17:58		61.2
60.9	13:17:59		60.9
64.5	13:18:00		64.5
67.7	13:18:01		67.7
67.8	13:18:02		67.8
65.4	13:18:03		65.4
68.8	13:18:04		68.8
71.0	13:18:05		71.0
67.8	13:18:06		67.8
64.7	13:18:07		64.7
60.4	13:18:08		60.4
58.6	13:18:09		58.6
63.4	13:18:10		63.4
60.9	13:18:11		60.9
62.7	13:18:12		62.7
63.9	13:18:13		63.9
65.2	13:18:14		65.2
67.1	13:18:15		67.1
66.9	13:18:16		66.9
64.9	13:18:17		64.9
61.6	13:18:18		61.6
58.9	13:18:19		58.9
56.8	13:18:20		56.8
54.0	13:18:21		54.0
54.3	13:18:22		54.3
58.0	13:18:23		58.0
65.7	13:18:24		65.7
68.2	13:18:25		68.2
66.9	13:18:26		66.9
65.1	13:18:27		65.1
63.1	13:18:28		63.1
61.5	13:18:29		61.5
63.6	13:18:30		63.6
70.8	13:18:31		70.8
73.8	13:18:32		73.8
71.1	13:18:33		71.1
68.3	13:18:34		68.3
68.3	13:18:35		68.3
68.4	13:18:36		68.4
67.1	13:18:37		67.1
63.9	13:18:38		63.9
61.0	13:18:39		61.0
60.6	13:18:40		60.6
62.7	13:18:41		62.7
67.0	13:18:42		67.0
70.0	13:18:43		70.0
70.5	13:18:44		70.5
71.0	13:18:45		71.0
70.5	13:18:46		70.5
69.5	13:18:47		69.5
68.1	13:18:48		68.1
65.5	13:18:49		65.5
66.2	13:18:50		66.2
68.0	13:18:51		68.0
67.7	13:18:52		67.7
65.0	13:18:53		65.0
63.9	13:18:54		63.9
64.2	13:18:55		64.2
64.6	13:18:56		64.6
68.3	13:18:57		68.3
71.8	13:18:58		71.8
72.3	13:18:59		72.3
73.1	13:19:00		73.1
71.8	13:19:01		71.8
70.1	13:19:02		70.1
67.8	13:19:03		67.8
64.9	13:19:04		64.9
65.3	13:19:05		65.3
69.1	13:19:06		69.1
69.2	13:19:07		69.2
65.4	13:19:08		65.4
62.4	13:19:09		62.4
59.8	13:19:10		59.8
59.7	13:19:11		59.7
57.4	13:19:12		57.4
54.9	13:19:13		54.9
52.0	13:19:14		52.0
50.1	13:19:15		50.1
50.2	13:19:16		50.2
49.0	13:19:17		49.0
52.1	13:19:18		52.1
51.7	13:19:19		51.7
50.0	13:19:20		50.0
51.1	13:19:21		51.1
53.9	13:19:22		53.9
52.1	13:19:23		52.1
51.2	13:19:24		51.2
54.2	13:19:25		54.2
52.1	13:19:26		52.1
54.6	13:19:27		54.6
54.6	13:19:28		54.6
52.6	13:19:29		52.6
51.3	13:19:30		51.3
53.9	13:19:31		53.9
53.9	13:19:32		53.9
55.4	13:19:33		55.4
54.6	13:19:34		54.6
55.1	13:19:35		55.1
55.7	13:19:36		55.7
54.4	13:19:37		54.4
56.3	13:19:38		56.3
58.4	13:19:39		58.4
59.4	13:19:40		59.4
62.5	13:19:41		62.5
66.5	13:19:42		66.5
70.3	13:19:43		70.3
67.8	13:19:44		67.8
64.9	13:19:45		64.9
61.9	13:19:46		61.9
60.6	13:19:47		60.6
60.2	13:19:48		60.2
57.8	13:19:49		57.8
56.8	13:19:50		56.8
59.0	13:19:51		59.0
59.0	13:19:52		59.0

Site 2 - Near NW Corner of Project Site
 August 11, 2020 1:09:29 PM Leq Daytime = 66.3
 Impingement Time = 1 s Freq Weighting=A Leq Nighttime = 61.5
 Record Num = 86402 CNEL(24hr) = 69.4
 Leq = 65.0 Ldn(24hr) = 69.0
 Min = 35.6 Min Leq hr at 2:47 AM 52.4
 Max = 95.3 Max Leq hr at 1:46 PM 68.6

SPL	Time	Leq (1 hour Avg.)	Ldn CNEL
52.1	13:09:29		52.1
49.9	13:09:30		49.9
53.1	13:09:31		53.1
61.2	13:09:32		61.2
60.6	13:09:33		60.6
69.8	13:09:34		69.8
70.2	13:09:35		70.2
72.1	13:09:36		72.1
71.6	13:09:37		71.6
68.7	13:09:38		68.7
70.2	13:09:39		70.2
66.6	13:09:40		66.6
62.8	13:09:41		62.8
58.9	13:09:42		58.9
55.0	13:09:43		55.0
51.7	13:09:44		51.7
48.5	13:09:45		48.5
47.7	13:09:46		47.7
47.0	13:09:47		47.0
49.0	13:09:48		49.0
48.7	13:09:49		48.7
48.0	13:09:50		48.0
51.1	13:09:51		51.1
53.4	13:09:52		53.4
53.5	13:09:53		53.5
55.1	13:09:54		55.1
51.5	13:09:55		51.5
56.6	13:09:56		56.6
55.6	13:09:57		55.6
54.6	13:09:58		54.6
55.0	13:09:59		55.0
52.0	13:10:00		52.0
54.4	13:10:01		54.4
52.5	13:10:02		52.5
54.9	13:10:03		54.9
54.5	13:10:04		54.5
51.1	13:10:05		51.1
48.7	13:10:06		48.7
46.5	13:10:07		46.5
44.2	13:10:08		44.2
57.5	13:10:09		57.5
57.5	13:10:10		57.5
57.2	13:10:11		57.2
58.1	13:10:12		58.1
57.3	13:10:13		57.3
54.8	13:10:14		54.8
53.3	13:10:15		53.3
62.5	13:10:16		62.5
72.4	13:10:17		72.4
69.1	13:10:18		69.1
68.8	13:10:19		68.8
67.3	13:10:20		67.3
64.2	13:10:21		64.2
62.8	13:10:22		62.8
62.5	13:10:23		62.5
64.6	13:10:24		64.6
67.7	13:10:25		67.7
69.9	13:10:26		69.9
72.6	13:10:27		72.6
71.5	13:10:28		71.5
68.4	13:10:29		68.4
65.4	13:10:30		65.4
63.2	13:10:31		63.2
66.4	13:10:32		66.4
68.9	13:10:33		68.9
73.2	13:10:34		73.2
73.4	13:10:35		73.4
70.2	13:10:36		70.2
66.9	13:10:37		66.9
71.2	13:10:38		71.2
80.1	13:10:39		80.1
77.5	13:10:40		77.5
73.4	13:10:41		73.4
70.0	13:10:42		70.0
71.6	13:10:43		71.6
80.4	13:10:44		80.4
78.3	13:10:45		78.3
72.6	13:10:46		72.6
69.0	13:10:47		69.0
65.4	13:10:48		65.4
63.0	13:10:49		63.0
62.3	13:10:50		62.3
60.7	13:10:51		60.7
58.2	13:10:52		58.2
55.7	13:10:53		55.7
53.2	13:10:54		53.2
50.4	13:10:55		50.4
48.8	13:10:56		48.8
48.1	13:10:57		48.1
46.0	13:10:58		46.0
44.7	13:10:59		44.7
44.6	13:11:00		44.6
46.6	13:11:01		46.6
48.9	13:11:02		48.9
51.1	13:11:03		51.1
54.1	13:11:04		54.1
57.8	13:11:05		57.8
61.3	13:11:06		61.3
65.0	13:11:07		65.0
65.6	13:11:08		65.6
63.7	13:11:09		63.7
61.0	13:11:10		61.0
58.8	13:11:11		58.8
58.8	13:11:12		58.8
64.0	13:11:13		64.0
66.1	13:11:14		66.1
63.9	13:11:15		63.9
61.1	13:11:16		61.1
58.8	13:11:17		58.8
57.9	13:11:18		57.9
56.6	13:11:19		56.6
69.2	13:11:20		69.2
72.2	13:11:21		72.2
69.3	13:11:22		69.3
66.2	13:11:23		66.2
65.0	13:11:24		65.0
62.3	13:11:25		62.3
65.5	13:11:26		65.5
72.3	13:11:27		72.3
76.9	13:11:28		76.9
74.1	13:11:29		74.1
70.6	13:11:30		70.6
66.9	13:11:31		66.9
63.3	13:11:32		63.3
60.1			

Site 1 - Near SE Corner of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn CNEL
63.0	13:19:53		63.0
63.0	13:19:54		63.0
73.0	13:19:55		73.0
71.2	13:19:56		71.2
68.2	13:19:57		68.2
65.0	13:19:58		65.0
61.9	13:19:59		61.9
59.5	13:20:00		59.5
57.5	13:20:01		57.5
55.9	13:20:02		55.9
54.7	13:20:03		54.7
53.7	13:20:04		53.7
52.7	13:20:05		52.7
51.5	13:20:06		51.5
50.6	13:20:07		50.6
50.8	13:20:08		50.8
51.1	13:20:09		51.1
51.7	13:20:10		51.7
50.4	13:20:11		50.4
48.9	13:20:12		48.9
47.4	13:20:13		47.4
46.1	13:20:14		46.1
45.9	13:20:15		45.9
45.9	13:20:16		45.9
45.7	13:20:17		45.7
45.5	13:20:18		45.5
45.7	13:20:19		45.7
46.2	13:20:20		46.2
47.0	13:20:21		47.0
47.4	13:20:22		47.4
48.1	13:20:23		48.1
48.1	13:20:24		48.1
47.8	13:20:25		47.8
48.2	13:20:26		48.2
47.7	13:20:27		47.7
46.7	13:20:28		46.7
46.0	13:20:29		46.0
45.7	13:20:30		45.7
45.2	13:20:31		45.2
44.5	13:20:32		44.5
44.4	13:20:33		44.4
44.8	13:20:34		44.8
45.2	13:20:35		45.2
46.2	13:20:36		46.2
45.8	13:20:37		45.8
45.2	13:20:38		45.2
49.2	13:20:39		49.2
48.9	13:20:40		48.9
46.7	13:20:41		46.7
45.0	13:20:42		45.0
44.7	13:20:43		44.7
45.6	13:20:44		45.6
45.7	13:20:45		45.7
45.7	13:20:46		45.7
50.0	13:20:47		50.0
48.7	13:20:48		48.7
47.8	13:20:49		47.8
46.4	13:20:50		46.4
45.5	13:20:51		45.5
45.2	13:20:52		45.2
45.3	13:20:53		45.3
45.1	13:20:54		45.1
44.5	13:20:55		44.5
44.1	13:20:56		44.1
43.8	13:20:57		43.8
42.9	13:20:58		42.9
44.2	13:20:59		44.2
43.5	13:21:00		43.5
43.1	13:21:01		43.1
43.0	13:21:02		43.0
43.2	13:21:03		43.2
43.7	13:21:04		43.7
44.9	13:21:05		44.9
46.8	13:21:06		46.8
48.1	13:21:07		48.1
50.7	13:21:08		50.7
51.8	13:21:09		51.8
54.3	13:21:10		54.3
57.0	13:21:11		57.0
60.5	13:21:12		60.5
65.0	13:21:13		65.0
73.4	13:21:14		73.4
80.4	13:21:15		80.4
81.6	13:21:16		81.6
78.6	13:21:17		78.6
74.7	13:21:18		74.7
70.8	13:21:19		70.8
67.1	13:21:20		67.1
63.7	13:21:21		63.7
61.0	13:21:22		61.0
58.4	13:21:23		58.4
56.3	13:21:24		56.3
54.8	13:21:25		54.8
53.5	13:21:26		53.5
51.8	13:21:27		51.8
49.8	13:21:28		49.8
48.8	13:21:29		48.8
51.5	13:21:30		51.5
80.6	13:21:31		80.6
71.3	13:21:32		71.3
73.3	13:21:33		73.3
70.3	13:21:34		70.3
67.0	13:21:35		67.0
63.8	13:21:36		63.8
60.5	13:21:37		60.5
57.8	13:21:38		57.8
56.0	13:21:39		56.0
54.9	13:21:40		54.9
54.0	13:21:41		54.0
53.7	13:21:42		53.7
53.0	13:21:43		53.0
52.7	13:21:44		52.7
53.8	13:21:45		53.8
56.9	13:21:46		56.9
59.6	13:21:47		59.6
62.6	13:21:48		62.6
65.0	13:21:49		65.0
64.5	13:21:50		64.5
61.7	13:21:51		61.7
58.2	13:21:52		58.2
54.9	13:21:53		54.9
52.9	13:21:54		52.9
51.0	13:21:55		51.0
49.2	13:21:56		49.2
48.2	13:21:57		48.2
48.2	13:21:58		48.2
47.9	13:21:59		47.9
47.5	13:22:00		47.5
47.3	13:22:01		47.3
47.7	13:22:02		47.7
47.7	13:22:03		47.7
47.3	13:22:04		47.3
46.9	13:22:05		46.9
47.1	13:22:06		47.1
46.4	13:22:07		46.4
45.8	13:22:08		45.8
45.2	13:22:09		45.2
46.0	13:22:10		46.0
45.7	13:22:11		45.7
45.0	13:22:12		45.0
44.7	13:22:13		44.7
44.5	13:22:14		44.5
43.9	13:22:15		43.9
43.3	13:22:16		43.3
43.6	13:22:17		43.6
44.2	13:22:18		44.2
45.7	13:22:19		45.7
47.0	13:22:20		47.0
47.3	13:22:21		47.3
47.3	13:22:22		47.3
47.8	13:22:23		47.8
49.0	13:22:24		49.0
51.7	13:22:25		51.7
53.2	13:22:26		53.2
57.1	13:22:27		57.1
64.4	13:22:28		64.4
69.1	13:22:29		69.1
69.2	13:22:30		69.2
66.3	13:22:31		66.3
63.0	13:22:32		63.0
59.7	13:22:33		59.7
56.1	13:22:34		56.1
52.5	13:22:35		52.5
49.2	13:22:36		49.2
46.3	13:22:37		46.3
44.4	13:22:38		44.4
43.2	13:22:39		43.2
42.3	13:22:40		42.3
41.9	13:22:41		41.9
41.7	13:22:42		41.7
41.2	13:22:43		41.2
41.0	13:22:44		41.0
41.2	13:22:45		41.2
40.7	13:22:46		40.7
40.2	13:22:47		40.2
40.1	13:22:48		40.1
40.1	13:22:49		40.1
40.5	13:22:50		40.5
41.2	13:22:51		41.2
42.1	13:22:52		42.1
43.8	13:22:53		43.8
48.3	13:22:54		48.3

Site 2 - Near NW Corner of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn CNEL
59.8	13:12:19		59.8
66.3	13:12:20		66.3
68.8	13:12:21		68.8
66.8	13:12:22		66.8
63.6	13:12:23		63.6
60.3	13:12:24		60.3
57.1	13:12:25		57.1
54.4	13:12:26		54.4
51.8	13:12:27		51.8
50.2	13:12:28		50.2
51.2	13:12:29		51.2
51.1	13:12:30		51.1
50.5	13:12:31		50.5
50.3	13:12:32		50.3
49.3	13:12:33		49.3
49.8	13:12:34		49.8
50.2	13:12:35		50.2
50.4	13:12:36		50.4
51.0	13:12:37		51.0
53.1	13:12:38		53.1
56.7	13:12:39		56.7
61.7	13:12:40		61.7
65.8	13:12:41		65.8
65.9	13:12:42		65.9
65.6	13:12:43		65.6
66.4	13:12:44		66.4
64.8	13:12:45		64.8
61.8	13:12:46		61.8
58.8	13:12:47		58.8
57.7	13:12:48		57.7
59.5	13:12:49		59.5
66.3	13:12:50		66.3
72.3	13:12:51		72.3
70.8	13:12:52		70.8
68.1	13:12:53		68.1
68.8	13:12:54		68.8
74.4	13:12:55		74.4
75.1	13:12:56		75.1
71.9	13:12:57		71.9
68.4	13:12:58		68.4
64.9	13:12:59		64.9
61.9	13:13:00		61.9
58.9	13:13:01		58.9
55.5	13:13:02		55.5
52.5	13:13:03		52.5
49.2	13:13:04		49.2
45.5	13:13:05		45.5
46.0	13:13:06		46.0
46.5	13:13:07		46.5
48.5	13:13:08		48.5
52.3	13:13:09		52.3
57.9	13:13:10		57.9
63.7	13:13:11		63.7
66.4	13:13:12		66.4
64.7	13:13:13		64.7
61.8	13:13:14		61.8
58.9	13:13:15		58.9
57.1	13:13:16		57.1
58.9	13:13:17		58.9
63.3	13:13:18		63.3
66.3	13:13:19		66.3
68.8	13:13:20		68.8
66.2	13:13:21		66.2
62.8	13:13:22		62.8
59.7	13:13:23		59.7
57.9	13:13:24		57.9
58.6	13:13:25		58.6
56.1	13:13:26		56.1
70.8	13:13:27		70.8
70.5	13:13:28		70.5
67.3	13:13:29		67.3
63.9	13:13:30		63.9
60.6	13:13:31		60.6
58.5	13:13:32		58.5
56.1	13:13:33		56.1
63.4	13:13:34		63.4
68.0	13:13:35		68.0
64.3	13:13:36		64.3
68.3	13:13:37		68.3
69.8	13:13:38		69.8
68.3	13:13:39		68.3
68.5	13:13:40		68.5
70.1	13:13:41		70.1
69.9	13:13:42		69.9
68.5	13:13:43		68.5
65.5	13:13:44		65.5
62.4	13:13:45		62.4
59.8	13:13:46		59.8
57.6	13:13:47		57.6
56.1	13:13:48		56.1
57.0	13:13:49		57.0
61.2	13:13:50		61.2
61.9	13:13:51		61.9
66.3	13:13:52		66.3
63.7	13:13:53		63.7
60.6	13:13:54		60.6
58.2	13:13:55		58.2
56.5	13:13:56		56.5
54.9	13:13:57		54.9
52.1	13:13:58		52.1
49.5	13:13:59		49.5
48.7	13:14:00		48.7
49.4	13:14:01		49.4
52.6	13:14:02		52.6
56.5	13:14:03		56.5
60.3	13:14:04		60.3
64.6	13:14:05		64.6
68.5	13:14:06		68.5
70.1	13:14:07		70.1
69.9	13:14:08		69.9
67.7	13:14:09		67.7
67.5	13:14:10		67.5
65.7	13:14:11		65.7
62.7	13:14:12		62.7
59.2	13:14:13		59.2
56.5	13:14:14		56.5
52.5	13:14:15		52.5
49.7	13:14:16		49.7
47.4	13:14:17		47.4
46.8	13:14:18		46.8
45.7	13:14:19		

Site 1 - Near SE Corner of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn CNEL
55.1	13:22:55	55.1	55.1
61.6	13:22:56	61.6	61.6
67.6	13:22:57	67.6	67.6
73.0	13:22:58	73.0	73.0
74.3	13:22:59	74.3	74.3
72.8	13:23:00	72.8	72.8
69.7	13:23:01	69.7	69.7
66.3	13:23:02	66.3	66.3
62.9	13:23:03	62.9	62.9
60.4	13:23:04	60.4	60.4
60.5	13:23:05	60.5	60.5
64.6	13:23:06	64.6	64.6
70.8	13:23:07	70.8	70.8
72.5	13:23:08	72.5	72.5
69.9	13:23:09	69.9	69.9
66.6	13:23:10	66.6	66.6
63.3	13:23:11	63.3	63.3
60.0	13:23:12	60.0	60.0
57.5	13:23:13	57.5	57.5
58.5	13:23:14	58.5	58.5
65.5	13:23:15	65.5	65.5
72.0	13:23:16	72.0	72.0
70.9	13:23:17	70.9	70.9
67.4	13:23:18	67.4	67.4
64.1	13:23:19	64.1	64.1
60.8	13:23:20	60.8	60.8
57.2	13:23:21	57.2	57.2
54.4	13:23:22	54.4	54.4
58.3	13:23:23	58.3	58.3
61.0	13:23:24	61.0	61.0
60.7	13:23:25	60.7	60.7
61.9	13:23:26	61.9	61.9
59.9	13:23:27	59.9	59.9
57.3	13:23:28	57.3	57.3
54.7	13:23:29	54.7	54.7
52.2	13:23:30	52.2	52.2
50.2	13:23:31	50.2	50.2
48.7	13:23:32	48.7	48.7
47.8	13:23:33	47.8	47.8
47.4	13:23:34	47.4	47.4
47.3	13:23:35	47.3	47.3
47.9	13:23:36	47.9	47.9
49.4	13:23:37	49.4	49.4
49.9	13:23:38	49.9	49.9
48.9	13:23:39	48.9	48.9
47.9	13:23:40	47.9	47.9
47.0	13:23:41	47.0	47.0
46.9	13:23:42	46.9	46.9
46.1	13:23:43	46.1	46.1
45.7	13:23:44	45.7	45.7
44.9	13:23:45	44.9	44.9
44.9	13:23:46	44.9	44.9
45.2	13:23:47	45.2	45.2
45.2	13:23:48	45.2	45.2
44.5	13:23:49	44.5	44.5
44.6	13:23:50	44.6	44.6
44.9	13:23:51	44.9	44.9
44.7	13:23:52	44.7	44.7
44.0	13:23:53	44.0	44.0
43.8	13:23:54	43.8	43.8
43.4	13:23:55	43.4	43.4
43.2	13:23:56	43.2	43.2
42.7	13:23:57	42.7	42.7
43.6	13:23:58	43.6	43.6
45.4	13:23:59	45.4	45.4
47.5	13:24:00	47.5	47.5
47.4	13:24:01	47.4	47.4
45.4	13:24:02	45.4	45.4
44.3	13:24:03	44.3	44.3
45.3	13:24:04	45.3	45.3
46.0	13:24:05	46.0	46.0
45.7	13:24:06	45.7	45.7
45.1	13:24:07	45.1	45.1
44.3	13:24:08	44.3	44.3
44.3	13:24:09	44.3	44.3
43.9	13:24:10	43.9	43.9
43.5	13:24:11	43.5	43.5
44.3	13:24:12	44.3	44.3
44.2	13:24:13	44.2	44.2
43.6	13:24:14	43.6	43.6
43.5	13:24:15	43.5	43.5
43.5	13:24:16	43.5	43.5
43.2	13:24:17	43.2	43.2
43.1	13:24:18	43.1	43.1
43.6	13:24:19	43.6	43.6
44.5	13:24:20	44.5	44.5
45.6	13:24:21	45.6	45.6
47.6	13:24:22	47.6	47.6
47.9	13:24:23	47.9	47.9
47.4	13:24:24	47.4	47.4
46.6	13:24:25	46.6	46.6
46.5	13:24:26	46.5	46.5
46.0	13:24:27	46.0	46.0
45.5	13:24:28	45.5	45.5
44.9	13:24:29	44.9	44.9
44.6	13:24:30	44.6	44.6
44.5	13:24:31	44.5	44.5
43.9	13:24:32	43.9	43.9
42.9	13:24:33	42.9	42.9
42.1	13:24:34	42.1	42.1
41.6	13:24:35	41.6	41.6
42.1	13:24:36	42.1	42.1
43.2	13:24:37	43.2	43.2
43.3	13:24:38	43.3	43.3
44.1	13:24:39	44.1	44.1
50.0	13:24:40	50.0	50.0
50.6	13:24:41	50.6	50.6
49.4	13:24:42	49.4	49.4
48.2	13:24:43	48.2	48.2
47.2	13:24:44	47.2	47.2
46.9	13:24:45	46.9	46.9
46.3	13:24:46	46.3	46.3
46.1	13:24:47	46.1	46.1
45.8	13:24:48	45.8	45.8
45.3	13:24:49	45.3	45.3
45.5	13:24:50	45.5	45.5
47.3	13:24:51	47.3	47.3
49.8	13:24:52	49.8	49.8
54.6	13:24:53	54.6	54.6
61.3	13:24:54	61.3	61.3
69.1	13:24:55	69.1	69.1
71.3	13:24:56	71.3	71.3
69.1	13:24:57	69.1	69.1
66.0	13:24:58	66.0	66.0
62.8	13:24:59	62.8	62.8
60.8	13:25:00	60.8	60.8
58.1	13:25:01	58.1	58.1
54.9	13:25:02	54.9	54.9
52.2	13:25:03	52.2	52.2
49.9	13:25:04	49.9	49.9
47.2	13:25:05	47.2	47.2
45.3	13:25:06	45.3	45.3
44.2	13:25:07	44.2	44.2
43.6	13:25:08	43.6	43.6
43.0	13:25:09	43.0	43.0
42.8	13:25:10	42.8	42.8
43.0	13:25:11	43.0	43.0
43.9	13:25:12	43.9	43.9
44.2	13:25:13	44.2	44.2
46.1	13:25:14	46.1	46.1
46.1	13:25:15	46.1	46.1
46.1	13:25:16	46.1	46.1
46.1	13:25:17	46.1	46.1
46.1	13:25:18	46.1	46.1
46.1	13:25:19	46.1	46.1
46.1	13:25:20	46.1	46.1
46.1	13:25:21	46.1	46.1
46.1	13:25:22	46.1	46.1
46.1	13:25:23	46.1	46.1
46.1	13:25:24	46.1	46.1
46.1	13:25:25	46.1	46.1
46.1	13:25:26	46.1	46.1
46.1	13:25:27	46.1	46.1
46.1	13:25:28	46.1	46.1
46.1	13:25:29	46.1	46.1
46.1	13:25:30	46.1	46.1
46.1	13:25:31	46.1	46.1
46.1	13:25:32	46.1	46.1
46.1	13:25:33	46.1	46.1
46.1	13:25:34	46.1	46.1
46.1	13:25:35	46.1	46.1
46.1	13:25:36	46.1	46.1
46.1	13:25:37	46.1	46.1
46.1	13:25:38	46.1	46.1
46.1	13:25:39	46.1	46.1
46.1	13:25:40	46.1	46.1
46.1	13:25:41	46.1	46.1
46.1	13:25:42	46.1	46.1
46.1	13:25:43	46.1	46.1
46.1	13:25:44	46.1	46.1
46.1	13:25:45	46.1	46.1
46.1	13:25:46	46.1	46.1
46.1	13:25:47	46.1	46.1
46.1	13:25:48	46.1	46.1
46.1	13:25:49	46.1	46.1
46.1	13:25:50	46.1	46.1
46.1	13:25:51	46.1	46.1
46.1	13:25:52	46.1	46.1
46.1	13:25:53	46.1	46.1
46.1	13:25:54	46.1	46.1
46.1	13:25:55	46.1	46.1
46.1	13:25:56	46.1	46.1
46.1	13:25:57	46.1	46.1
46.1	13:25:58	46.1	46.1
46.1	13:25:59	46.1	46.1
46.1	13:26:00	46.1	46.1
46.1	13:26:01	46.1	46.1
46.1	13:26:02	46.1	46.1
46.1	13:26:03	46.1	46.1
46.1	13:26:04	46.1	46.1
46.1	13:26:05	46.1	46.1
46.1	13:26:06	46.1	46.1
46.1	13:26:07	46.1	46.1
46.1	13:26:08	46.1	46.1
46.1	13:26:09	46.1	46.1
46.1	13:26:10	46.1	46.1
46.1	13:26:11	46.1	46.1
46.1	13:26:12	46.1	46.1
46.1	13:26:13	46.1	46.1
46.1	13:26:14	46.1	46.1
46.1	13:26:15	46.1	46.1
46.1	13:26:16	46.1	46.1
46.1	13:26:17	46.1	46.1
46.1	13:26:18	46.1	46.1
46.1	13:26:19	46.1	46.1
46.1	13:26:20	46.1	46.1
46.1	13:26:21	46.1	46.1
46.1	13:26:22	46.1	46.1
46.1	13:26:23	46.1	46.1
46.1	13:26:24	46.1	46.1
46.1	13:26:25	46.1	46.1
46.1	13:26:26	46.1	46.1
46.1	13:26:27	46.1	46.1
46.1	13:26:28	46.1	46.1
46.1	13:26:29	46.1	46.1
46.1	13:26:30	46.1	46.1
46.1	13:26:31	46.1	46.1
46.1	13:26:32	46.1	46.1
46.1	13:26:33	46.1	46.1
46.1	13:26:34	46.1	46.1
46.1	13:26:35	46.1	46.1
46.1	13:26:36	46.1	46.1
46.1	13:26:37	46.1	46.1
46.1	13:26:38	46.1	46.1
46.1	13:26:39	46.1	46.1
46.1	13:26:40	46.1	46.1
46.1	13:26:41	46.1	46.1
46.1	13:26:42	46.1	46.1
46.1	13:26:43	46.1	46.1
46.1	13:26:44	46.1	46.1
46.1	13:26:45	46.1	46.1
46.1	13:26:46	46.1	46.1
46.1	13:26:47	46.1	46.1
46.1	13:26:48	46.1	46.1
46.1	13:26:49	46.1	46.1
46.1	13:26:50	46.1	46.1
46.1	13:26:51	46.1	46.1
46.1	13:26:52	46.1	46.1
46.1	13:26:53	46.1	46.1
46.1	13:26:54	46.1	46.1
46.1	13:26:55	46.1	46.1
46.1	13:26:56	46.1	46.1
46.1	13:26:57	46.1	46.1
46.1	13:26:58	46.1	46.1
46.1	13:26:59	46.1	46.1
46.1	13:27:00	46.1	46.1

Site 2 - Near NW Corner of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn CNEL
51.1	13:15:21	51.1	51.1
54.6	13:15:22	54.6	54.6
58.4	13:15:23	58.4	58.4
63.9	13:15:24	63.9	63.9
70.8	13:15:25	70.8	70.8
72.8	13:15:26	72.8	72.8
70.1	13:15:27	70.1	70.1
67.1	13:15:28	67.1	67.1
64.4	13:15:29	64.4	64.4
62.0	13:15:30	62.0	62.0
61.8	13:15:31	61.8	61.8
63.8	13:15:32	63.8	63.8
65.0	13:15:33	65.0	65.0
65.3	13:15:34	65.3	65.3
60.6	13:15:35	60.6	60.6
58.0	13:15:36	58.0	58.0
55.1	13:15:37	55.1	55.1
52.3	13:15:38	52.3	52.3
50.3	13:15:39	50.3	50.3
48.5	13:15:40	48.5	48.5
46.9	13:15:41	46.9	46.9
45.8	13:15:42	45.8	45.8
45.2	13:15:43	45.2	45.2

Site 1 - Near SE Corner of Project Site

Table with columns: SPL, Time, Leq (1 hour Avg.), Ldn CNEL. Contains 100 rows of noise data for Site 1.

Site 2 - Near NW Corner of Project Site

Table with columns: SPL, Time, Leq (1 hour Avg.), Ldn CNEL. Contains 100 rows of noise data for Site 2.

Site 3 - SW of Project Site. Front Yard at 316 Whipporwill Dr

Table with columns: SPL, Time, Leq (1 hour Avg.), Ldn CNEL. Contains 100 rows of noise data for Site 3.

Site 1 - Near SE Corner of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn CNEL
62.1	13:29:30	62.1	62.1
59.4	13:29:31	59.4	59.4
58.8	13:29:32	58.8	58.8
53.5	13:29:33	53.5	53.5
51.9	13:29:34	51.9	51.9
49.9	13:29:35	49.9	49.9
48.5	13:29:36	48.5	48.5
48.5	13:29:37	48.5	48.5
48.9	13:29:38	48.9	48.9
51.5	13:29:39	51.5	51.5
51.5	13:29:40	51.5	51.5
52.9	13:29:41	52.9	52.9
55.1	13:29:42	55.1	55.1
56.2	13:29:43	56.2	56.2
56.2	13:29:44	56.2	56.2
56.8	13:29:45	56.8	56.8
56.8	13:29:46	56.8	56.8
56.2	13:29:47	56.2	56.2
60.9	13:29:48	60.9	60.9
60.9	13:29:49	60.9	60.9
60.9	13:29:50	60.9	60.9
60.8	13:29:51	60.8	60.8
60.8	13:29:52	60.8	60.8
67.5	13:29:53	67.5	67.5
69.0	13:29:54	69.0	69.0
68.2	13:29:55	68.2	68.2
69.0	13:29:56	69.0	69.0
72.7	13:29:57	72.7	72.7
72.7	13:29:58	72.7	72.7
78.3	13:30:00	78.3	78.3
82.0	13:30:01	82.0	82.0
82.0	13:30:02	82.0	82.0
81.1	13:30:03	81.1	81.1
80.0	13:30:04	80.0	80.0
79.3	13:30:05	79.3	79.3
77.6	13:30:06	77.6	77.6
75.0	13:30:07	75.0	75.0
72.3	13:30:08	72.3	72.3
69.7	13:30:09	69.7	69.7
69.1	13:30:10	69.1	69.1
64.1	13:30:11	64.1	64.1
61.9	13:30:12	61.9	61.9
60.4	13:30:13	60.4	60.4
63.0	13:30:14	63.0	63.0
69.0	13:30:15	69.0	69.0
75.0	13:30:16	75.0	75.0
74.2	13:30:17	74.2	74.2
70.8	13:30:18	70.8	70.8
67.7	13:30:19	67.7	67.7
68.4	13:30:20	68.4	68.4
75.7	13:30:21	75.7	75.7
77.0	13:30:22	77.0	77.0
75.1	13:30:23	75.1	75.1
74.2	13:30:24	74.2	74.2
69.2	13:30:25	69.2	69.2
66.1	13:30:26	66.1	66.1
63.2	13:30:27	63.2	63.2
60.9	13:30:28	60.9	60.9
59.3	13:30:29	59.3	59.3
63.3	13:30:30	63.3	63.3
69.5	13:30:31	69.5	69.5
69.5	13:30:32	69.5	69.5
66.9	13:30:33	66.9	66.9
63.4	13:30:34	63.4	63.4
60.3	13:30:35	60.3	60.3
57.5	13:30:36	57.5	57.5
54.6	13:30:37	54.6	54.6
52.3	13:30:38	52.3	52.3
50.1	13:30:39	50.1	50.1
49.6	13:30:40	49.6	49.6
50.0	13:30:41	50.0	50.0
50.4	13:30:42	50.4	50.4
51.0	13:30:43	51.0	51.0
50.3	13:30:44	50.3	50.3
49.2	13:30:45	49.2	49.2
49.4	13:30:46	49.4	49.4
50.7	13:30:47	50.7	50.7
51.0	13:30:48	51.0	51.0
51.6	13:30:49	51.6	51.6
52.6	13:30:50	52.6	52.6
53.1	13:30:51	53.1	53.1
54.9	13:30:52	54.9	54.9
55.2	13:30:53	55.2	55.2
54.3	13:30:54	54.3	54.3
52.6	13:30:55	52.6	52.6
51.4	13:30:56	51.4	51.4
51.0	13:30:57	51.0	51.0
50.4	13:30:58	50.4	50.4
49.5	13:30:59	49.5	49.5
48.9	13:31:00	48.9	48.9
49.0	13:31:01	49.0	49.0
49.1	13:31:02	49.1	49.1
49.0	13:31:03	49.0	49.0
48.7	13:31:04	48.7	48.7
48.3	13:31:05	48.3	48.3
48.5	13:31:06	48.5	48.5
48.9	13:31:07	48.9	48.9
49.1	13:31:08	49.1	49.1
49.1	13:31:09	49.1	49.1
48.2	13:31:10	48.2	48.2
47.2	13:31:11	47.2	47.2
45.7	13:31:12	45.7	45.7
45.2	13:31:13	45.2	45.2
44.6	13:31:14	44.6	44.6
44.7	13:31:15	44.7	44.7
44.7	13:31:16	44.7	44.7
43.9	13:31:17	43.9	43.9
43.2	13:31:18	43.2	43.2
43.1	13:31:19	43.1	43.1
43.0	13:31:20	43.0	43.0
42.5	13:31:21	42.5	42.5
42.0	13:31:22	42.0	42.0
41.9	13:31:23	41.9	41.9
42.4	13:31:24	42.4	42.4
42.9	13:31:25	42.9	42.9
43.2	13:31:26	43.2	43.2
43.1	13:31:27	43.1	43.1
42.7	13:31:28	42.7	42.7
42.0	13:31:29	42.0	42.0
41.5	13:31:30	41.5	41.5
41.4	13:31:31	41.4	41.4
41.3	13:31:32	41.3	41.3
41.5	13:31:33	41.5	41.5
41.6	13:31:34	41.6	41.6
41.4	13:31:35	41.4	41.4
41.8	13:31:36	41.8	41.8
42.4	13:31:37	42.4	42.4
45.5	13:31:38	45.5	45.5
52.0	13:31:39	52.0	52.0
58.1	13:31:40	58.1	58.1
64.7	13:31:41	64.7	64.7
69.0	13:31:42	69.0	69.0
68.9	13:31:43	68.9	68.9
66.2	13:31:44	66.2	66.2
63.0	13:31:45	63.0	63.0
60.3	13:31:46	60.3	60.3
58.2	13:31:47	58.2	58.2
56.3	13:31:48	56.3	56.3
53.6	13:31:49	53.6	53.6
51.1	13:31:50	51.1	51.1
50.1	13:31:51	50.1	50.1
50.2	13:31:52	50.2	50.2
49.0	13:31:53	49.0	49.0
47.1	13:31:54	47.1	47.1
45.0	13:31:55	45.0	45.0
43.9	13:31:56	43.9	43.9
43.0	13:31:57	43.0	43.0
42.8	13:31:58	42.8	42.8
42.6	13:31:59	42.6	42.6
42.8	13:32:00	42.8	42.8
43.2	13:32:01	43.2	43.2
43.4	13:32:02	43.4	43.4
43.0	13:32:03	43.0	43.0
42.9	13:32:04	42.9	42.9
43.4	13:32:05	43.4	43.4
44.2	13:32:06	44.2	44.2
43.9	13:32:07	43.9	43.9
43.7	13:32:08	43.7	43.7
44.8	13:32:09	44.8	44.8
46.1	13:32:10	46.1	46.1
46.3	13:32:11	46.3	46.3
45.1	13:32:12	45.1	45.1
43.6	13:32:13	43.6	43.6
42.6	13:32:14	42.6	42.6
42.3	13:32:15	42.3	42.3
42.4	13:32:16	42.4	42.4
42.6	13:32:17	42.6	42.6
42.6	13:32:18	42.6	42.6
42.7	13:32:19	42.7	42.7
43.5	13:32:20	43.5	43.5
44.4	13:32:21	44.4	44.4
44.4	13:32:22	44.4	44.4
45.1	13:32:23	45.1	45.1

Site 2 - Near NW Corner of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn CNEL
49.4	13:21:30	49.4	49.4
48.7	13:21:31	48.7	48.7
50.0	13:21:32	50.0	50.0
53.9	13:21:33	53.9	53.9
50.0	13:21:34	50.0	50.0
62.0	13:21:35	62.0	62.0
65.5	13:21:36	65.5	65.5
65.1	13:21:37	65.1	65.1
62.8	13:21:38	62.8	62.8
59.9	13:21:39	59.9	59.9
56.7	13:21:40	56.7	56.7
54.0	13:21:41	54.0	54.0
52.3	13:21:42	52.3	52.3
51.3	13:21:43	51.3	51.3
50.7	13:21:44	50.7	50.7
51.9	13:21:45	51.9	51.9
54.0	13:21:46	54.0	54.0
56.7	13:21:47	56.7	56.7
59.6	13:21:48	59.6	59.6
60.9	13:21:49	60.9	60.9
60.3	13:21:50	60.3	60.3
60.3	13:21:51	60.3	60.3
73.9	13:21:52	73.9	73.9
72.9	13:21:53	72.9	72.9
69.7	13:21:54	69.7	69.7
67.3	13:21:55	67.3	67.3
65.9	13:21:56	65.9	65.9
65.3	13:21:57	65.3	65.3
67.5	13:21:58	67.5	67.5
73.4	13:21:59	73.4	73.4
77.4	13:22:00	77.4	77.4
74.0	13:22:01	74.0	74.0
71.4	13:22:02	71.4	71.4
69.7	13:22:03	69.7	69.7
69.9	13:22:04	69.9	69.9
68.3	13:22:05	68.3	68.3
69.0	13:22:06	69.0	69.0
62.2	13:22:07	62.2	62.2
59.9	13:22:08	59.9	59.9
56.7	13:22:09	56.7	56.7
54.1	13:22:10	54.1	54.1
52.1	13:22:11	52.1	52.1
51.5	13:22:12	51.5	51.5
51.0	13:22:13	51.0	51.0
51.0	13:22:14	51.0	51.0
53.4	13:22:15	53.4	53.4
56.2	13:22:16	56.2	56.2
59.8	13:22:17	59.8	59.8
60.4	13:22:18	60.4	60.4
60.9	13:22:19	60.9	60.9
68.4	13:22:20	68.4	68.4
69.0	13:22:21	69.0	69.0
69.2	13:22:22	69.2	69.2
69.0	13:22:23	69.0	69.0
67.7	13:22:24	67.7	67.7
68.1	13:22:25	68.1	68.1
66.4	13:22:26	66.4	66.4
71.5	13:22:27	71.5	71.5
72.8	13:22:28	72.8	72.8
75.7	13:22:29	75.7	75.7
83.1	13:22:30	83.1	83.1
94.9	13:22:31	94.9	94.9
95.3	13:22:32	95.3	95.3
91.4	13:22:33	91.4	91.4
87.6	13:22:34	87.6	87.6
83.9	13:22:35	83.9	83.9
80.1	13:22:36	80.1	80.1
76.5	13:22:37	76.5	76.5
75.8	13:22:38	75.8	75.8
73.6	13:22:39	73.6	73.6
70.0	13:22:40	70.0	70.0
67.1	13:22:41	67.1	67.1
65.8	13:22:42	65.8	65.8
65.2	13:22:43	65.2	65.2
68.2	13:22:44	68.2	68.2
70.7	13:22:45	70.7	70.7
68.5	13:22:46	68.5	68.5
65.5	13:22:47	65.5	65.5
64.2	13:22:48	64.2	64.2
67.5	13:22:49	67.5	67.5
68.3	13:22:50	68.3	68.3
65.5	13:22:51	65.5	65.5
62.3	13:22:52	62.3	62.3
59.6	13:22:53	59.6	59.6
56.2	13:22:54	56.2	56.2
54.8	13:22:55	54.8	54.8
57.3	13:22:56	57.3	57.3
58.9	13:22:57	58.9	58.9
65.9	13:22:58	65.9	65.9
67.9	13:22:59	67.9	67.9
64.9	13:23:00	64.9	64.9
61.6	13:23:01	61.6	61.6
58.8	13:23:02	58.8	58.8
56.5	13:23:03	56.5	56.5
54.8	13:23:04	54.8	54.8
54.9	13:23:05	54.9	54.9

Site 1 - Near SE Corner of Project Site			
SPL	Time	Leq (1 hour Avg.)	Ldn CNEL
46.2	13:32:24	46.2	46.2
46.0	13:32:25	46.0	46.0
46.0	13:32:26	46.0	46.0
46.3	13:32:27	46.3	46.3
46.7	13:32:28	46.7	46.7
48.7	13:32:29	48.7	48.7
50.1	13:32:30	50.1	50.1
51.2	13:32:31	51.2	51.2
50.7	13:32:32	50.7	50.7
50.3	13:32:33	50.3	50.3
50.2	13:32:34	50.2	50.2
50.2	13:32:35	50.2	50.2
49.8	13:32:36	49.8	49.8
50.0	13:32:37	50.0	50.0
50.2	13:32:38	50.2	50.2
50.8	13:32:39	50.8	50.8
51.4	13:32:40	51.4	51.4
52.3	13:32:41	52.3	52.3
52.3	13:32:42	52.3	52.3
53.2	13:32:43	53.2	53.2
54.8	13:32:44	54.8	54.8
55.5	13:32:45	55.5	55.5
54.6	13:32:46	54.6	54.6
53.1	13:32:47	53.1	53.1
51.4	13:32:48	51.4	51.4
49.8	13:32:49	49.8	49.8
49.1	13:32:50	49.1	49.1
48.4	13:32:51	48.4	48.4
47.0	13:32:52	47.0	47.0
46.8	13:32:53	46.8	46.8
46.3	13:32:54	46.3	46.3
45.5	13:32:55	45.5	45.5
45.1	13:32:56	45.1	45.1
45.2	13:32:57	45.2	45.2
45.5	13:32:58	45.5	45.5
46.0	13:32:59	46.0	46.0
45.3	13:33:00	45.3	45.3
44.6	13:33:01	44.6	44.6
43.5	13:33:02	43.5	43.5
45.1	13:33:03	45.1	45.1
43.6	13:33:04	43.6	43.6
42.9	13:33:05	42.9	42.9
42.5	13:33:06	42.5	42.5
41.6	13:33:07	41.6	41.6
41.1	13:33:08	41.1	41.1
42.2	13:33:09	42.2	42.2
43.0	13:33:10	43.0	43.0
43.3	13:33:11	43.3	43.3
44.7	13:33:12	44.7	44.7
46.6	13:33:13	46.6	46.6
49.2	13:33:14	49.2	49.2
52.5	13:33:15	52.5	52.5
56.1	13:33:16	56.1	56.1
60.9	13:33:17	60.9	60.9
64.0	13:33:18	64.0	64.0
65.3	13:33:19	65.3	65.3
63.7	13:33:20	63.7	63.7
60.6	13:33:21	60.6	60.6
57.7	13:33:22	57.7	57.7
55.1	13:33:23	55.1	55.1
52.8	13:33:24	52.8	52.8
51.3	13:33:25	51.3	51.3
50.2	13:33:26	50.2	50.2
48.1	13:33:27	48.1	48.1
45.9	13:33:28	45.9	45.9
43.9	13:33:29	43.9	43.9
42.6	13:33:30	42.6	42.6
41.2	13:33:31	41.2	41.2
40.1	13:33:32	40.1	40.1
40.0	13:33:33	40.0	40.0
40.5	13:33:34	40.5	40.5
40.3	13:33:35	40.3	40.3
40.2	13:33:36	40.2	40.2
40.5	13:33:37	40.5	40.5
40.9	13:33:38	40.9	40.9
42.1	13:33:39	42.1	42.1
43.3	13:33:40	43.3	43.3
43.3	13:33:41	43.3	43.3
44.4	13:33:42	44.4	44.4
45.2	13:33:43	45.2	45.2
48.0	13:33:44	48.0	48.0
54.0	13:33:45	54.0	54.0
61.1	13:33:46	61.1	61.1
69.2	13:33:47	69.2	69.2
74.4	13:33:48	74.4	74.4
72.7	13:33:49	72.7	72.7
69.7	13:33:50	69.7	69.7
66.6	13:33:51	66.6	66.6
63.9	13:33:52	63.9	63.9
63.4	13:33:53	63.4	63.4
68.1	13:33:54	68.1	68.1
68.7	13:33:55	68.7	68.7
66.0	13:33:56	66.0	66.0
62.7	13:33:57	62.7	62.7
59.0	13:33:58	59.0	59.0
56.5	13:33:59	56.5	56.5
54.0	13:34:00	54.0	54.0
52.1	13:34:01	52.1	52.1
50.7	13:34:02	50.7	50.7
49.3	13:34:03	49.3	49.3
48.0	13:34:04	48.0	48.0
46.9	13:34:05	46.9	46.9
45.8	13:34:06	45.8	45.8
45.1	13:34:07	45.1	45.1
44.5	13:34:08	44.5	44.5
43.6	13:34:09	43.6	43.6
43.0	13:34:10	43.0	43.0
43.5	13:34:11	43.5	43.5
44.8	13:34:12	44.8	44.8
46.1	13:34:13	46.1	46.1
46.4	13:34:14	46.4	46.4
46.9	13:34:15	46.9	46.9
45.7	13:34:16	45.7	45.7
45.7	13:34:17	45.7	45.7
45.2	13:34:18	45.2	45.2
44.7	13:34:19	44.7	44.7
44.5	13:34:20	44.5	44.5
43.8	13:34:21	43.8	43.8
43.6	13:34:22	43.6	43.6
43.2	13:34:23	43.2	43.2
43.8	13:34:24	43.8	43.8
44.5	13:34:25	44.5	44.5
45.0	13:34:26	45.0	45.0
44.9	13:34:27	44.9	44.9
45.6	13:34:28	45.6	45.6
45.5	13:34:29	45.5	45.5
45.6	13:34:30	45.6	45.6
45.3	13:34:31	45.3	45.3
44.7	13:34:32	44.7	44.7
44.3	13:34:33	44.3	44.3
44.0	13:34:34	44.0	44.0
44.0	13:34:35	44.0	44.0
44.0	13:34:36	44.0	44.0
44.4	13:34:37	44.4	44.4
44.6	13:34:38	44.6	44.6
44.6	13:34:39	44.6	44.6
44.9	13:34:40	44.9	44.9
46.4	13:34:41	46.4	46.4
49.6	13:34:42	49.6	49.6
56.1	13:34:43	56.1	56.1
63.6	13:34:44	63.6	63.6
69.5	13:34:45	69.5	69.5
75.3	13:34:46	75.3	75.3
73.5	13:34:47	73.5	73.5
69.8	13:34:48	69.8	69.8
65.9	13:34:49	65.9	65.9
62.0	13:34:50	62.0	62.0
58.1	13:34:51	58.1	58.1
54.4	13:34:52	54.4	54.4
51.4	13:34:53	51.4	51.4
51.1	13:34:54	51.1	51.1
52.5	13:34:55	52.5	52.5
54.9	13:34:56	54.9	54.9
60.4	13:34:57	60.4	60.4
67.0	13:34:58	67.0	67.0
70.1	13:34:59	70.1	70.1
68.4	13:35:00	68.4	68.4
65.8	13:35:01	65.8	65.8
62.2	13:35:02	62.2	62.2
58.8	13:35:03	58.8	58.8
56.1	13:35:04	56.1	56.1
53.9	13:35:05	53.9	53.9

Site 2 - Near NW Corner of Project Site			
SPL	Time	Leq (1 hour Avg.)	Ldn CNEL
67.4	13:24:50	67.4	67.4
68.2	13:24:51	68.2	68.2
68.0	13:24:52	68.0	68.0
63.1	13:24:53	63.1	63.1
60.4	13:24:54	60.4	60.4
57.8	13:24:55	57.8	57.8
55.5	13:24:56	55.5	55.5
53.8	13:24:57	53.8	53.8
53.5	13:24:58	53.5	53.5
55.0	13:24:59	55.0	55.0
58.8	13:25:00	58.8	58.8
62.9	13:25:01	62.9	62.9
69.1	13:25:02	69.1	69.1
67.4	13:25:03	67.4	67.4
66.9	13:25:04	66.9	66.9
66.9	13:25:05	66.9	66.9
67.8	13:25:06	67.8	67.8
67.6	13:25:07	67.6	67.6
64.8	13:25:08	64.8	64.8
61.6	13:25:09	61.6	61.6
59.1	13:25:10	59.1	59.1
59.7	13:25:11	59.7	59.7
65.7	13:25:12	65.7	65.7
69.8	13:25:12	69.8	69.8
67.5	13:25:13	67.5	67.5
64.7	13:25:14	64.7	64.7
63.9	13:25:15	63.9	63.9
66.7	13:25:16	66.7	66.7
72.0	13:25:17	72.0	72.0
70.5	13:25:18	70.5	70.5
67.0	13:25:19	67.0	67.0
63.6	13:25:20	63.6	63.6
60.8	13:25:21	60.8	60.8
59.8	13:25:22	59.8	59.8
62.5	13:25:23	62.5	62.5
65.6	13:25:24	65.6	65.6
65.3	13:25:25	65.3	65.3
62.6	13:25:26	62.6	62.6
59.7	13:25:27	59.7	59.7
57.1	13:25:28	57.1	57.1
56.2	13:25:29	56.2	56.2
57.4	13:25:30	57.4	57.4
60.7	13:25:31	60.7	60.7
66.7	13:25:32	66.7	66.7
70.6	13:25:33	70.6	70.6
68.8	13:25:34	68.8	68.8
65.6	13:25:35	65.6	65.6
62.3	13:25:36	62.3	62.3
59.2	13:25:37	59.2	59.2
56.3	13:25:38	56.3	56.3
53.9	13:25:39	53.9	53.9
51.7	13:25:40	51.7	51.7
49.2	13:25:41	49.2	49.2
46.7	13:25:42	46.7	46.7
44.9	13:25:43	44.9	44.9
43.5	13:25:44	43.5	43.5
42.6	13:25:45	42.6	42.6
43.7	13:25:46	43.7	43.7
41.9	13:25:47	41.9	41.9
42.2	13:25:48	42.2	42.2
42.9	13:25:49	42.9	42.9
43.2	13:25:50	43.2	43.2
42.8	13:25:51	42.8	42.8
41.8	13:25:52	41.8	41.8
41.2	13:25:54	41.2	41.2
40.9	13:25:55	40.9	40.9
40.7	13:25:56	40.7	40.7
40.6	13:25:57	40.6	40.6
40.3	13:25:58	40.3	40.3
40.3	13:25:59	40.3	40.3
40.7	13:26:00	40.7	40.7
41.0	13:26:01	41.0	41.0
41.3	13:26:02	41.3	41.3
41.7	13:26:03	41.7	41.7
41.6	13:26:04	41.6	41.6
42.1	13:26:05	42.1	42.1
42.6	13:26:06	42.6	42.6
43.8	13:26:07	43.8	43.8
45.5	13:26:08	45.5	45.5
45.5	13:26:09	45.5	45.5
50.3	13:26:10	50.3	50.3
54.1	13:26:10	54.1	54.1
57.3	13:26:11	57.3	57.3
64.3	13:26:12	64.3	64.3
70.5	13:26:13	70.5	70.5
69.0	13:26:14	69.0	69.0
65.7	13:26:15	65.7	65.7
62.4	13:26:16	62.4	62.4
59.3	13:26:17	59.3	59.3
56.2	13:26:18	56.2	56.2
53.2	13:26:19	53.2	53.2
50.8	13:26:20	50.8	50.8
49.7	13:26:21	49.7	49.7
50.2	13:26:22	50.2	50.2
53.1	13:26:23	53.1	53.1
57.3	13:26:24	57.3	57.3
65.1	13:26:25	65.1	65.1
69.3	13:26:26	69.3	69.3
67.7	13:26:27	67.7	67.7
65.7	13:26:28	65.7	65.7
66.5	13:26:29	66.5	66.5
67.9	13:26:30	67.9	67.9
66.9	13:26:31	66.9	66.9
65.3	13:26:32	65.3	65.3
67.0	13:26:33	67.0	67.0
69.7	13:26:34	69.7	69.7
68.8	13:26:35	68.8	68.8
65.5	13:26:36	65.5	65.5

Site 1 - Near SE Corner of Project Site				Site 2 - Near NW Corner of Project Site				Site 3 - SW of Project Site, Front Yard at 316 Whipporwill Dr			
SPL	Time	Leq (1 hour Avg.)	Ldn CNEL	SPL	Time	Leq (1 hour Avg.)	Ldn CNEL	SPL	Time	Leq (1 hour Avg.)	Ldn CNEL
51.6	13:35:06	51.6	51.6	52.8	13:27:32	52.8	52.8	58.6	13:42:15	58.6	58.6
49.8	13:35:07	49.8	49.8	56.0	13:27:33	56.0	56.0	61.0	13:42:16	61.0	61.0
48.0	13:35:08	48.0	48.0	59.3	13:27:34	59.3	59.3	61.7	13:42:17	61.7	61.7
47.4	13:35:09	47.4	47.4	64.3	13:27:35	64.3	64.3	62.2	13:42:18	62.2	62.2
47.7	13:35:10	47.7	47.7	71.2	13:27:36	71.2	71.2	61.7	13:42:19	61.7	61.7
48.2	13:35:11	48.2	48.2	72.4	13:27:37	72.4	72.4	60.0	13:42:20	60.0	60.0
49.0	13:35:12	49.0	49.0	70.9	13:27:38	70.9	70.9	59.0	13:42:21	59.0	59.0
54.1	13:35:13	54.1	54.1	68.0	13:27:39	68.0	68.0	56.0	13:42:22	56.0	56.0
58.3	13:35:14	58.3	58.3	65.1	13:27:40	65.1	65.1	53.9	13:42:23	53.9	53.9
61.6	13:35:15	61.6	61.6	61.8	13:27:41	61.8	61.8	52.5	13:42:24	52.5	52.5
63.4	13:35:16	63.4	63.4	58.5	13:27:42	58.5	58.5	52.8	13:42:25	52.8	52.8
63.1	13:35:17	63.1	63.1	63.1	13:27:43	63.1	63.1	56.4	13:42:26	56.4	56.4
61.0	13:35:18	61.0	61.0	52.5	13:27:44	52.5	52.5	52.3	13:42:27	52.3	52.3
58.5	13:35:19	58.5	58.5	49.5	13:27:45	49.5	49.5	53.3	13:42:28	53.3	53.3
56.5	13:35:20	56.5	56.5	47.7	13:27:46	47.7	47.7	55.4	13:42:29	55.4	55.4
54.7	13:35:21	54.7	54.7	47.7	13:27:47	47.7	47.7	57.7	13:42:30	57.7	57.7
52.8	13:35:22	52.8	52.8	47.9	13:27:48	47.9	47.9	61.7	13:42:31	61.7	61.7
51.1	13:35:23	51.1	51.1	49.3	13:27:49	49.3	49.3	66.6	13:42:32	66.6	66.6
50.1	13:35:24	50.1	50.1	51.9	13:27:50	51.9	51.9	69.6	13:42:33	69.6	69.6
50.3	13:35:25	50.3	50.3	54.1	13:27:51	54.1	54.1	68.7	13:42:34	68.7	68.7
50.2	13:35:26	50.2	50.2	55.3	13:27:52	55.3	55.3	66.1	13:42:35	66.1	66.1
50.2	13:35:27	50.2	50.2	57.6	13:27:53	57.6	57.6	62.7	13:42:36	62.7	62.7
49.8	13:35:28	49.8	49.8	62.0	13:27:54	62.0	62.0	58.9	13:42:37	58.9	58.9
49.2	13:35:29	49.2	49.2	66.6	13:27:55	66.6	66.6	58.9	13:42:38	58.9	58.9
48.3	13:35:30	48.3	48.3	69.4	13:27:56	69.4	69.4	54.6	13:42:39	54.6	54.6
47.5	13:35:31	47.5	47.5	67.5	13:27:57	67.5	67.5	58.0	13:42:40	58.0	58.0
46.9	13:35:32	46.9	46.9	65.0	13:27:58	65.0	65.0	62.2	13:42:41	62.2	62.2
46.7	13:35:33	46.7	46.7	64.3	13:27:59	64.3	64.3	63.3	13:42:42	63.3	63.3
46.9	13:35:34	46.9	46.9	64.6	13:28:00	64.6	64.6	64.0	13:42:43	64.0	64.0
48.7	13:35:35	48.7	48.7	63.5	13:28:01	63.5	63.5	63.4	13:42:44	63.4	63.4
49.2	13:35:36	49.2	49.2	64.6	13:28:02	64.6	64.6	61.0	13:42:45	61.0	61.0
48.3	13:35:37	48.3	48.3	69.8	13:28:03	69.8	69.8	57.5	13:42:46	57.5	57.5
47.4	13:35:38	47.4	47.4	70.5	13:28:04	70.5	70.5	53.6	13:42:47	53.6	53.6
47.4	13:35:39	47.4	47.4	71.5	13:28:05	71.5	71.5	50.0	13:42:48	50.0	50.0
47.5	13:35:40	47.5	47.5	73.3	13:28:06	73.3	73.3	47.0	13:42:49	47.0	47.0
48.4	13:35:41	48.4	48.4	76.3	13:28:07	76.3	76.3	45.2	13:42:50	45.2	45.2
49.4	13:35:42	49.4	49.4	77.5	13:28:08	77.5	77.5	47.7	13:42:51	47.7	47.7
50.0	13:35:43	50.0	50.0	76.4	13:28:09	76.4	76.4	53.1	13:42:52	53.1	53.1
50.5	13:35:44	50.5	50.5	73.8	13:28:10	73.8	73.8	59.5	13:42:53	59.5	59.5
50.2	13:35:45	50.2	50.2	70.6	13:28:11	70.6	70.6	64.3	13:42:54	64.3	64.3
48.9	13:35:46	48.9	48.9	67.3	13:28:12	67.3	67.3	65.8	13:42:55	65.8	65.8
46.9	13:35:47	46.9	46.9	64.0	13:28:13	64.0	64.0	66.3	13:42:56	66.3	66.3
46.0	13:35:48	46.0	46.0	61.9	13:28:14	61.9	61.9	66.1	13:42:57	66.1	66.1
45.8	13:35:49	45.8	45.8	61.7	13:28:15	61.7	61.7	64.7	13:42:58	64.7	64.7
45.9	13:35:50	45.9	45.9	67.2	13:28:16	67.2	67.2	62.2	13:42:59	62.2	62.2
46.1	13:35:51	46.1	46.1	75.7	13:28:17	75.7	75.7	60.1	13:43:00	60.1	60.1
46.3	13:35:52	46.3	46.3	74.8	13:28:18	74.8	74.8	58.4	13:43:01	58.4	58.4
46.6	13:35:53	46.6	46.6	71.5	13:28:19	71.5	71.5	56.5	13:43:02	56.5	56.5
47.7	13:35:54	47.7	47.7	68.1	13:28:20	68.1	68.1	61.9	13:43:03	61.9	61.9
48.2	13:35:55	48.2	48.2	64.8	13:28:21	64.8	64.8	53.3	13:43:04	53.3	53.3
48.6	13:35:56	48.6	48.6	61.8	13:28:22	61.8	61.8	52.1	13:43:05	52.1	52.1
49.3	13:35:57	49.3	49.3	59.6	13:28:23	59.6	59.6	51.6	13:43:06	51.6	51.6
51.1	13:35:58	51.1	51.1	58.3	13:28:24	58.3	58.3	50.0	13:43:07	50.0	50.0
55.8	13:35:59	55.8	55.8	61.0	13:28:25	61.0	61.0	51.1	13:43:08	51.1	51.1
56.5	13:36:00	56.5	56.5	64.5	13:28:26	64.5	64.5	52.5	13:43:09	52.5	52.5
54.5	13:36:01	54.5	54.5	66.0	13:28:27	66.0	66.0	54.2	13:43:10	54.2	54.2
52.4	13:36:02	52.4	52.4	62.5	13:28:28	62.5	62.5	64.8	13:43:11	64.8	64.8
51.2	13:36:03	51.2	51.2	62.3	13:28:29	62.3	62.3	61.7	13:43:12	61.7	61.7
50.7	13:36:04	50.7	50.7	60.3	13:28:30	60.3	60.3	65.9	13:43:13	65.9	65.9
52.3	13:36:05	52.3	52.3	60.0	13:28:31	60.0	60.0	67.7	13:43:14	67.7	67.7
52.5	13:36:06	52.5	52.5	62.4	13:28:32	62.4	62.4	66.8	13:43:15	66.8	66.8
51.4	13:36:07	51.4	51.4	66.7	13:28:33	66.7	66.7	64.7	13:43:16	64.7	64.7
50.0	13:36:08	50.0	50.0	70.0	13:28:34	70.0	70.0	61.8	13:43:17	61.8	61.8
49.4	13:36:09	49.4	49.4	68.7	13:28:35	68.7	68.7	58.5	13:43:18	58.5	58.5
48.1	13:36:10	48.1	48.1	66.6	13:28:36	66.6	66.6	55.1	13:43:19	55.1	55.1
46.9	13:36:11	46.9	46.9	64.6	13:28:37	64.6	64.6	51.7	13:43:20	51.7	51.7
46.3	13:36:12	46.3	46.3	62.5	13:28:38	62.5	62.5	49.0	13:43:21	49.0	49.0
45.6	13:36:13	45.6	45.6	63.5	13:28:39	63.5	63.5	47.4	13:43:22	47.4	47.4
44.9	13:36:14	44.9	44.9	63.1	13:28:40	63.1	63.1	46.7	13:43:23	46.7	46.7
45.3	13:36:15	45.3	45.3	64.1	13:28:41	64.1	64.1	47.3	13:43:24	47.3	47.3
47.9	13:36:16	47.9	47.9	66.1	13:28:42	66.1	66.1	46.8	13:43:25	46.8	46.8
50.1	13:36:17	50.1	50.1	67.0	13:28:43	67.0	67.0	46.0	13:43:26	46.0	46.0
51.6	13:36:18	51.6	51.6	66.4	13:28:44	66.4	66.4	44.6	13:43:27	44.6	44.6
51.5	13:36:19	51.5	51.5	68.9	13:28:45	68.9	68.9	43.9	13:43:28	43.9	43.9
49.7	13:36:20	49.7	49.7	60.7	13:28:46	60.7	60.7	45.8	13:43:29	45.8	45.8
48.7	13:36:21	48.7	48.7	57.5	13:28:47	57.5	57.5	44.2	13:43:30	44.2	44.2
48.1	13:36:22	48.1	48.1	54.4	13:28:48	54.4	54.4	42.7	13:43:31	42.7	42.7
47.6	13:36:23	47.6	47.6	51.6	13:28:49	51.6	51.6	42.2	13:43:32	42.2	42.2
48.1	13:36:24	48.1	48.1	49.9	13:28:50	49.9	49.9	42.7	13:43:33	42.7	42.7
47.1	13:36:25	47.1	47.1	49.9	13:28:51	49.9	49.9	44.1	13:43:34	44.1	44.1
47.7	13:36:26	47.7	47.7	51.4	13:28:52	51.4	51.4	48.1	13:43:35	48.1	48.1
47.5	13:36:27	47.5	47.5	47.5	13:28:53	47.5	47.5	49.4	13:43:36	49.4	49.4
46.4	13:36:28	46.4	46.4	58.3	13:28:54	58.3	58.3	49.3	13:43:37	49.3	49.3
46.0	13:36:29	46.0	46.0	64.3	13:28:55	64.3	64.3	48.0	13:43:38	48.0	48.0
46.6	13:36:30	46.6	46.6	70.2	13:28:56	70.2	70.2	46.8	13:43:39	46.8	46.8
48.1	13:36:31	48.1	48.1	71.6	13:28:57	71.6	71.6	45.5	13:43:40	45.5	45.5
48.4	13:36:32	48.4	48.4	69.2	13:28:58	69.2	69.2	46.2	13:43:41	46.2	46.2
48.5	13:36:33	48.5	48.5	66.1	13:28:59	66.1	66.1	43.2	13:43:42	43.2	43.2
47.7	13:36:34	47.7	47.7	62.8	13:29:00	62.8	62.8	42.8	13:43:43	42.8	42.8
46.8	13:36:35	46.8	46.8	59.6	13:29:01	59.6	59.6	42.9	13:43:44	42.9	42.9
45.9	13:36:36	45.9	45.9	56.6	13:29:02	56.6	56.6	44.6	13:43:45	44.6	44.6
45.5	13:36:37	45.5	45.5	54.0	13:29:03	54.0	54.0	44.3	13:43:46	44.3	44.3
45.5	13:36:38	45.5	45.5	51.9	13:29:04	51.9	51.9	43.1	13:43:47	43.1	43.1
45.6	13:36:39	45.6	45.6	50.8	13:29:05	50.8	50.8	42.7	13:43:48	42.7	42.7
45.6	13:36:40	45.6	45.6	52.0	13:29:06	52.0	52.0	42.5	13:43:49	42.5	42.5
45.7	13:36:41	45.7	45.7	50.0	13:29:07	50.0	50.0	42.8	13:43:50	42.8	42.8
45.6	13:36:42	45.6	45.6	51.6	13:29:08	51.6	51.6	43.0	13:43:51	43.0	43.0
45.8	13:36:43										

Site 1 - Near SE Corner of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn CNEL
49.5	13:37:48	49.5	49.5
49.0	13:37:49	49.0	49.0
48.6	13:37:50	48.6	48.6
47.7	13:37:51	47.7	47.7
48.0	13:37:52	48.0	48.0
48.1	13:37:53	48.1	48.1
47.4	13:37:54	47.4	47.4
48.9	13:37:55	48.9	48.9
48.9	13:37:56	48.9	48.9
47.7	13:37:57	47.7	47.7
46.9	13:37:58	46.9	46.9
45.8	13:37:59	45.8	45.8
45.6	13:38:00	45.6	45.6
45.3	13:38:01	45.3	45.3
44.8	13:38:02	44.8	44.8
44.5	13:38:03	44.5	44.5
45.0	13:38:04	45.0	45.0
44.9	13:38:05	44.9	44.9
45.6	13:38:06	45.6	45.6
45.3	13:38:07	45.3	45.3
44.0	13:38:08	44.0	44.0
43.4	13:38:09	43.4	43.4
43.9	13:38:10	43.9	43.9
44.2	13:38:11	44.2	44.2
44.3	13:38:12	44.3	44.3
44.3	13:38:13	44.3	44.3
44.5	13:38:14	44.5	44.5
44.7	13:38:15	44.7	44.7
45.4	13:38:16	45.4	45.4
49.6	13:38:17	49.6	49.6
56.3	13:38:18	56.3	56.3
64.1	13:38:19	64.1	64.1
72.8	13:38:20	72.8	72.8
74.4	13:38:21	74.4	74.4
71.7	13:38:22	71.7	71.7
69.1	13:38:23	69.1	69.1
66.0	13:38:24	66.0	66.0
62.7	13:38:25	62.7	62.7
59.1	13:38:26	59.1	59.1
55.4	13:38:27	55.4	55.4
51.9	13:38:28	51.9	51.9
48.8	13:38:29	48.8	48.8
46.3	13:38:30	46.3	46.3
44.5	13:38:31	44.5	44.5
43.4	13:38:32	43.4	43.4
42.7	13:38:33	42.7	42.7
43.0	13:38:34	43.0	43.0
44.0	13:38:35	44.0	44.0
43.8	13:38:36	43.8	43.8
44.2	13:38:37	44.2	44.2
43.9	13:38:38	43.9	43.9
44.3	13:38:39	44.3	44.3
46.5	13:38:40	46.5	46.5
47.5	13:38:41	47.5	47.5
46.6	13:38:42	46.6	46.6
45.9	13:38:43	45.9	45.9
44.8	13:38:44	44.8	44.8
44.3	13:38:45	44.3	44.3
44.2	13:38:46	44.2	44.2
45.1	13:38:47	45.1	45.1
45.1	13:38:48	45.1	45.1
45.2	13:38:49	45.2	45.2
45.0	13:38:50	45.0	45.0
45.0	13:38:51	45.0	45.0
44.7	13:38:52	44.7	44.7
44.8	13:38:53	44.8	44.8
44.8	13:38:54	44.8	44.8
44.3	13:38:55	44.3	44.3
44.2	13:38:56	44.2	44.2
44.8	13:38:57	44.8	44.8
44.8	13:38:58	44.8	44.8
44.9	13:38:59	44.9	44.9
46.0	13:39:00	46.0	46.0
47.2	13:39:01	47.2	47.2
49.7	13:39:02	49.7	49.7
56.2	13:39:03	56.2	56.2
61.3	13:39:04	61.3	61.3
66.1	13:39:05	66.1	66.1
72.5	13:39:06	72.5	72.5
77.8	13:39:07	77.8	77.8
78.0	13:39:08	78.0	78.0
74.9	13:39:09	74.9	74.9
72.0	13:39:10	72.0	72.0
73.7	13:39:11	73.7	73.7
74.0	13:39:12	74.0	74.0
71.0	13:39:13	71.0	71.0
67.4	13:39:14	67.4	67.4
64.0	13:39:15	64.0	64.0
60.6	13:39:16	60.6	60.6
57.9	13:39:17	57.9	57.9
55.3	13:39:18	55.3	55.3
52.9	13:39:19	52.9	52.9
51.1	13:39:20	51.1	51.1
50.3	13:39:21	50.3	50.3
50.8	13:39:22	50.8	50.8
51.9	13:39:23	51.9	51.9
51.0	13:39:24	51.0	51.0
49.3	13:39:25	49.3	49.3
49.7	13:39:26	49.7	49.7
50.7	13:39:27	50.7	50.7
50.2	13:39:28	50.2	50.2
49.3	13:39:29	49.3	49.3
49.0	13:39:30	49.0	49.0
50.5	13:39:31	50.5	50.5
53.0	13:39:32	53.0	53.0
54.4	13:39:33	54.4	54.4
54.7	13:39:34	54.7	54.7
55.5	13:39:35	55.5	55.5
55.4	13:39:36	55.4	55.4
55.1	13:39:37	55.1	55.1
55.0	13:39:38	55.0	55.0
55.1	13:39:39	55.1	55.1
55.9	13:39:40	55.9	55.9
57.7	13:39:41	57.7	57.7
60.0	13:39:42	60.0	60.0
62.2	13:39:43	62.2	62.2
66.0	13:39:44	66.0	66.0
74.5	13:39:45	74.5	74.5
79.1	13:39:46	79.1	79.1
77.7	13:39:47	77.7	77.7
74.7	13:39:48	74.7	74.7
71.1	13:39:49	71.1	71.1
67.4	13:39:50	67.4	67.4
63.8	13:39:51	63.8	63.8
60.6	13:39:52	60.6	60.6
58.0	13:39:53	58.0	58.0
55.0	13:39:54	55.0	55.0
52.7	13:39:55	52.7	52.7
49.8	13:39:56	49.8	49.8
47.8	13:39:57	47.8	47.8
46.3	13:39:58	46.3	46.3
45.3	13:39:59	45.3	45.3
44.4	13:40:00	44.4	44.4
43.3	13:40:01	43.3	43.3
42.4	13:40:02	42.4	42.4
42.0	13:40:03	42.0	42.0
41.8	13:40:04	41.8	41.8
41.9	13:40:05	41.9	41.9
42.0	13:40:06	42.0	42.0
42.4	13:40:07	42.4	42.4
43.0	13:40:08	43.0	43.0
42.9	13:40:09	42.9	42.9
48.3	13:40:10	48.3	48.3
53.3	13:40:11	53.3	53.3
51.5	13:40:12	51.5	51.5
48.7	13:40:13	48.7	48.7
47.0	13:40:14	47.0	47.0
46.8	13:40:15	46.8	46.8
48.4	13:40:16	48.4	48.4
49.8	13:40:17	49.8	49.8
49.7	13:40:18	49.7	49.7
49.9	13:40:19	49.9	49.9
49.7	13:40:20	49.7	49.7
49.2	13:40:21	49.2	49.2
48.8	13:40:22	48.8	48.8
48.4	13:40:23	48.4	48.4
48.1	13:40:24	48.1	48.1
48.8	13:40:25	48.8	48.8
49.0	13:40:26	49.0	49.0
49.4	13:40:27	49.4	49.4
49.8	13:40:28	49.8	49.8
49.0	13:40:29	49.0	49.0

Site 2 - Near NW Corner of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn CNEL
67.0	13:30:14	67.0	67.0
69.6	13:30:15	69.6	69.6
67.8	13:30:16	67.8	67.8
64.8	13:30:17	64.8	64.8
61.6	13:30:18	61.6	61.6
58.1	13:30:19	58.1	58.1
54.9	13:30:20	54.9	54.9
52.6	13:30:21	52.6	52.6
50.2	13:30:22	50.2	50.2
47.8	13:30:23	47.8	47.8
45.5	13:30:24	45.5	45.5
43.7	13:30:25	43.7	43.7
43.4	13:30:26	43.4	43.4
43.6	13:30:27	43.6	43.6
42.9	13:30:28	42.9	42.9
42.8	13:30:29	42.8	42.8
42.9	13:30:30	42.9	42.9
44.2	13:30:31	44.2	44.2
45.8	13:30:32	45.8	45.8
47.4	13:30:33	47.4	47.4
48.0	13:30:34	48.0	48.0
48.6	13:30:35	48.6	48.6
49.8	13:30:36	49.8	49.8
50.2	13:30:37	50.2	50.2
51.4	13:30:38	51.4	51.4
52.5	13:30:39	52.5	52.5
56.5	13:30:40	56.5	56.5
58.9	13:30:41	58.9	58.9
62.9	13:30:42	62.9	62.9
66.4	13:30:43	66.4	66.4
66.9	13:30:44	66.9	66.9
66.3	13:30:45	66.3	66.3
68.7	13:30:46	68.7	68.7
74.3	13:30:47	74.3	74.3
73.7	13:30:48	73.7	73.7
71.2	13:30:49	71.2	71.2
71.5	13:30:50	71.5	71.5
70.7	13:30:51	70.7	70.7
67.8	13:30:52	67.8	67.8
66.6	13:30:53	66.6	66.6
71.6	13:30:54	71.6	71.6
70.9	13:30:55	70.9	70.9
67.7	13:30:56	67.7	67.7
64.3	13:30:57	64.3	64.3
61.3	13:30:58	61.3	61.3
57.9	13:30:59	57.9	57.9
54.9	13:31:00	54.9	54.9
52.6	13:31:01	52.6	52.6
43.8	13:31:02	43.8	43.8
54.5	13:31:03	54.5	54.5
56.4	13:31:04	56.4	56.4
56.5	13:31:05	56.5	56.5
57.2	13:31:06	57.2	57.2
57.9	13:31:07	57.9	57.9
59.1	13:31:08	59.1	59.1
61.8	13:31:09	61.8	61.8
63.0	13:31:10	63.0	63.0
62.2	13:31:11	62.2	62.2
59.9	13:31:12	59.9	59.9
57.3	13:31:13	57.3	57.3
55.6	13:31:14	55.6	55.6
54.6	13:31:15	54.6	54.6
54.4	13:31:16	54.4	54.4
56.9	13:31:17	56.9	56.9
61.8	13:31:18	61.8	61.8
61.8	13:31:19	61.8	61.8
70.1	13:31:20	70.1	70.1
69.7	13:31:21	69.7	69.7
74.2	13:31:22	74.2	74.2
74.6	13:31:23	74.6	74.6
71.7	13:31:24	71.7	71.7
68.3	13:31:25	68.3	68.3
64.9	13:31:26	64.9	64.9
61.7	13:31:27	61.7	61.7
58.7	13:31:28	58.7	58.7
56.2	13:31:29	56.2	56.2
54.0	13:31:30	54.0	54.0
52.1	13:31:31	52.1	52.1
49.9	13:31:32	49.9	49.9
49.3	13:31:33	49.3	49.3
48.8	13:31:34	48.8	48.8
47.7	13:31:35	47.7	47.7
47.2	13:31:36	47.2	47.2
47.2	13:31:37	47.2	47.2
46.4	13:31:38	46.4	46.4
45.7	13:31:39	45.7	45.7
45.0	13:31:40	45.0	45.0
44.5	13:31:41	44.5	44.5
43.9	13:31:42	43.9	43.9
43.3	13:31:43	43.3	43.3
43.7	13:31:44	43.7	43.7
45.0	13:31:45	45.0	45.0
45.2	13:31:46	45.2	45.2
46.0	13:31:47	46.0	46.0
47.6	13:31:48	47.6	47.6
49.7	13:31:49	49.7	49.7
49.8	13:31:50	49.8	49.8
51.5	13:31:51	51.5	51.5
53.0	13:31:52	53.0	53.0
54.8	13:31:53	54.8	54.8
55.6	13:31:54	55.6	55.6
56.7	13:31:55	56.7	56.7
59.0	13:31:56	59.0	59.0
62.3	13:31:57	62.3	62.3
65.5	13:31:58	65.5	65.5
67.1	13:31:59	67.1	67.1
66.7	13:32:00	66.7	66.7

Site 1 - Near SE Corner of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn CNEL
48.5	13:40:30	48.5	48.5
47.7	13:40:31	47.7	47.7
46.3	13:40:32	46.3	46.3
46.4	13:40:33	46.4	46.4
45.8	13:40:34	45.8	45.8
45.4	13:40:35	45.4	45.4
45.9	13:40:36	45.9	45.9
46.7	13:40:37	46.7	46.7
47.8	13:40:38	47.8	47.8
48.6	13:40:39	48.6	48.6
47.6	13:40:40	47.6	47.6
46.2	13:40:41	46.2	46.2
45.4	13:40:42	45.4	45.4
45.1	13:40:43	45.1	45.1
44.7	13:40:44	44.7	44.7
44.3	13:40:45	44.3	44.3
44.3	13:40:46	44.3	44.3
44.0	13:40:47	44.0	44.0
44.2	13:40:48	44.2	44.2
45.4	13:40:49	45.4	45.4
45.4	13:40:50	45.4	45.4
46.5	13:40:51	46.5	46.5
45.9	13:40:52	45.9	45.9
45.0	13:40:53	45.0	45.0
43.9	13:40:54	43.9	43.9
43.1	13:40:55	43.1	43.1
42.6	13:40:56	42.6	42.6
42.3	13:40:57	42.3	42.3
42.2	13:40:58	42.2	42.2
42.2	13:40:59	42.2	42.2
42.8	13:41:00	42.8	42.8
43.3	13:41:01	43.3	43.3
43.5	13:41:02	43.5	43.5
44.4	13:41:03	44.4	44.4
47.0	13:41:04	47.0	47.0
49.6	13:41:05	49.6	49.6
54.2	13:41:06	54.2	54.2
61.9	13:41:07	61.9	61.9
69.2	13:41:08	69.2	69.2
72.7	13:41:09	72.7	72.7
70.3	13:41:10	70.3	70.3
67.3	13:41:11	67.3	67.3
63.8	13:41:12	63.8	63.8
60.7	13:41:13	60.7	60.7
57.7	13:41:14	57.7	57.7
54.7	13:41:15	54.7	54.7
51.7	13:41:16	51.7	51.7
49.4	13:41:17	49.4	49.4
47.5	13:41:18	47.5	47.5
45.8	13:41:19	45.8	45.8
44.5	13:41:20	44.5	44.5
43.5	13:41:21	43.5	43.5
42.9	13:41:22	42.9	42.9
43.2	13:41:23	43.2	43.2
43.4	13:41:24	43.4	43.4
43.3	13:41:25	43.3	43.3
42.8	13:41:26	42.8	42.8
42.5	13:41:27	42.5	42.5
43.0	13:41:28	43.0	43.0
43.7	13:41:29	43.7	43.7
45.0	13:41:30	45.0	45.0
46.2	13:41:31	46.2	46.2
46.7	13:41:32	46.7	46.7
47.5	13:41:33	47.5	47.5
47.1	13:41:34	47.1	47.1
47.1	13:41:35	47.1	47.1
45.2	13:41:36	45.2	45.2
44.7	13:41:37	44.7	44.7
44.5	13:41:38	44.5	44.5
44.0	13:41:39	44.0	44.0
44.1	13:41:40	44.1	44.1
45.6	13:41:41	45.6	45.6
45.2	13:41:42	45.2	45.2
45.0	13:41:43	45.0	45.0
44.7	13:41:44	44.7	44.7
44.4	13:41:45	44.4	44.4
44.5	13:41:46	44.5	44.5
45.3	13:41:47	45.3	45.3
45.3	13:41:48	45.3	45.3
45.3	13:41:49	45.3	45.3
45.0	13:41:50	45.0	45.0
44.9	13:41:51	44.9	44.9
45.2	13:41:52	45.2	45.2
44.5	13:41:53	44.5	44.5
43.9	13:41:54	43.9	43.9
43.9	13:41:55	43.9	43.9
43.6	13:41:56	43.6	43.6
43.7	13:41:57	43.7	43.7
44.4	13:41:58	44.4	44.4
46.7	13:41:59	46.7	46.7
48.2	13:42:00	48.2	48.2
47.6	13:42:01	47.6	47.6
46.9	13:42:02	46.9	46.9
46.4	13:42:03	46.4	46.4
46.1	13:42:04	46.1	46.1
46.4	13:42:05	46.4	46.4
47.0	13:42:06	47.0	47.0
47.0	13:42:07	47.0	47.0
46.4	13:42:08	46.4	46.4
45.9	13:42:09	45.9	45.9
45.8	13:42:10	45.8	45.8
45.1	13:42:11	45.1	45.1
44.3	13:42:12	44.3	44.3
43.9	13:42:13	43.9	43.9
43.4	13:42:14	43.4	43.4
44.2	13:42:15	44.2	44.2
44.9	13:42:16	44.9	44.9
44.8	13:42:17	44.8	44.8
45.2	13:42:18	45.2	45.2
46.8	13:42:19	46.8	46.8
47.1	13:42:20	47.1	47.1
47.6	13:42:21	47.6	47.6
47.9	13:42:22	47.9	47.9
47.7	13:42:23	47.7	47.7
48.4	13:42:24	48.4	48.4
48.8	13:42:25	48.8	48.8
53.6	13:42:26	53.6	53.6
57.4	13:42:27	57.4	57.4
62.6	13:42:28	62.6	62.6
65.5	13:42:29	65.5	65.5
65.6	13:42:30	65.6	65.6
64.1	13:42:31	64.1	64.1
67.4	13:42:32	67.4	67.4
75.1	13:42:33	75.1	75.1
76.4	13:42:34	76.4	76.4
74.3	13:42:35	74.3	74.3
71.7	13:42:36	71.7	71.7
69.1	13:42:37	69.1	69.1
67.3	13:42:38	67.3	67.3
64.4	13:42:39	64.4	64.4
61.7	13:42:40	61.7	61.7
59.0	13:42:41	59.0	59.0
56.7	13:42:42	56.7	56.7
53.8	13:42:43	53.8	53.8
50.6	13:42:44	50.6	50.6
48.4	13:42:45	48.4	48.4
47.1	13:42:46	47.1	47.1
45.9	13:42:47	45.9	45.9
45.5	13:42:48	45.5	45.5
44.6	13:42:49	44.6	44.6
45.1	13:42:50	45.1	45.1
45.4	13:42:51	45.4	45.4
45.2	13:42:52	45.2	45.2
45.3	13:42:53	45.3	45.3
45.5	13:42:54	45.5	45.5
47.0	13:42:55	47.0	47.0
47.1	13:42:56	47.1	47.1
47.3	13:42:57	47.3	47.3
47.0	13:42:58	47.0	47.0
47.1	13:42:59	47.1	47.1
48.2	13:43:00	48.2	48.2
49.5	13:43:01	49.5	49.5
52.4	13:43:02	52.4	52.4
58.4	13:43:03	58.4	58.4
64.2	13:43:04	64.2	64.2
67.1	13:43:05	67.1	67.1
67.0	13:43:06	67.0	67.0
63.9	13:43:07	63.9	63.9
60.6	13:43:08	60.6	60.6
57.7	13:43:09	57.7	57.7
54.8	13:43:10	54.8	54.8
52.0	13:43:11	52.0	52.0

Site 2 - Near NW Corner of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn CNEL
49.7	13:32:56	49.7	49.7
47.5	13:32:57	47.5	47.5
44.8	13:32:58	44.8	44.8
44.8	13:32:59	44.8	44.8
43.8	13:33:00	43.8	43.8
43.3	13:33:01	43.3	43.3
45.3	13:33:02	45.3	45.3
45.9	13:33:03	45.9	45.9
47.1	13:33:04	47.1	47.1
48.7	13:33:05	48.7	48.7
49.7	13:33:06	49.7	49.7
50.4	13:33:07	50.4	50.4
51.0	13:33:08	51.0	51.0
51.4	13:33:09	51.4	51.4
51.3	13:33:10	51.3	51.3
51.6	13:33:11	51.6	51.6
52.7	13:33:12	52.7	52.7
54.2	13:33:13	54.2	54.2
55.4	13:33:14	55.4	55.4
57.6	13:33:15	57.6	57.6
61.1	13:33:16	61.1	61.1
66.7	13:33:17	66.7	66.7
71.8	13:33:18	71.8	71.8
72.5	13:33:19	72.5	72.5
69.8	13:33:20	69.8	69.8
67.7	13:33:21	67.7	67.7
67.9	13:33:22	67.9	67.9
67.4	13:33:23	67.4	67.4
64.9	13:33:24	64.9	64.9
62.1	13:33:25	62.1	62.1
59.7	13:33:26	59.7	59.7
58.3	13:33:27	58.3	58.3
58.4	13:33:28	58.4	58.4
59.8	13:33:29	59.8	59.8
62.6	13:33:30	62.6	62.6
68.5	13:33:31	68.5	68.5
72.8	13:33:32	72.8	72.8
72.1	13:33:33	72.1	72.1
70.6	13:33:34	70.6	70.6
71.3	13:33:35	71.3	71.3
70.0	13:33:36	70.0	70.0
70.3	13:33:37	70.3	70.3
73.5	13:33:38	73.5	73.5
74.4	13:33:39	74.4	74.4
72.3	13:33:40	72.3	72.3
69.5	13:33:41	69.5	69.5
66.5	13:33:42	66.5	66.5
63.5	13:33:43	63.5	63.5
60.8	13:33:44	60.8	60.8
58.7	13:33:45	58.7	58.7
57.2	13:33:46	57.2	57.2
56.8	13:33:47	56.8	56.8
57.2	13:33:48	57.2	57.2
58.3	13:33:49	58.3	58.3
60.7	13:33:50	60.7	60.7
63.3	13:33:51	63.3	63.3
65.6	13:33:52	65.6	65.6
67.9	13:33:53	67.9	67.9
71.3	13:33:54	71.3	71.3
72.2	13:33:55	72.2	72.2
69.5	13:33:56	69.5	69.5
67.0	13:33:57	67.0	67.0
67.7	13:33:58	67.7	67.7
68.8	13:33:59	68.8	68.8
66.9	13:34:00	66.9	66.9
64.6	13:34:01	64.6	64.6
64.6	13:34:02	64.6	64.6
72.9	13:34:03	72.9	72.9
73.1	13:34:04	73.1	73.1
69.6	13:34:05	69.6	69.6
66.0	13:34:06	66.0	66.0
62.6	13:34:07	62.6	62.6
60.0	13:34:08	60.0	60.0
58.2	13:34:09	58.2	58.2
62.2	13:34:10	62.2	62.2
66.1	13:34:11	66.1	66.1
69.9	13:34:12	69.9	69.9
65.7	13:34:13	65.7	65.7
66.6	13:34:14	66.6	66.6
63.6	13:34:15	63.6	63.6
60.4	13:34:16	60.4	60.4
57.2	13:34:17	57.2	57.2
54.3	13:34:18	54.3	54.3
51.3	13:34:19	51.3	51.3
48.6	13:34:20	48.6	48.6
47.1	13:34:21	47.1	47.1
43.6	13:34:22	43.6	43.6
42.2	13:34:23	42.2	42.2
46.5	13:34:24	46.5	46.5
47.1	13:34:25	47.1	47.1
48.4	13:34:26	48.4	48.4
49.6	13:34:27	49.6	49.6
50.0	13:34:28	50.0	50.0
51.1	13:34:29	51.1	51.1
52.5	13:34:30	52.5	52.5
56.3	13:34:31	56.3	56.3
62.4	13:34:32	62.4	62.4
69.2	13:34:33	69.2	69.2
68.4	13:34:34	68.4	68.4
65.0	13:34:35	65.0	65.0
62.1	13:34:36	62.1	62.1
60.8	13:34:37	60.8	60.8
59.5	13:34:38	59.5	59.5
60.4	13:34:39	60.4	60.4
63.6	13:34:40	63.6	63.6
66.9	13:34:41	66.9	66.9
68.3	13:34:42	68.3	68.3

Site 1 - Near SE Corner of Project Site				Site 2 - Near NW Corner of Project Site				Site 3 - SW of Project Site, Front Yard at 316 Whipporwill Dr			
SPL	Time	Leq (1 hour Avg.)	Ldn CNEL	SPL	Time	Leq (1 hour Avg.)	Ldn CNEL	SPL	Time	Leq (1 hour Avg.)	Ldn CNEL
49.4	13:43:12	49.4	49.4	73.1	13:35:38	73.1	73.1	44.9	13:50:21	44.9	44.9
46.9	13:43:13	46.9	46.9	72.1	13:35:39	72.1	72.1	45.6	13:50:22	45.6	45.6
44.7	13:43:14	44.7	44.7	69.0	13:35:40	69.0	69.0	47.4	13:50:23	47.4	47.4
44.5	13:43:15	44.5	44.5	65.9	13:35:41	65.9	65.9	49.1	13:50:24	49.1	49.1
45.4	13:43:16	45.4	45.4	63.4	13:35:42	63.4	63.4	49.1	13:50:25	49.1	49.1
46.0	13:43:17	46.0	46.0	60.8	13:35:43	60.8	60.8	48.0	13:50:26	48.0	48.0
46.1	13:43:18	46.1	46.1	59.3	13:35:44	59.3	59.3	58.2	13:50:27	58.2	58.2
45.4	13:43:19	45.4	45.4	56.1	13:35:45	56.1	56.1	45.4	13:50:28	45.4	45.4
44.8	13:43:20	44.8	44.8	54.5	13:35:46	54.5	54.5	50.7	13:50:29	50.7	50.7
44.0	13:43:21	44.0	44.0	54.9	13:35:47	54.9	54.9	49.4	13:50:30	49.4	49.4
43.7	13:43:22	43.7	43.7	54.4	13:35:48	54.4	54.4	48.7	13:50:31	48.7	48.7
43.2	13:43:23	43.2	43.2	52.2	13:35:49	52.2	52.2	49.2	13:50:32	49.2	49.2
42.6	13:43:24	42.6	42.6	51.6	13:35:50	51.6	51.6	49.0	13:50:33	49.0	49.0
42.5	13:43:25	42.5	42.5	52.8	13:35:51	52.8	52.8	49.7	13:50:34	49.7	49.7
42.6	13:43:26	42.6	42.6	55.5	13:35:52	55.5	55.5	49.9	13:50:35	49.9	49.9
43.2	13:43:27	43.2	43.2	59.3	13:35:53	59.3	59.3	49.9	13:50:36	49.9	49.9
44.4	13:43:28	44.4	44.4	64.4	13:35:54	64.4	64.4	49.6	13:50:37	49.6	49.6
44.3	13:43:29	44.3	44.3	71.6	13:35:55	71.6	71.6	50.0	13:50:38	50.0	50.0
43.9	13:43:30	43.9	43.9	72.1	13:35:56	72.1	72.1	65.8	13:50:39	65.8	65.8
43.7	13:43:31	43.7	43.7	71.3	13:35:57	71.3	71.3	68.4	13:50:40	68.4	68.4
43.9	13:43:32	43.9	43.9	71.0	13:35:58	71.0	71.0	64.2	13:50:41	64.2	64.2
44.2	13:43:33	44.2	44.2	69.0	13:35:59	69.0	69.0	60.3	13:50:42	60.3	60.3
44.6	13:43:34	44.6	44.6	68.0	13:36:00	68.0	68.0	57.1	13:50:43	57.1	57.1
45.4	13:43:35	45.4	45.4	67.5	13:36:01	67.5	67.5	67.5	13:50:44	67.5	67.5
45.8	13:43:36	45.8	45.8	65.6	13:36:02	65.6	65.6	54.4	13:50:45	54.4	54.4
46.3	13:43:37	46.3	46.3	64.2	13:36:03	64.2	64.2	55.7	13:50:46	55.7	55.7
46.1	13:43:38	46.1	46.1	66.6	13:36:04	66.6	66.6	58.3	13:50:47	58.3	58.3
45.4	13:43:39	45.4	45.4	69.3	13:36:05	69.3	69.3	69.5	13:50:48	69.5	69.5
44.8	13:43:40	44.8	44.8	68.4	13:36:06	68.4	68.4	63.4	13:50:49	63.4	63.4
43.7	13:43:41	43.7	43.7	65.5	13:36:07	65.5	65.5	63.9	13:50:50	63.9	63.9
43.2	13:43:42	43.2	43.2	62.8	13:36:08	62.8	62.8	64.9	13:50:51	64.9	64.9
43.4	13:43:43	43.4	43.4	63.5	13:36:09	63.5	63.5	61.7	13:50:52	61.7	61.7
44.1	13:43:44	44.1	44.1	64.7	13:36:10	64.7	64.7	67.4	13:50:53	67.4	67.4
45.6	13:43:45	45.6	45.6	67.3	13:36:11	67.3	67.3	68.7	13:50:54	68.7	68.7
46.6	13:43:46	46.6	46.6	66.2	13:36:12	66.2	66.2	68.8	13:50:55	68.8	68.8
46.9	13:43:47	46.9	46.9	63.7	13:36:13	63.7	63.7	67.2	13:50:56	67.2	67.2
46.7	13:43:48	46.7	46.7	65.7	13:36:14	65.7	65.7	64.3	13:50:57	64.3	64.3
49.0	13:43:49	49.0	49.0	65.4	13:36:15	65.4	65.4	61.3	13:50:58	61.3	61.3
48.6	13:43:50	48.6	48.6	68.3	13:36:16	68.3	68.3	58.6	13:50:59	58.6	58.6
48.4	13:43:51	48.4	48.4	67.1	13:36:17	67.1	67.1	57.7	13:51:00	57.7	57.7
51.1	13:43:52	51.1	51.1	63.8	13:36:18	63.8	63.8	58.8	13:51:01	58.8	58.8
51.6	13:43:53	51.6	51.6	60.5	13:36:19	60.5	60.5	58.8	13:51:02	58.8	58.8
49.5	13:43:54	49.5	49.5	57.0	13:36:20	57.0	57.0	63.7	13:51:03	63.7	63.7
48.4	13:43:55	48.4	48.4	53.4	13:36:21	53.4	53.4	64.5	13:51:04	64.5	64.5
47.1	13:43:56	47.1	47.1	50.0	13:36:22	50.0	50.0	50.9	13:51:05	50.9	50.9
47.1	13:43:57	47.1	47.1	46.9	13:36:23	46.9	46.9	63.4	13:51:06	63.4	63.4
47.7	13:43:58	47.7	47.7	44.7	13:36:24	44.7	44.7	62.8	13:51:07	62.8	62.8
50.6	13:43:59	50.6	50.6	43.9	13:36:25	43.9	43.9	63.0	13:51:08	63.0	63.0
59.0	13:44:00	59.0	59.0	44.5	13:36:26	44.5	44.5	44.5	13:51:09	44.5	44.5
64.4	13:44:01	64.4	64.4	45.0	13:36:27	45.0	45.0	62.5	13:51:10	62.5	62.5
71.1	13:44:02	71.1	71.1	45.5	13:36:28	45.5	45.5	60.5	13:51:11	60.5	60.5
73.0	13:44:03	73.0	73.0	46.9	13:36:29	46.9	46.9	58.2	13:51:12	58.2	58.2
70.5	13:44:04	70.5	70.5	49.5	13:36:30	49.5	49.5	49.2	13:51:13	49.2	49.2
66.9	13:44:05	66.9	66.9	52.4	13:36:31	52.4	52.4	53.3	13:51:14	53.3	53.3
63.6	13:44:06	63.6	63.6	55.4	13:36:32	55.4	55.4	51.3	13:51:15	51.3	51.3
60.7	13:44:07	60.7	60.7	60.0	13:36:33	60.0	60.0	49.4	13:51:16	49.4	49.4
58.4	13:44:08	58.4	58.4	51.3	13:36:34	51.3	51.3	65.3	13:51:17	65.3	65.3
56.3	13:44:09	56.3	56.3	68.3	13:36:35	68.3	68.3	48.2	13:51:18	48.2	48.2
53.9	13:44:10	53.9	53.9	68.3	13:36:36	68.3	68.3	48.7	13:51:19	48.7	48.7
52.1	13:44:11	52.1	52.1	68.5	13:36:37	68.5	68.5	49.1	13:51:20	49.1	49.1
51.4	13:44:12	51.4	51.4	66.2	13:36:38	66.2	66.2	48.6	13:51:21	48.6	48.6
50.7	13:44:13	50.7	50.7	63.0	13:36:39	63.0	63.0	63.0	13:51:22	63.0	63.0
50.4	13:44:14	50.4	50.4	59.8	13:36:40	59.8	59.8	50.9	13:51:23	50.9	50.9
51.8	13:44:15	51.8	51.8	57.5	13:36:41	57.5	57.5	53.0	13:51:24	53.0	53.0
54.8	13:44:16	54.8	54.8	57.0	13:36:42	57.0	57.0	55.0	13:51:25	55.0	55.0
58.7	13:44:17	58.7	58.7	68.3	13:36:43	68.3	68.3	58.0	13:51:26	58.0	58.0
63.7	13:44:18	63.7	63.7	61.3	13:36:44	61.3	61.3	61.2	13:51:27	61.2	61.2
68.9	13:44:19	68.9	68.9	66.3	13:36:45	66.3	66.3	62.8	13:51:28	62.8	62.8
72.3	13:44:20	72.3	72.3	66.6	13:36:46	66.6	66.6	63.8	13:51:29	63.8	63.8
72.1	13:44:21	72.1	72.1	67.1	13:36:47	67.1	67.1	67.1	13:51:30	67.1	67.1
71.1	13:44:22	71.1	71.1	64.1	13:36:48	64.1	64.1	62.0	13:51:31	62.0	62.0
68.4	13:44:23	68.4	68.4	61.6	13:36:49	61.6	61.6	59.2	13:51:32	59.2	59.2
65.3	13:44:24	65.3	65.3	59.7	13:36:50	59.7	59.7	56.2	13:51:33	56.2	56.2
62.1	13:44:25	62.1	62.1	62.1	13:36:51	62.1	62.1	61.8	13:51:34	61.8	61.8
59.0	13:44:26	59.0	59.0	64.9	13:36:52	64.9	64.9	51.6	13:51:35	51.6	51.6
56.3	13:44:27	56.3	56.3	65.7	13:36:53	65.7	65.7	51.4	13:51:36	51.4	51.4
54.0	13:44:28	54.0	54.0	63.5	13:36:54	63.5	63.5	52.5	13:51:37	52.5	52.5
52.3	13:44:29	52.3	52.3	62.9	13:36:55	62.9	62.9	60.4	13:51:38	60.4	60.4
53.0	13:44:30	53.0	53.0	57.1	13:36:56	57.1	57.1	57.0	13:51:39	57.0	57.0
52.2	13:44:31	52.2	52.2	54.2	13:36:57	54.2	54.2	60.5	13:51:40	60.5	60.5
50.8	13:44:32	50.8	50.8	52.2	13:36:58	52.2	52.2	63.3	13:51:41	63.3	63.3
50.6	13:44:33	50.6	50.6	51.3	13:36:59	51.3	51.3	51.3	13:51:42	51.3	51.3
50.8	13:44:34	50.8	50.8	52.4	13:37:00	52.4	52.4	64.6	13:51:43	64.6	64.6
50.4	13:44:35	50.4	50.4	54.8	13:37:01	54.8	54.8	64.5	13:51:44	64.5	64.5
49.6	13:44:36	49.6	49.6	59.2	13:37:02	59.2	59.2	62.2	13:51:45	62.2	62.2
49.0	13:44:37	49.0	49.0	66.2	13:37:03	66.2	66.2	59.0	13:51:46	59.0	59.0
49.3	13:44:38	49.3	49.3	70.0	13:37:04	70.0	70.0	49.3	13:51:47	49.3	49.3
49.9	13:44:39	49.9	49.9	67.4	13:37:05	67.4	67.4	53.4	13:51:48	53.4	53.4
50.0	13:44:40	50.0	50.0	63.9	13:37:06	63.9	63.9	51.9	13:51:49	51.9	51.9
49.9	13:44:41	49.9	49.9	60.9	13:37:07	60.9	60.9	51.7	13:51:50	51.7	51.7
50.6	13:44:42	50.6	50.6	57.5	13:37:08	57.5	57.5	53.0	13:51:51	53.0	53.0
49.7	13:44:43	49.7	49.7	55.2	13:37:09	55.2	55.2	55.6	13:51:52	55.6	55.6
48.4	13:44:44	48.4	48.4	53.0	13:37:10	53.0	53.0	58.3	13:51:53	58.3	58.3
47.0	13:44:45	47.0	47.0	50.8	13:37:11	50.8	50.8	61.0	13:51:54	61.0	61.0
47.1	13:44:46	47.1	47.1	49.6	13:37:12	49.6	49.6	49.6	13:51:55	49.6	49.6
46.5	13:44:47	46.5	46.5	51.0	13:37:13	51.0	51.0	62.2	13:51:56	62.2	62.2
45.2	13:44:48	45.2	45.2	52.8	13:37:14	52.8	52.8	61.6	13:51:57	61.6	61.6
44.5	13:44:49										

Site 1 - Near SE Corner of Project Site				Site 2 - Near NW Corner of Project Site				Site 3 - SW of Project Site, Front Yard at 316 Whipporwill Dr			
SPL	Time	Leq (1 hour Avg.)	Ldn CNEL	SPL	Time	Leq (1 hour Avg.)	Ldn CNEL	SPL	Time	Leq (1 hour Avg.)	Ldn CNEL
72.0	13:45:54		72.0	76.3	13:38:20		76.3	64.6	13:53:03		64.6
74.5	13:45:55		74.5	74.1	13:38:21		74.1	63.6	13:53:04		63.6
72.1	13:45:56		72.1	72.1	13:38:22		72.1	61.3	13:53:05		61.3
68.7	13:45:57		68.7	68.2	13:38:23		68.2	59.2	13:53:06		59.2
65.0	13:45:58		65.0	65.2	13:38:24		65.2	58.1	13:53:07		58.1
61.5	13:45:59		61.5	62.3	13:38:25		62.3	57.6	13:53:08		57.6
58.1	13:46:00		58.1	58.3	13:38:26		58.3	56.3	13:53:09		56.3
54.8	13:46:01		54.8	54.8	13:38:27		54.8	53.9	13:53:10		53.9
53.4	13:46:02		53.4	53.4	13:38:28		53.4	52.2	13:53:11		52.2
51.5	13:46:03		51.5	51.5	13:38:29		51.5	50.3	13:53:12		50.3
49.7	13:46:04		49.7	49.7	13:38:30		49.7	47.9	13:53:13		47.9
47.8	13:46:05		47.8	47.8	13:38:31		47.8	45.2	13:53:14		45.2
46.9	13:46:06		46.9	46.9	13:38:32		46.9	43.6	13:53:15		43.6
46.4	13:46:07		46.4	46.4	13:38:33		46.4	42.0	13:53:16		42.0
46.5	13:46:08		46.5	46.5	13:38:34		46.5	40.4	13:53:17		40.4
46.1	13:46:09		46.1	46.1	13:38:35		46.1	38.8	13:53:18		38.8
48.2	13:46:10		48.2	48.2	13:38:36		48.2	37.2	13:53:19		37.2
46.9	13:46:11		46.9	46.9	13:38:37		46.9	35.6	13:53:20		35.6
49.5	13:46:12		49.5	49.5	13:38:38		49.5	34.0	13:53:21		34.0
46.7	13:46:13		46.7	46.7	13:38:39		46.7	32.4	13:53:22		32.4
49.1	13:46:14		49.1	49.1	13:38:40		49.1	30.8	13:53:23		30.8
48.6	13:46:15		48.6	48.6	13:38:41		48.6	29.2	13:53:24		29.2
47.6	13:46:16		47.6	47.6	13:38:42		47.6	27.6	13:53:25		27.6
47.5	13:46:17		47.5	47.5	13:38:43		47.5	26.0	13:53:26		26.0
47.0	13:46:18		47.0	47.0	13:38:44		47.0	24.4	13:53:27		24.4
47.6	13:46:19		47.6	47.6	13:38:45		47.6	22.8	13:53:28		22.8
50.5	13:46:20		50.5	50.5	13:38:46		50.5	21.2	13:53:29		21.2
55.8	13:46:21		55.8	55.8	13:38:47		55.8	19.6	13:53:30		19.6
62.1	13:46:22		62.1	62.1	13:38:48		62.1	18.0	13:53:31		18.0
69.1	13:46:23		69.1	69.1	13:38:49		69.1	16.4	13:53:32		16.4
71.5	13:46:24		71.5	71.5	13:38:50		71.5	14.8	13:53:33		14.8
68.3	13:46:25		68.3	68.3	13:38:51		68.3	13.2	13:53:34		13.2
67.4	13:46:26		67.4	67.4	13:38:52		67.4	11.6	13:53:35		11.6
76.3	13:46:27		76.3	76.3	13:38:53		76.3	10.0	13:53:36		10.0
77.9	13:46:28		77.9	77.9	13:38:54		77.9	8.4	13:53:37		8.4
74.4	13:46:29		74.4	74.4	13:38:55		74.4	6.8	13:53:38		6.8
70.7	13:46:30		70.7	70.7	13:38:56		70.7	5.2	13:53:39		5.2
68.0	13:46:31		68.0	68.0	13:38:57		68.0	3.6	13:53:40		3.6
68.4	13:46:32		68.4	68.4	13:38:58		68.4	2.0	13:53:41		2.0
70.3	13:46:33		70.3	70.3	13:38:59		70.3	0.4	13:53:42		0.4
69.2	13:46:34		69.2	69.2	13:39:00		69.2	-1.2	13:53:43		-1.2
66.6	13:46:35		66.6	66.6	13:39:01		66.6	-2.8	13:53:44		-2.8
64.3	13:46:36		64.3	64.3	13:39:02		64.3	-4.4	13:53:45		-4.4
62.8	13:46:37		62.8	62.8	13:39:03		62.8	-6.0	13:53:46		-6.0
61.1	13:46:38		61.1	61.1	13:39:04		61.1	-7.6	13:53:47		-7.6
60.6	13:46:39		60.6	60.6	13:39:05		60.6	-9.2	13:53:48		-9.2
61.3	13:46:40		61.3	61.3	13:39:06		61.3	-10.8	13:53:49		-10.8
58.6	13:46:41		58.6	58.6	13:39:07		58.6	-12.4	13:53:50		-12.4
54.8	13:46:42		54.8	54.8	13:39:08		54.8	-14.0	13:53:51		-14.0
51.4	13:46:43		51.4	51.4	13:39:09		51.4	-15.6	13:53:52		-15.6
48.6	13:46:44		48.6	48.6	13:39:10		48.6	-17.2	13:53:53		-17.2
46.7	13:46:45		46.7	46.7	13:39:11		46.7	-18.8	13:53:54		-18.8
46.1	13:46:46		46.1	46.1	13:39:12		46.1	-20.4	13:53:55		-20.4
46.4	13:46:47		46.4	46.4	13:39:13		46.4	-22.0	13:53:56		-22.0
47.0	13:46:48		47.0	47.0	13:39:14		47.0	-23.6	13:53:57		-23.6
46.9	13:46:49		46.9	46.9	13:39:15		46.9	-25.2	13:53:58		-25.2
45.8	13:46:50		45.8	45.8	13:39:16		45.8	-26.8	13:53:59		-26.8
48.3	13:46:51		48.3	48.3	13:39:17		48.3	-28.4	13:54:00		-28.4
46.8	13:46:52		46.8	46.8	13:39:18		46.8	-30.0	13:54:01		-30.0
45.3	13:46:53		45.3	45.3	13:39:19		45.3	-31.6	13:54:02		-31.6
44.6	13:46:54		44.6	44.6	13:39:20		44.6	-33.2	13:54:03		-33.2
44.7	13:46:55		44.7	44.7	13:39:21		44.7	-34.8	13:54:04		-34.8
47.0	13:46:56		47.0	47.0	13:39:22		47.0	-36.4	13:54:05		-36.4
46.0	13:46:57		46.0	46.0	13:39:23		46.0	-38.0	13:54:06		-38.0
45.2	13:46:58		45.2	45.2	13:39:24		45.2	-39.6	13:54:07		-39.6
44.6	13:46:59		44.6	44.6	13:39:25		44.6	-41.2	13:54:08		-41.2
44.7	13:47:00		44.7	44.7	13:39:26		44.7	-42.8	13:54:09		-42.8
45.5	13:47:01		45.5	45.5	13:39:27		45.5	-44.4	13:54:10		-44.4
47.9	13:47:02		47.9	47.9	13:39:28		47.9	-46.0	13:54:11		-46.0
50.3	13:47:03	64.4	50.3	50.3	13:39:29	68.5	50.3	-47.6	13:54:12	60.7	-47.6
53.4	13:47:04	64.4	53.4	53.4	13:39:30	68.5	53.4	-49.2	13:54:13	60.7	-49.2
58.1	13:47:05	64.4	58.1	58.1	13:39:31	68.5	58.1	-50.8	13:54:14	60.7	-50.8
65.8	13:47:06	64.4	65.8	65.8	13:39:32	68.5	65.8	-52.4	13:54:15	60.7	-52.4
71.0	13:47:07	64.4	71.0	71.0	13:39:33	68.5	71.0	-54.0	13:54:16	60.7	-54.0
69.9	13:47:08	64.4	69.9	69.9	13:39:34	68.5	69.9	-55.6	13:54:17	60.7	-55.6
67.5	13:47:09	64.4	67.5	67.5	13:39:35	68.5	67.5	-57.2	13:54:18	60.7	-57.2
65.3	13:47:10	64.3	65.3	65.3	13:39:36	68.5	65.3	-58.8	13:54:19	60.7	-58.8
66.5	13:47:11	64.3	66.5	66.5	13:39:37	68.5	66.5	-60.4	13:54:20	60.7	-60.4
73.3	13:47:12	64.3	73.3	73.3	13:39:38	68.5	73.3	-62.0	13:54:21	60.7	-62.0
74.4	13:47:13	64.3	74.4	74.4	13:39:39	68.5	74.4	-63.6	13:54:22	60.7	-63.6
71.2	13:47:14	64.3	71.2	71.2	13:39:40	68.5	71.2	-65.2	13:54:23	60.7	-65.2
68.7	13:47:15	64.3	68.7	68.7	13:39:41	68.5	68.7	-66.8	13:54:24	60.7	-66.8
64.7	13:47:16	64.3	64.7	64.7	13:39:42	68.5	64.7	-68.4	13:54:25	60.7	-68.4
61.6	13:47:17	64.3	61.6	61.6	13:39:43	68.5	61.6	-70.0	13:54:26	60.7	-70.0
58.9	13:47:18	64.3	58.9	58.9	13:39:44	68.5	58.9	-71.6	13:54:27	60.7	-71.6
56.1	13:47:19	64.3	56.1	56.1	13:39:45	68.5	56.1	-73.2	13:54:28	60.7	-73.2
53.7	13:47:20	64.3	53.7	53.7	13:39:46	68.5	53.7	-74.8	13:54:29	60.7	-74.8
51.8	13:47:21	64.3	51.8	51.8	13:39:47	68.5	51.8	-76.4	13:54:30	60.7	-76.4
51.1	13:47:22	64.3	51.1	51.1	13:39:48	68.5	51.1	-78.0	13:54:31	60.7	-78.0
50.0	13:47:23	64.3	50.0	50.0	13:39:49	68.5	50.0	-79.6	13:54:32	60.7	-79.6
48.6	13:47:24	64.3	48.6	48.6	13:39:50	68.5	48.6	-81.2	13:54:33	60.7	-81.2
47.8	13:47:25	64.3	47.8	47.8	13:39:51	68.5	47.8	-82.8	13:54:34	60.7	-82.8
47.5	13:47:26	64.3	47.5	47.5	13:39:52	68.5	47.5	-84.4	13:54:35	60.7	-84.4
47.1	13:47:27	64.3	47.1	47.1	13:39:53	68.5	47.1	-86.0	13:54:36	60.7	-86.0
47.3	13:47:28	64.3	47.3	47.3	13:39:54	68.5	47.3	-87.6	13:54:37	60.7	-87.6
47.3	13:47:29	64.3	47.3	47.3	13:39:55	68.5	47.3	-89.2	13:54:38	60.7	-89.2
47.2	13:47:30	64.3	47.2	47.2	13:39:56	68.5	47.2	-90.8	13:54:39	60.7	-90.8
48.5	13:47:31	64.3	48.5	48.5	13:39:57	68.5	48.5	-92.4	13:54:40	60.7	-92.4
48.5	13:47:32	64.3	48.5	48.5	13:39:58	68.5	48.5	-94.0	13:54:41	60.7	-94.0
48.1	13:47:33	64.4	48.1	48.1	13:39:59	68.5	48.1	-95.6	13:54:42	60.7	-95.6
47.8	13:47:34	64.4	47.8	47.8	13:40:00	68.5	47.8	-97.2	13:54:43	60.7	-97.2
47.6	13:47:35	64.4	47.6	47.6	13:40:01	68.5	47.6	-98.8	13:54:44	60.7	-98.8
47.4	13:47:36	64.4	47.4	47.4	13:40:02	68.5	47.4	-100.4	13:54:45	60.7	-100.4
51.9	13:47:37	64.4	51.9	51.9	13:40:03	68.5	51.9	-102.0	13:54:46	60.7	-102.0
58.3	13:47:38	64.4	58.3	58.3	13:40:04	68.5	58.3	-103.6	13:54:47	60.7	-103.6
65.3	13:47:39	64.4	65.3	65.3	13:40:05	68.5	65.				

APPENDIX C

Proposed Single-Family Homes Exterior to Interior Attenuation Calculations

Interior Noise Calculations With 26 STC Windows

Project Name: **Highgrove TPM 37859**

Plan: **1**

Floor: **2**

Room: **Bedroom 2**

Room Absorption

Type of Surface	Area (Sq ft)	Sound Absorption Coefficient, Hz				Sound Absorption (Sabins)							
		125	250	500	1000	2000	4000	125	250	500	1000	2000	4000
Floor - Carpet*	122	0.1	0.4	0.62	0.7	0.63	0.88	12.21	48.84	75.702	85.47	76.923	107.45
Floor - Linoleum	0	0.02	0.03	0.03	0.03	0.02	0.02	0	0	0	0	0	0
Ceiling - Gypsum Board	122	0.29	0.1	0.05	0.04	0.07	0.09	35.409	12.21	6.105	4.884	8.547	10.989
Wall - Gypsum board	319	0.29	0.1	0.05	0.04	0.07	0.09	92.525	31.905	15.953	12.762	22.334	28.715
Total	563							140.14	92.955	97.76	103.12	107.8	147.15

$10 \cdot \log(S/A)$ S=Exterior wall area, A= Sound Absorption
 Sound Source Adjustment Factor -6.00 -6.00 -6.00 -6.00 -6.00
 Correction Factor for A-Weighted Sound Levels -16.10 -8.60 -3.20 0.00 1.20 1.00
 A-Weighted Sound Absorption Level -23.42 -14.13 -8.95 -5.98 -4.98 -6.53
 dBA Noise Absorption Level **-0.2**

Exterior-Interior Transmission Calculations

Type of Surface	Area (Sq ft)	STC Rating	Fractional Area (Area/10*(STC/10))
Stucco Wall	74	46	0.0018
Window	30	26	0.0754
Door	0	26	0
Total	104		0.0007

46 STC = Standard stucco wall construction
 26 STC = Standard dual pane windows
 C

Transmission Loss **31.3**

Exterior-Interior Noise Reduction

(Transmission Loss - Sound Absorption Level)
31 dBA

*Carpet analyzed consisted of 3/8" Loop Pile with Pad

Sources:

Fundamentals of Acoustics 4th Edition , Lawrence E. Kinsler, 2000.
Noise Control in Buildings , Cyril M. Harris, 1994.

Interior Noise Calculations With 26 STC Windows

Project Name: [Highgrove TPM 37859](#)

Plan: [1](#)

Floor: [2](#)

Room: [Bedroom 3](#)

Room Absorption

Type of Surface	Area (Sq ft)	Sound Absorption Coefficient, Hz				Sound Absorption (Sabins)							
		125	250	500	1000	2000	4000	125	250	500	1000	2000	4000
Floor - Carpet*	125	0.1	0.4	0.62	0.7	0.63	0.88	12.543	50.172	77.767	87.801	79.021	110.38
Floor - Linoleum	0	0.02	0.03	0.03	0.03	0.02	0	0	0	0	0	0	0
Ceiling - Gypsum Board	125	0.29	0.1	0.05	0.04	0.07	0.09	36.375	12.543	6.2715	5.0172	8.7801	11.289
Wall - Gypsum board	311	0.29	0.1	0.05	0.04	0.07	0.09	90.205	31.105	15.553	12.442	21.774	27.995
Total	562							139.12	93.82	99.591	105.26	109.57	149.66

$$10 \cdot \log(S/A) = \text{Exterior wall area, A} = \text{Sound Absorption}$$

Sound Source Adjustment Factor

Correction Factor for A-Weighted Sound Levels

A-Weighted Sound Absorption Level

dBA Noise Absorption Level

2.7

Exterior-Interior Transmission Calculations

Type of Surface	Area (Sq ft)	STC Rating	Fractional Area (Area/10*(STC/10))	
Stucco Wall	165	46	0.0041	46 STC = Standard stucco wall construction
Window	38	26	0.0955	2 - 3'x5' window & 1 - 2' x 4' Window
Door	0	26	0	
Total	203		0.0005	26 STC = Standard dual pane windows
Transmission Loss			33.1	

Exterior-Interior Noise Reduction

(Transmission Loss - Sound Absorption Level)

30 dBA

*Carpet analyzed consisted of 3/8" Loop Pile with Pad

Sources:

Fundamentals of Acoustics 4th Edition, Lawrence E. Kinsler, 2000.
Noise Control in Buildings, Cyril M. Harris, 1994.

APPENDIX D

RCNM Model Construction Noise Calculation Printouts

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 5/5/2021
 Case Description: Highgrove Residential/Commercial - Site Preparation

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		Night
		Daytime	Evening	
Nearest Home to North	Residential	67.3	67.3	60.2

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Dozer	No	40		81.7	320	0
Dozer	No	40		81.7	320	0
Dozer	No	40		81.7	320	0
Tractor	No	40	84		320	0
Front End Loader	No	40		79.1	320	0
Backhoe	No	40		77.6	320	0
Tractor	No	40	84		320	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)			
	*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq
Dozer	65.5	61.6	N/A	N/A	N/A	N/A
Dozer	65.5	61.6	N/A	N/A	N/A	N/A
Dozer	65.5	61.6	N/A	N/A	N/A	N/A
Tractor	67.9	63.9	N/A	N/A	N/A	N/A
Front End Loader	63.0	59.0	N/A	N/A	N/A	N/A
Backhoe	61.4	57.5	N/A	N/A	N/A	N/A
Tractor	67.9	63.9	N/A	N/A	N/A	N/A
Total	68	70	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 5/5/2021
 Case Description: Highgrove Residential/Commercial - Site Preparation

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Nearest Home to East	Residential	64.8	64.8	57.9

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Dozer	No	40		81.7	315	0
Dozer	No	40		81.7	315	0
Dozer	No	40		81.7	315	0
Tractor	No	40	84		315	0
Front End Loader	No	40		79.1	315	0
Backhoe	No	40		77.6	315	0
Tractor	No	40	84		315	0

Equipment	Calculated (dBA)		Results			
	*Lmax	Leq	Day		Evening	
			Lmax	Leq	Lmax	Leq
Dozer	65.7	61.7	N/A	N/A	N/A	N/A
Dozer	65.7	61.7	N/A	N/A	N/A	N/A
Dozer	65.7	61.7	N/A	N/A	N/A	N/A
Tractor	68.0	64.0	N/A	N/A	N/A	N/A
Front End Loader	63.1	59.1	N/A	N/A	N/A	N/A
Backhoe	61.6	57.6	N/A	N/A	N/A	N/A
Tractor	68.0	64.0	N/A	N/A	N/A	N/A
Total	68	70	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 5/5/2021
 Case Description: Highgrove Residential/Commercial - Site Preparation

---- Receptor #3 ----

Description	Baselines (dBA)		
	Land Use	Daytime	Evening
Nearest Home to West	Residential	64.8	64.8

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Dozer	No	40		81.7	350	0
Dozer	No	40		81.7	350	0
Dozer	No	40		81.7	350	0
Tractor	No	40	84		350	0
Front End Loader	No	40		79.1	350	0
Backhoe	No	40		77.6	350	0
Tractor	No	40	84		350	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)			
	*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq
Dozer	64.8	60.8	N/A	N/A	N/A	N/A
Dozer	64.8	60.8	N/A	N/A	N/A	N/A
Dozer	64.8	60.8	N/A	N/A	N/A	N/A
Tractor	67.1	63.1	N/A	N/A	N/A	N/A
Front End Loader	62.2	58.2	N/A	N/A	N/A	N/A
Backhoe	60.7	56.7	N/A	N/A	N/A	N/A
Tractor	67.1	63.1	N/A	N/A	N/A	N/A
Total	67	70	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 5/5/2021
 Case Description: Highgrove Residential/Commercial - Grading

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Nearest Home to North	Residential	67.3	67.3	60.2

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Excavator	No	40		80.7	320	0
Grader	No	40	85		320	0
Dozer	No	40		81.7	320	0
Tractor	No	40	84		320	0
Front End Loader	No	40		79.1	320	0
Backhoe	No	40		77.6	320	0

Equipment	Calculated (dBA)		Results			
	*Lmax	Leq	Noise Limits (dBA)			
			Day Lmax	Day Leq	Evening Lmax	Evening Leq
Excavator	64.6	60.6	N/A	N/A	N/A	N/A
Grader	68.9	64.9	N/A	N/A	N/A	N/A
Dozer	65.5	61.6	N/A	N/A	N/A	N/A
Tractor	67.9	63.9	N/A	N/A	N/A	N/A
Front End Loader	63.0	59.0	N/A	N/A	N/A	N/A
Backhoe	61.4	57.5	N/A	N/A	N/A	N/A
Total	69	70	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 5/5/2021
 Case Description: Highgrove Residential/Commercial - Grading

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		Night
		Daytime	Evening	
Nearest Home to East	Residential	64.8	64.8	57.9

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Excavator	No	40		80.7	315	0
Grader	No	40	85		315	0
Dozer	No	40		81.7	315	0
Tractor	No	40	84		315	0
Front End Loader	No	40		79.1	315	0
Backhoe	No	40		77.6	315	0

Equipment	Calculated (dBA)		Results Noise Limits (dBA)			
	*Lmax	Leq	Day		Evening	
			Lmax	Leq	Lmax	Leq
Excavator	64.7	60.7	N/A	N/A	N/A	N/A
Grader	69.0	65.0	N/A	N/A	N/A	N/A
Dozer	65.7	61.7	N/A	N/A	N/A	N/A
Tractor	68.0	64.0	N/A	N/A	N/A	N/A
Front End Loader	63.1	59.1	N/A	N/A	N/A	N/A
Backhoe	61.6	57.6	N/A	N/A	N/A	N/A
Total	69	70	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 5/5/2021
 Case Description: Highgrove Residential/Commercial - Grading

---- Receptor #3 ----

Description	Land Use	Baselines (dBA)			Night
		Daytime	Evening		
Nearest Home to West	Residential	64.8	64.8		54.8

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Excavator	No	40.0		80.7	350	0
Grader	No	40.0	85		350	0
Dozer	No	40.0		81.7	350	0
Tractor	No	40	84		350	0
Front End Loader	No	40		79.1	350	0
Backhoe	No	40		77.6	350	0

Equipment	Calculated (dBA)		Results			
	*Lmax	Leq	Day		Evening	
			Lmax	Leq	Lmax	Leq
Excavator	63.8	59.8	N/A	N/A	N/A	N/A
Grader	68.1	64.1	N/A	N/A	N/A	N/A
Dozer	64.8	60.8	N/A	N/A	N/A	N/A
Tractor	67.1	63.1	N/A	N/A	N/A	N/A
Front End Loader	62.2	58.2	N/A	N/A	N/A	N/A
Backhoe	60.7	56.7	N/A	N/A	N/A	N/A
Total	68	69	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 5/5/2021
 Case Description: Highgrove Residential/Commercial - Building

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Nearest Home to North	Residential	67.3	67.3	60.2

Description	Impact Device	Usage(%)	Equipment Spec	Actual	Receptor Distance	Estimated Shielding
			Lmax (dBA)	Lmax (dBA)	(feet)	(dBA)
Crane	No	16		80.6	320	0
Gradall	No	40		83.4	320	0
Gradall	No	40		83.4	320	0
Gradall	No	40		83.4	320	0
Tractor	No	40	84		320	0
Front End Loader	No	40		79.1	320	0
Backhoe	No	40		77.6	320	0
Generator	No	50		80.6	320	0
Welder / Torch	No	40		74	320	0

Equipment	Calculated (dBA)		Results				
	*Lmax	Leq	Day		Noise Limits (dBA)		
			Lmax	Leq	Lmax	Leq	Evening
Crane	64.4	56.5	N/A	N/A	N/A	N/A	N/A
Gradall	67.3	63.3	N/A	N/A	N/A	N/A	N/A
Gradall	67.3	63.3	N/A	N/A	N/A	N/A	N/A
Gradall	67.3	63.3	N/A	N/A	N/A	N/A	N/A
Tractor	67.9	63.9	N/A	N/A	N/A	N/A	N/A
Front End Loader	63.0	59.0	N/A	N/A	N/A	N/A	N/A
Backhoe	61.4	57.5	N/A	N/A	N/A	N/A	N/A
Generator	64.5	61.5	N/A	N/A	N/A	N/A	N/A
Welder / Torch	57.9	53.9	N/A	N/A	N/A	N/A	N/A
Total	68	71	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 5/5/2021
 Case Description: Highgrove Residential/Commercial - Building

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Nearest Home to East	Residential	64.8	64.8	57.9

Description	Impact Device	Usage(%)	Equipment Spec	Actual	Receptor Distance	Estimated Shielding
			Lmax (dBA)	Lmax (dBA)	(feet)	(dBA)
Crane	No	16		80.6	320	0
Gradall	No	40		83.4	320	0
Gradall	No	40		83.4	320	0
Gradall	No	40		83.4	320	0
Tractor	No	40	84		320	0
Front End Loader	No	40		79.1	320	0
Backhoe	No	40		77.6	320	0
Generator	No	50		80.6	320	0
Welder / Torch	No	40		74	320	0

Equipment	Calculated (dBA)		Results				
	*Lmax	Leq	Day		Noise Limits (dBA)		
			Lmax	Leq	Lmax	Leq	Evening
Crane	64.4	56.5	N/A	N/A	N/A	N/A	N/A
Gradall	67.3	63.3	N/A	N/A	N/A	N/A	N/A
Gradall	67.3	63.3	N/A	N/A	N/A	N/A	N/A
Gradall	67.3	63.3	N/A	N/A	N/A	N/A	N/A
Tractor	67.9	63.9	N/A	N/A	N/A	N/A	N/A
Front End Loader	63.0	59.0	N/A	N/A	N/A	N/A	N/A
Backhoe	61.4	57.5	N/A	N/A	N/A	N/A	N/A
Generator	64.5	61.5	N/A	N/A	N/A	N/A	N/A
Welder / Torch	57.9	53.9	N/A	N/A	N/A	N/A	N/A
Total	68	71	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 5/5/2021
 Case Description: Highgrove Residential/Commercial - Building

---- Receptor #3 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Nearest Home to West	Residential	64.8	64.8	54.8

Description	Impact Device	Usage(%)	Equipment Spec	Actual	Receptor Distance	Estimated Shielding
			Lmax (dBA)	Lmax (dBA)	(feet)	(dBA)
Crane	No	16		80.6	350	0
Gradall	No	40		83.4	350	0
Gradall	No	40		83.4	350	0
Gradall	No	40		83.4	350	0
Tractor	No	40	84		350	0
Front End Loader	No	40		79.1	350	0
Backhoe	No	40		77.6	350	0
Generator	No	50		80.6	350	0
Welder / Torch	No	40		74	350	0

Equipment	Calculated (dBA)		Results				
	*Lmax	Leq	Day		Noise Limits (dBA)		
			Lmax	Leq	Evening		
Crane	63.6	55.7	N/A	N/A	N/A	N/A	N/A
Gradall	66.5	62.5	N/A	N/A	N/A	N/A	N/A
Gradall	66.5	62.5	N/A	N/A	N/A	N/A	N/A
Gradall	66.5	62.5	N/A	N/A	N/A	N/A	N/A
Tractor	67.1	63.1	N/A	N/A	N/A	N/A	N/A
Front End Loader	62.2	58.2	N/A	N/A	N/A	N/A	N/A
Backhoe	60.7	56.7	N/A	N/A	N/A	N/A	N/A
Generator	63.7	60.7	N/A	N/A	N/A	N/A	N/A
Welder / Torch	57.1	53.1	N/A	N/A	N/A	N/A	N/A
Total	67	70	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 5/5/2021
 Case Description: Highgrove Residential/Commercial - Paving

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Nearest Home to North	Residential	67.3	67.3	60.2

Description	Impact Device	Usage(%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	320	0
Paver	No	50		77.2	320	0
Paver	No	50		77.2	320	0
Paver	No	50		77.2	320	0
Roller	No	20		80	320	0
Roller	No	20		80	320	0

Equipment	Calculated (dBA)		Results			
	*Lmax	Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq
Paver	61.1	58.1	N/A	N/A	N/A	N/A
Paver	61.1	58.1	N/A	N/A	N/A	N/A
Paver	61.1	58.1	N/A	N/A	N/A	N/A
Paver	61.1	58.1	N/A	N/A	N/A	N/A
Roller	63.9	56.9	N/A	N/A	N/A	N/A
Roller	63.9	56.9	N/A	N/A	N/A	N/A
Total	64	66	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 5/5/2021
 Case Description: Highgrove Residential/Commercial - Paving

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		Night
		Daytime	Evening	
Nearest Home to East	Residential	64.8	64.8	57.9

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Paver	No	50		77.2	315	0
Paver	No	50		77.2	315	0
Paver	No	50		77.2	315	0
Paver	No	50		77.2	315	0
Roller	No	20		80	315	0
Roller	No	20		80	315	0

Equipment	Calculated (dBA)		Results			
	*Lmax	Leq	Day		Evening	
			Lmax	Leq	Lmax	Leq
Paver	61.2	58.2	N/A	N/A	N/A	N/A
Paver	61.2	58.2	N/A	N/A	N/A	N/A
Paver	61.2	58.2	N/A	N/A	N/A	N/A
Paver	61.2	58.2	N/A	N/A	N/A	N/A
Roller	64.0	57.0	N/A	N/A	N/A	N/A
Roller	64.0	57.0	N/A	N/A	N/A	N/A
Total	64	66	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 5/5/2021
 Case Description: Highgrove Residential/Commercial - Paving

---- Receptor #3 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Nearest Home to West	Residential	64.8	64.8	54.8

Description	Impact Device	Usage(%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	350	0
Paver	No	50		77.2	350	0
Paver	No	50		77.2	350	0
Paver	No	50		77.2	350	0
Roller	No	20		80	350	0
Roller	No	20		80	350	0

Equipment	Calculated (dBA)		Results			
	*Lmax	Leq	Day		Evening	
			Lmax	Leq	Lmax	Leq
Paver	60	57	N/A	N/A	N/A	N/A
Paver	60	57	N/A	N/A	N/A	N/A
Paver	60	57	N/A	N/A	N/A	N/A
Paver	60	57	N/A	N/A	N/A	N/A
Roller	63	56	N/A	N/A	N/A	N/A
Roller	63	56	N/A	N/A	N/A	N/A
Total	63	65	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 5/5/2021
 Case Description: Highgrove Residential/Commercial - Painting

---- Receptor #1 ----

		Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night			
Nearest Home to North	Residential	67.3	67.3	60.2			
					Equipment		
Description		Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)		No	40		77.7	320	0
					Results		
		Calculated (dBA)		Noise Limits (dBA)			
Equipment		*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq
Compressor (air)		61.5	57.6	N/A	N/A	N/A	N/A
	Total	62	58	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

		Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night			
Nearest Home to East	Residential	64.8	64.8	57.9			
					Equipment		
Description		Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)		No	40		77.7	315	0
					Results		
		Calculated (dBA)		Noise Limits (dBA)			
Equipment		*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq
Compressor (air)		61.7	57.7	N/A	N/A	N/A	N/A
	Total	62	58	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 5/5/2021

Case Description: Highgrove Residential/Commercial - Painting

---- Receptor #3 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Nearest Home to West	Residential	64.8	64.8	54.8

Description	Impact Device	Usage(%)	Equipment	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)			
Compressor (air)	No	40		77.7	350	0

Equipment	Calculated (dBA)	Results					
		Noise Limits (dBA)		Day			
		Evening		Lmax	Leq	Lmax	Leq
Compressor (air)	*Lmax 60.8	Leq 56.8		N/A	N/A	N/A	N/A
Total	61	57		N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

APPENDIX E

FHWA Model Offsite Traffic Noise Calculation Printouts

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING

**Project: Highgrove Residential/Commercial
Site Conditions: Soft**

Vehicle Type	Vehicle Mix 1 (Secondary, Collector)			Vehicle Mix 2 (Arterial, Major)			Vehicle Mix 3 (State Route 79)				
	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night	Daily	
Automobiles	73.60%	13.60%	10.22%	69.50%	12.90%	9.60%	92.00%	63.34%	12.98%	15.18%	91.50%
Medium Trucks	0.90%	0.04%	0.90%	1.44%	0.06%	1.50%	3.00%	3.14%	0.57%	1.59%	5.30%
Heavy Trucks	0.35%	0.04%	0.35%	2.40%	0.10%	2.50%	5.00%	1.75%	0.17%	1.28%	3.20%

Road Name: Michigan Avenue		Segment: North of Center Street			Segment: South of Center Street			Roadway Classification: Collector		
		Vehicle Speed: 25 MPH			Vehicle Speed: 25 MPH			Vehicle Mix: 1		
NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 54.67 ft)										
Noise Adjustments										
Vehicle Type	REME L Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)
Automobiles	59.44	-4.90	-1.20	52.7	50.5	49.2	43.2	51.6	52.26	70 dBA: 3
Medium Trucks	71.09	-22.13	-0.69	47.1	25.8	18.3	27.1	33.2	33.28	65 dBA: 7
Heavy Trucks	78.74	-26.09	-0.69	50.8	25.4	22.0	26.7	32.9	32.96	60 dBA: 16
Total:				55.5	50.6	49.2	43.4	51.7	52.4	55 dBA: 33

Road Name: Michigan Avenue		Segment: North of Center Street			Segment: South of Center Street			Roadway Classification: Collector		
		Vehicle Speed: 25 MPH			Vehicle Speed: 25 MPH			Vehicle Mix: 2		
NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 54.67 ft)										
Noise Adjustments										
Vehicle Type	REME L Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)
Automobiles	59.44	-9.15	-0.69	48.4	46.0	44.7	38.7	47.1	47.7	70 dBA: 2
Medium Trucks	71.09	-24.02	-0.69	45.2	26.0	18.2	27.4	33.6	33.6	65 dBA: 5
Heavy Trucks	78.74	-21.80	-0.69	55.1	38.1	30.3	39.5	45.6	45.7	60 dBA: 11
Total:				56.3	46.7	44.9	42.3	49.6	49.9	55 dBA: 24

Road Name: Mt. Vernon Avenue		Segment: North of Main Street			Segment: South of Main Street			Roadway Classification: Secondary		
		Vehicle Speed: 40 MPH			Vehicle Speed: 40 MPH			Vehicle Mix: 2		
NOISE PARAMETERS AT 65 FEET FROM CENTERLINE (Equiv. Lane Dist: 62.46 ft)										
Noise Adjustments										
Vehicle Type	REME L Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)
Automobiles	67.36	-1.76	-1.55	62.8	60.5	59.2	53.1	61.6	62.2	70 dBA: 20
Medium Trucks	76.31	-16.62	-1.55	56.9	37.7	29.9	39.2	45.3	45.3	65 dBA: 44
Heavy Trucks	81.16	-14.41	-1.55	64.0	47.0	39.2	48.4	54.6	54.6	60 dBA: 95
Total:				66.9	60.7	59.2	54.5	62.4	63.0	55 dBA: 204

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING

Project: Highgrove Residential/Commercial
Site Conditions: Soft

Road Name: Mt. Vernon Avenue		Segment: North of Project Driveway 1		Roadway Classification: Secondary							
Average Daily Traffic: 8090 Vehicles		Vehicle Speed: 45 MPH		Vehicle Mix: 2							
NOISE PARAMETERS AT 75 FEET FROM CENTERLINE (Equiv. Lane Dist: 72.81 ft)											
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels			Centerline Distance to Noise Contour (in feet)				
	REML Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		
Automobiles	69.34	-3.12	-2.55	-1.20	62.5	60.1	58.8	61.2	61.8	70 dBA: 22	24
Medium Trucks	77.62	-17.99	-2.55	-1.20	55.9	36.7	28.9	38.1	44.3	65 dBA: 47	51
Heavy Trucks	82.14	-15.77	-2.55	-1.20	62.6	45.6	37.9	47.1	53.2	60 dBA: 100	109
Total:				66.0	60.3	58.8	53.9	61.9	62.4	55 dBA: 216	235

Road Name: Mt. Vernon Avenue		Segment: North of Center Street		Roadway Classification: Secondary							
Average Daily Traffic: 8090 Vehicles		Vehicle Speed: 45 MPH		Vehicle Mix: 2							
NOISE PARAMETERS AT 145 FEET FROM CENTERLINE (Equiv. Lane Dist: 143.88 ft)											
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels			Centerline Distance to Noise Contour (in feet)				
	REML Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		
Automobiles	69.34	-3.12	-6.99	-1.20	58.0	55.7	54.4	48.3	56.7	70 dBA: 21	23
Medium Trucks	77.62	-17.99	-6.99	-1.20	51.4	32.2	24.5	33.7	39.8	65 dBA: 46	50
Heavy Trucks	82.14	-15.77	-6.99	-1.20	58.2	41.2	33.4	42.6	48.8	60 dBA: 98	107
Total:				61.6	55.8	54.4	49.5	57.5	58.0	55 dBA: 212	230

Road Name: Mt. Vernon Avenue		Segment: South of Center Street		Roadway Classification: Secondary							
Average Daily Traffic: 6240 Vehicles		Vehicle Speed: 45 MPH		Vehicle Mix: 2							
NOISE PARAMETERS AT 145 FEET FROM CENTERLINE (Equiv. Lane Dist: 143.88 ft)											
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels			Centerline Distance to Noise Contour (in feet)				
	REML Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		
Automobiles	69.34	-4.25	-6.99	-1.20	56.9	54.5	53.2	47.2	55.6	70 dBA: 18	19
Medium Trucks	77.62	-19.11	-6.99	-1.20	50.3	31.1	23.3	32.5	38.7	65 dBA: 38	42
Heavy Trucks	82.14	-16.90	-6.99	-1.20	57.1	40.1	32.3	41.5	47.6	60 dBA: 83	90
Total:				60.4	54.7	53.3	48.3	56.3	56.9	55 dBA: 178	194

Road Name: Main Street		Segment: West of Mt. Vernon Avenue		Roadway Classification: Secondary							
Average Daily Traffic: 1880 Vehicles		Vehicle Speed: 40 MPH		Vehicle Mix: 2							
NOISE PARAMETERS AT 65 FEET FROM CENTERLINE (Equiv. Lane Dist: 62.46 ft)											
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels			Centerline Distance to Noise Contour (in feet)				
	REML Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		
Automobiles	67.36	-8.95	-1.55	-1.20	55.7	53.3	52.0	45.9	54.4	70 dBA: 7	7
Medium Trucks	76.31	-23.81	-1.55	-1.20	49.7	30.5	22.8	32.0	38.1	65 dBA: 15	16
Heavy Trucks	81.16	-21.59	-1.55	-1.20	56.8	39.8	32.0	41.2	47.4	60 dBA: 31	34
Total:				59.7	53.5	52.0	47.3	55.3	55.8	55 dBA: 68	73

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING

**Project: Highgrove Residential/Commercial
Site Conditions: Soft**

Road Name:	Center Street	Segment:	West of Michigan Avenue					Roadway Classification: Secondary		
Average Daily Traffic:	5220 Vehicles	Vehicle Speed: 40 MPH	Vehicle Mix: 2	(Equiv. Lane Dist: 51.97 ft)				Centerline Distance to		
	NOISE PARAMETERS AT 55 FEET FROM CENTERLINE							Noise Contour (in feet)		
	Noise Adjustments			Unmitigated Noise Levels						
Vehicle Type	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	
Automobiles	67.36	-4.51	-1.20	61.3	58.9	57.6	51.6	60.0	60.6	70 dBA: 14
Medium Trucks	76.31	-19.38	-0.36	55.4	36.2	28.4	37.6	43.8	43.8	65 dBA: 29
Heavy Trucks	81.16	-17.16	-0.36	62.4	45.5	37.7	46.9	53.0	53.1	60 dBA: 63
	Total:			65.4	59.1	57.7	53.0	60.9	61.4	55 dBA: 136

Road Name:	Center Street	Segment:	West of Mt. Vernon Avenue					Roadway Classification: Secondary		
Average Daily Traffic:	3060 Vehicles	Vehicle Speed: 40 MPH	Vehicle Mix: 2	(Equiv. Lane Dist: 67.65 ft)				Centerline Distance to		
	NOISE PARAMETERS AT 70 FEET FROM CENTERLINE							Noise Contour (in feet)		
	Noise Adjustments			Unmitigated Noise Levels						
Vehicle Type	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	
Automobiles	67.36	-6.83	-2.07	57.3	54.9	53.6	47.5	56.0	56.6	70 dBA: 9
Medium Trucks	76.31	-21.70	-2.07	51.3	32.1	24.4	33.6	39.7	39.7	65 dBA: 20
Heavy Trucks	81.16	-19.48	-2.07	58.4	41.4	33.6	42.8	49.0	49.0	60 dBA: 43
	Total:			61.3	55.1	53.6	48.9	56.8	57.4	55 dBA: 93

Road Name:	Center Street	Segment:	East of Project Driveway 4					Roadway Classification: Collector		
Average Daily Traffic:	2240 Vehicles	Vehicle Speed: 40 MPH	Vehicle Mix: 1	(Equiv. Lane Dist: 64.72 ft)				Centerline Distance to		
	NOISE PARAMETERS AT 65 FEET FROM CENTERLINE							Noise Contour (in feet)		
	Noise Adjustments			Unmitigated Noise Levels						
Vehicle Type	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	
Automobiles	67.36	-7.94	-1.78	56.4	54.3	53.0	47.0	55.4	56.0	70 dBA: 7
Medium Trucks	76.31	-25.18	-1.78	48.2	26.9	19.4	28.2	34.3	34.4	65 dBA: 15
Heavy Trucks	81.16	-29.13	-1.78	49.0	23.7	20.3	24.9	31.1	31.2	60 dBA: 32
	Total:			57.7	54.3	53.0	47.1	55.5	56.1	55 dBA: 70

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING WITH PROJECT

Project: Highgrove Residential/Commercial
Site Conditions: Soft

Vehicle Type	Vehicle Mix 1 (Secondary, Collector)			Vehicle Mix 2 (Arterial, Major)			Vehicle Mix 3 (State Route 79)				
	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night	Daily	
Automobiles	73.60%	13.60%	10.22%	69.50%	12.90%	9.60%	92.00%	63.34%	12.98%	15.18%	91.50%
Medium Trucks	0.90%	0.04%	0.90%	1.44%	0.06%	1.50%	3.00%	3.14%	0.57%	1.59%	5.30%
Heavy Trucks	0.35%	0.04%	0.35%	2.40%	0.10%	2.50%	5.00%	1.75%	0.17%	1.28%	3.20%

Road Name: Michigan Avenue		Segment: North of Center Street		Roadway Classification: Collector								
Average Daily Traffic: 3040 Vehicles		Vehicle Speed: 25 MPH		Vehicle Mix: 1								
NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 54.67 ft)												
Noise Adjustments			Unmitigated Noise Levels									
Vehicle Type	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)	Ldn	CNEL
Automobiles	59.44	-4.57	-0.69	-1.20	53.0	50.9	49.5	43.5	52.0	52.6	70 dBA:	4
Medium Trucks	71.09	-21.81	-0.69	-1.20	47.4	26.1	18.6	27.4	33.6	33.6	65 dBA:	8
Heavy Trucks	78.74	-25.76	-0.69	-1.20	51.1	25.7	22.3	27.0	33.2	33.3	60 dBA:	16
Total:				55.8	50.9	49.6	43.7	52.1	52.7	55 dBA:	35	39

Road Name: Michigan Avenue		Segment: South of Center Street		Roadway Classification: Collector								
Average Daily Traffic: 1340 Vehicles		Vehicle Speed: 25 MPH		Vehicle Mix: 2								
NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 54.67 ft)												
Noise Adjustments			Unmitigated Noise Levels									
Vehicle Type	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)	Ldn	CNEL
Automobiles	59.44	-8.38	-0.69	-1.20	49.2	46.8	45.5	39.5	47.9	48.5	70 dBA:	3
Medium Trucks	71.09	-23.24	-0.69	-1.20	46.0	26.8	19.0	28.2	34.3	34.4	65 dBA:	6
Heavy Trucks	78.74	-21.02	-0.69	-1.20	55.8	38.8	31.1	40.3	46.4	46.5	60 dBA:	12
Total:				57.0	47.5	45.7	43.0	50.3	50.7	55 dBA:	27	29

Road Name: Mt. Vernon Avenue		Segment: North of Main Street		Roadway Classification: Secondary								
Average Daily Traffic: 10270 Vehicles		Vehicle Speed: 40 MPH		Vehicle Mix: 2								
NOISE PARAMETERS AT 65 FEET FROM CENTERLINE (Equiv. Lane Dist: 62.46 ft)												
Noise Adjustments			Unmitigated Noise Levels									
Vehicle Type	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)	Ldn	CNEL
Automobiles	67.36	-1.57	-1.55	-1.20	63.0	60.7	59.4	53.3	61.7	62.4	70 dBA:	21
Medium Trucks	76.31	-16.44	-1.55	-1.20	57.1	37.9	30.1	39.3	45.5	45.5	65 dBA:	45
Heavy Trucks	81.16	-14.22	-1.55	-1.20	64.2	47.2	39.4	48.6	54.8	54.8	60 dBA:	97
Total:				67.1	60.9	59.4	54.7	62.6	63.2	55 dBA:	210	227

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING WITH PROJECT

**Project: Highgrove Residential/Commercial
Site Conditions: Soft**

Road Name: Mt. Vernon Avenue		Segment: North of Project Driveway 1		Roadway Classification: Secondary						
Average Daily Traffic: 8630 Vehicles		Vehicle Speed: 45 MPH		Vehicle Mix: 2						
NOISE PARAMETERS AT 75 FEET FROM CENTERLINE (Equiv. Lane Dist: 72.81 ft)										
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels			Noise Contour (in feet)			
	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	
Automobiles	69.34	-2.84	-1.20	62.8	60.4	59.1	53.0	61.5	62.1	70 dBA: 23
Medium Trucks	77.62	-17.71	-1.20	56.2	37.0	29.2	38.4	44.5	44.6	65 dBA: 49
Heavy Trucks	82.14	-15.49	-1.20	62.9	45.9	38.1	47.3	53.5	53.5	60 dBA: 105
Total:				66.3	60.6	59.1	54.2	62.2	62.7	55 dBA: 226

Road Name: Mt. Vernon Avenue		Segment: North of Center Street		Roadway Classification: Secondary						
Average Daily Traffic: 9060 Vehicles		Vehicle Speed: 45 MPH		Vehicle Mix: 2						
NOISE PARAMETERS AT 145 FEET FROM CENTERLINE (Equiv. Lane Dist: 143.88 ft)										
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels			Noise Contour (in feet)			
	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	
Automobiles	69.34	-2.63	-1.20	58.5	56.2	54.9	48.8	57.2	57.9	70 dBA: 23
Medium Trucks	77.62	-17.50	-1.20	51.9	32.7	24.9	34.2	40.3	40.3	65 dBA: 49
Heavy Trucks	82.14	-15.28	-1.20	58.7	41.7	33.9	43.1	49.3	49.3	60 dBA: 106
Total:				62.1	56.3	54.9	50.0	58.0	58.5	55 dBA: 228

Road Name: Mt. Vernon Avenue		Segment: South of Center Street		Roadway Classification: Secondary						
Average Daily Traffic: 6670 Vehicles		Vehicle Speed: 45 MPH		Vehicle Mix: 2						
NOISE PARAMETERS AT 145 FEET FROM CENTERLINE (Equiv. Lane Dist: 143.88 ft)										
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels			Noise Contour (in feet)			
	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	
Automobiles	69.34	-3.96	-1.20	57.2	54.8	53.5	47.5	55.9	56.5	70 dBA: 19
Medium Trucks	77.62	-18.83	-1.20	50.6	31.4	23.6	32.8	39.0	39.0	65 dBA: 40
Heavy Trucks	82.14	-16.61	-1.20	57.3	40.4	32.6	41.8	47.9	48.0	60 dBA: 86
Total:				60.7	55.0	53.6	48.6	56.6	57.2	55 dBA: 186

Road Name: Main Street		Segment: West of Mt. Vernon Avenue		Roadway Classification: Secondary						
Average Daily Traffic: 1990 Vehicles		Vehicle Speed: 40 MPH		Vehicle Mix: 2						
NOISE PARAMETERS AT 65 FEET FROM CENTERLINE (Equiv. Lane Dist: 62.46 ft)										
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels			Noise Contour (in feet)			
	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	
Automobiles	67.36	-8.70	-1.55	55.9	53.5	52.2	46.2	54.6	55.3	70 dBA: 7
Medium Trucks	76.31	-23.57	-1.55	50.0	30.8	23.0	32.2	38.4	38.4	65 dBA: 15
Heavy Trucks	81.16	-21.35	-1.55	57.1	40.1	32.3	41.5	47.7	47.7	60 dBA: 33
Total:				60.0	53.7	52.3	47.6	55.5	56.0	55 dBA: 70

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING WITH PROJECT

**Project: Highgrove Residential/Commercial
Site Conditions: Soft**

Road Name:		Center Street		Segment:		West of Michigan Avenue		Roadway Classification: Secondary				
Average Daily Traffic: 5870 Vehicles		Vehicle Speed: 40 MPH		Vehicle Mix: 2		Vehicle Mix: 2		Roadway Classification: Secondary				
NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 51.97 ft)												
		Noise Adjustments			Unmitigated Noise Levels					Noise Contour (in feet)		
Vehicle Type	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)		
Automobiles	67.36	-4.00	-0.36	-1.20	61.8	59.4	58.1	52.1	60.5	61.1	70 dBA: 15	16
Medium Trucks	76.31	-18.87	-0.36	-1.20	55.9	36.7	28.9	38.1	44.3	44.3	65 dBA: 32	34
Heavy Trucks	81.16	-16.65	-0.36	-1.20	63.0	46.0	38.2	47.4	53.5	53.6	60 dBA: 68	74
Total:				65.9	59.6	58.2	53.5	61.4	61.9		55 dBA: 147	159

Road Name:		Center Street		Segment:		West of Mt. Vernon Avenue		Roadway Classification: Secondary				
Average Daily Traffic: 4140 Vehicles		Vehicle Speed: 40 MPH		Vehicle Mix: 2		Vehicle Mix: 2		Roadway Classification: Secondary				
NOISE PARAMETERS AT 70 FEET FROM CENTERLINE (Equiv. Lane Dist: 67.65 ft)												
		Noise Adjustments			Unmitigated Noise Levels					Noise Contour (in feet)		
Vehicle Type	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)		
Automobiles	67.36	-5.52	-2.07	-1.20	58.6	56.2	54.9	48.8	57.3	57.9	70 dBA: 11	12
Medium Trucks	76.31	-20.38	-2.07	-1.20	52.7	33.4	25.7	34.9	41.0	41.1	65 dBA: 25	27
Heavy Trucks	81.16	-18.17	-2.07	-1.20	59.7	42.7	34.9	44.2	50.3	50.3	60 dBA: 53	57
Total:				62.7	56.4	55.0	50.2	58.2	58.7		55 dBA: 114	123

Road Name:		Center Street		Segment:		East of Project Driveway 4		Roadway Classification: Collector				
Average Daily Traffic: 2350 Vehicles		Vehicle Speed: 40 MPH		Vehicle Mix: 1		Vehicle Mix: 1		Roadway Classification: Collector				
NOISE PARAMETERS AT 65 FEET FROM CENTERLINE (Equiv. Lane Dist: 64.72 ft)												
		Noise Adjustments			Unmitigated Noise Levels					Noise Contour (in feet)		
Vehicle Type	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)		
Automobiles	67.36	-7.73	-1.78	-1.20	56.6	54.5	53.2	47.2	55.6	56.2	70 dBA: 7	8
Medium Trucks	76.31	-24.97	-1.78	-1.20	48.4	27.1	19.6	28.4	34.5	34.6	65 dBA: 16	17
Heavy Trucks	81.16	-28.92	-1.78	-1.20	49.3	23.9	20.5	25.2	31.3	31.4	60 dBA: 33	37
Total:				57.9	54.5	53.2	47.3	55.7	56.3		55 dBA: 72	79

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING PLUS AMBIENT GROWTH YEAR 2022 WITHOUT PROJECT

**Project: Highgrove Residential/Commercial
Site Conditions: Soft**

Vehicle Type	Vehicle Mix 1 (Secondary, Collector)			Vehicle Mix 2 (Arterial, Major)			Vehicle Mix 3 (State Route 79)				
	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night	Daily	
Automobiles	73.60%	13.60%	10.22%	69.50%	12.90%	9.60%	92.00%	63.34%	12.98%	15.18%	91.50%
Medium Trucks	0.90%	0.04%	0.90%	1.44%	0.06%	1.50%	3.00%	3.14%	0.57%	1.59%	5.30%
Heavy Trucks	0.35%	0.04%	0.35%	2.40%	0.10%	2.50%	5.00%	1.75%	0.17%	1.28%	3.20%

Road Name: Michigan Avenue		Segment: North of Center Street			Roadway Classification: Collector								
		Average Daily Traffic: 2910 Vehicles			Vehicle Speed: 25 MPH								
		NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 54.67 ft)											
		Noise Adjustments			Unmitigated Noise Levels								
Vehicle Type	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)	Ldn	CNEL	
Automobiles	59.44	-4.76	-0.69	-1.20	52.8	50.7	49.4	43.3	51.8	52.4	70 dBA:	3	4
Medium Trucks	71.09	-22.00	-0.69	-1.20	47.2	26.0	18.5	27.2	33.4	33.4	65 dBA:	7	8
Heavy Trucks	78.74	-25.95	-0.69	-1.20	50.9	25.6	22.2	26.8	33.0	33.1	60 dBA:	16	17
Total:					55.6	50.7	49.4	43.5	51.9	52.5	55 dBA:	34	37

Road Name: Michigan Avenue		Segment: South of Center Street			Roadway Classification: Collector								
		Average Daily Traffic: 1150 Vehicles			Vehicle Speed: 25 MPH								
		NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 54.67 ft)											
		Noise Adjustments			Unmitigated Noise Levels								
Vehicle Type	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)	Ldn	CNEL	
Automobiles	59.44	-9.04	-0.69	-1.20	48.5	46.1	44.8	38.8	47.2	47.9	70 dBA:	2	3
Medium Trucks	71.09	-23.91	-0.69	-1.20	45.3	26.1	18.3	27.5	33.7	33.7	65 dBA:	5	6
Heavy Trucks	78.74	-21.69	-0.69	-1.20	55.2	38.2	30.4	39.6	45.8	45.8	60 dBA:	11	12
Total:					56.4	46.8	45.0	42.4	49.7	50.1	55 dBA:	24	26

Road Name: Mt. Vernon Avenue		Segment: North of Main Street			Roadway Classification: Secondary								
		Average Daily Traffic: 10230 Vehicles			Vehicle Speed: 40 MPH								
		NOISE PARAMETERS AT 65 FEET FROM CENTERLINE (Equiv. Lane Dist: 62.46 ft)											
		Noise Adjustments			Unmitigated Noise Levels								
Vehicle Type	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)	Ldn	CNEL	
Automobiles	67.36	-1.59	-1.55	-1.20	63.0	60.6	59.4	53.3	61.7	62.4	70 dBA:	21	23
Medium Trucks	76.31	-16.46	-1.55	-1.20	57.1	37.9	30.1	39.3	45.5	45.5	65 dBA:	45	49
Heavy Trucks	81.16	-14.24	-1.55	-1.20	64.2	47.2	39.4	48.6	54.8	54.8	60 dBA:	97	105
Total:					67.1	60.9	59.4	54.7	62.6	63.1	55 dBA:	209	227

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING PLUS AMBIENT GROWTH YEAR 2022 WITHOUT PROJECT

**Project: Highgrove Residential/Commercial
Site Conditions: Soft**

Road Name: Mt. Vernon Avenue		Segment: North of Project Driveway 1		Roadway Classification: Secondary					
Average Daily Traffic: 8390 Vehicles		Vehicle Speed: 45 MPH		Vehicle Mix: 2					
NOISE PARAMETERS AT 75 FEET FROM CENTERLINE (Equiv. Lane Dist: 72.81 ft)									
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels					
	REML Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve. Leq Night	Ldn CNEL		
Automobiles	69.34	-2.96	-1.20	62.6	60.3	59.0	61.3	62.0	70 dBA: 22
Medium Trucks	77.62	-17.83	-2.55	56.0	36.8	29.1	38.3	44.4	65 dBA: 48
Heavy Trucks	82.14	-15.61	-2.55	62.8	45.8	38.0	47.2	53.4	60 dBA: 112
Total:				66.2	60.4	59.0	54.1	62.6	55 dBA: 241

Road Name: Mt. Vernon Avenue		Segment: North of Center Street		Roadway Classification: Secondary					
Average Daily Traffic: 8230 Vehicles		Vehicle Speed: 45 MPH		Vehicle Mix: 2					
NOISE PARAMETERS AT 145 FEET FROM CENTERLINE (Equiv. Lane Dist: 143.88 ft)									
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels					
	REML Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve. Leq Night	Ldn CNEL		
Automobiles	69.34	-3.05	-1.20	58.1	55.7	54.4	48.4	56.8	70 dBA: 21
Medium Trucks	77.62	-17.91	-6.99	51.5	32.3	24.5	33.7	39.9	65 dBA: 50
Heavy Trucks	82.14	-15.69	-6.99	58.3	41.3	33.5	42.7	48.9	60 dBA: 108
Total:				61.6	55.9	54.5	49.5	57.5	55 dBA: 233

Road Name: Mt. Vernon Avenue		Segment: South of Center Street		Roadway Classification: Secondary					
Average Daily Traffic: 6470 Vehicles		Vehicle Speed: 45 MPH		Vehicle Mix: 2					
NOISE PARAMETERS AT 145 FEET FROM CENTERLINE (Equiv. Lane Dist: 143.88 ft)									
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels					
	REML Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve. Leq Night	Ldn CNEL		
Automobiles	69.34	-4.09	-6.99	57.1	54.7	53.4	47.3	55.8	70 dBA: 18
Medium Trucks	77.62	-18.96	-6.99	50.5	31.3	23.5	32.7	38.8	65 dBA: 43
Heavy Trucks	82.14	-16.74	-6.99	57.2	40.2	32.4	41.7	47.8	60 dBA: 92
Total:				60.6	54.9	53.4	48.5	56.5	55 dBA: 198

Road Name: Main Street		Segment: West of Mt. Vernon Avenue		Roadway Classification: Secondary					
Average Daily Traffic: 1950 Vehicles		Vehicle Speed: 40 MPH		Vehicle Mix: 2					
NOISE PARAMETERS AT 65 FEET FROM CENTERLINE (Equiv. Lane Dist: 62.46 ft)									
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels					
	REML Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve. Leq Night	Ldn CNEL		
Automobiles	67.36	-8.79	-1.55	55.8	53.4	52.2	46.1	54.5	70 dBA: 7
Medium Trucks	76.31	-23.65	-1.55	49.9	30.7	22.9	32.1	38.3	65 dBA: 15
Heavy Trucks	81.16	-21.44	-1.55	57.0	40.0	32.2	41.4	47.6	60 dBA: 35
Total:				59.9	53.7	52.2	47.5	55.4	55 dBA: 69

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING PLUS AMBIENT GROWTH YEAR 2022 WITHOUT PROJECT

Project: Highgrove Residential/Commercial
Site Conditions: Soft

Road Name: Center Street		Segment: West of Michigan Avenue		Roadway Classification: Secondary															
Average Daily Traffic: 5370 Vehicles		Vehicle Speed: 40 MPH		Vehicle Mix: 2															
NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 51.97 ft)																			
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels			Noise Contour (in feet)												
	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL										
Automobiles	67.36	-4.39	-0.36	-1.20	61.4	59.0	57.8	51.7	60.1	60.8	70 dBA:	14	15						
Medium Trucks	76.31	-19.26	-0.36	-1.20	55.5	36.3	28.5	37.7	43.9	43.9	65 dBA:	30	32						
Heavy Trucks	81.16	-17.04	-0.36	-1.20	62.6	45.6	37.8	47.0	53.2	53.2	60 dBA:	64	70						
Total:											65.5	59.3	57.8	53.1	61.0	61.5	55 dBA:	138	150

Road Name: Center Street		Segment: West of Mt. Vernon Avenue		Roadway Classification: Secondary															
Average Daily Traffic: 3130 Vehicles		Vehicle Speed: 40 MPH		Vehicle Mix: 2															
NOISE PARAMETERS AT 70 FEET FROM CENTERLINE (Equiv. Lane Dist: 67.65 ft)																			
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels			Noise Contour (in feet)												
	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL										
Automobiles	67.36	-6.73	-2.07	-1.20	57.4	55.0	53.7	47.6	56.1	56.7	70 dBA:	9	10						
Medium Trucks	76.31	-21.60	-2.07	-1.20	51.4	32.2	24.5	33.7	39.8	39.8	65 dBA:	20	22						
Heavy Trucks	81.16	-19.38	-2.07	-1.20	58.5	41.5	33.7	42.9	49.1	49.1	60 dBA:	44	48						
Total:											61.4	55.2	53.7	49.0	56.9	57.5	55 dBA:	94	102

Road Name: Center Street		Segment: East of Project Driveway 4		Roadway Classification: Collector															
Average Daily Traffic: 2330 Vehicles		Vehicle Speed: 40 MPH		Vehicle Mix: 1															
NOISE PARAMETERS AT 65 FEET FROM CENTERLINE (Equiv. Lane Dist: 64.72 ft)																			
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels			Noise Contour (in feet)												
	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL										
Automobiles	67.36	-7.77	-1.78	-1.20	56.6	54.5	53.2	47.2	55.6	56.2	70 dBA:	7	8						
Medium Trucks	76.31	-25.00	-1.78	-1.20	48.3	27.1	19.6	28.3	34.5	34.5	65 dBA:	15	17						
Heavy Trucks	81.16	-28.96	-1.78	-1.20	49.2	23.9	20.5	25.1	31.3	31.4	60 dBA:	33	37						
Total:											57.8	54.5	53.2	47.2	55.6	56.3	55 dBA:	72	79

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING PLUS AMBIENT GROWTH YEAR 2022 WITH PROJECT

**Project: Highgrove Residential/Commercial
Site Conditions: Soft**

Vehicle Type	Vehicle Mix 1 (Secondary, Collector)			Vehicle Mix 2 (Arterial, Major)			Vehicle Mix 3 (State Route 79)			
	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night	
Automobiles	73.60%	13.60%	10.22%	69.50%	12.90%	9.60%	92.00%	63.34%	12.98%	15.18%
Medium Trucks	0.90%	0.04%	0.90%	1.44%	0.06%	1.50%	3.00%	3.14%	0.57%	1.59%
Heavy Trucks	0.35%	0.04%	0.35%	2.40%	0.10%	2.50%	5.00%	1.75%	0.17%	1.28%

Road Name: Michigan Avenue		Segment: North of Center Street		Vehicle Speed: 25 MPH		Vehicle Mix: 1		Roadway Classification: Collector		
		Average Daily Traffic: 3130 Vehicles								
NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 54.67 ft)										
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels			Noise Contour (in feet)			
	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Ldn CNEL
Automobiles	59.44	-4.44	-0.69	53.1	51.0	49.7	43.7	52.1	52.7	70 dBA: 4
Medium Trucks	71.09	-21.68	-0.69	47.5	26.3	18.8	27.5	33.7	33.7	65 dBA: 8
Heavy Trucks	78.74	-25.64	-0.69	51.2	25.9	22.5	27.1	33.3	33.4	60 dBA: 17
				Total: 56.0	51.0	49.7	43.9	52.2	52.8	55 dBA: 36

Road Name: Michigan Avenue		Segment: South of Center Street		Vehicle Speed: 25 MPH		Vehicle Mix: 2		Roadway Classification: Collector		
		Average Daily Traffic: 1370 Vehicles								
NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 54.67 ft)										
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels			Noise Contour (in feet)			
	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Ldn CNEL
Automobiles	59.44	-8.28	-0.69	49.3	46.9	45.6	39.6	48.0	48.6	70 dBA: 3
Medium Trucks	71.09	-23.15	-0.69	46.1	26.8	19.1	28.3	34.4	34.5	65 dBA: 6
Heavy Trucks	78.74	-20.93	-0.69	55.9	38.9	31.2	40.4	46.5	46.6	60 dBA: 13
				Total: 57.1	47.6	45.8	43.1	50.4	50.8	55 dBA: 27

Road Name: Mt. Vernon Avenue		Segment: North of Main Street		Vehicle Speed: 40 MPH		Vehicle Mix: 2		Roadway Classification: Secondary		
		Average Daily Traffic: 10660 Vehicles								
NOISE PARAMETERS AT 65 FEET FROM CENTERLINE (Equiv. Lane Dist: 62.46 ft)										
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels			Noise Contour (in feet)			
	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Ldn CNEL
Automobiles	67.36	-1.41	-1.55	63.2	60.8	59.5	53.5	61.9	62.5	70 dBA: 21
Medium Trucks	76.31	-16.28	-1.55	57.3	38.1	30.3	39.5	45.7	45.7	65 dBA: 46
Heavy Trucks	81.16	-14.06	-1.55	64.3	47.4	39.6	48.8	54.9	55.0	60 dBA: 100
				Total: 67.3	61.0	59.6	54.9	62.8	63.3	55 dBA: 215

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING PLUS AMBIENT GROWTH YEAR 2022 WITH PROJECT

Project: Highgrove Residential/Commercial
Site Conditions: Soft

Road Name: Mt. Vernon Avenue		Segment: North of Project Driveway 1		Roadway Classification: Secondary								
Average Daily Traffic: 8930 Vehicles		Vehicle Speed: 45 MPH		Vehicle Mix: 2								
NOISE PARAMETERS AT 75 FEET FROM CENTERLINE (Equiv. Lane Dist: 72.81 ft)												
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels			Centerline Distance to Noise Contour (in feet)					
	REML Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL			
Automobiles	69.34	-2.69	-1.20	62.9	60.5	59.2	53.2	61.6	62.2	70 dBA: 23	25	
Medium Trucks	77.62	-17.56	-1.20	56.3	37.1	29.3	38.5	44.7	44.7	65 dBA: 50	54	
Heavy Trucks	82.14	-15.34	-1.20	63.1	46.1	38.3	47.5	53.6	53.7	60 dBA: 107	117	
Total:				66.4	60.7	59.3	54.3	62.3	62.9	55 dBA:	231	251

Road Name: Mt. Vernon Avenue		Segment: North of Center Street		Roadway Classification: Secondary								
Average Daily Traffic: 9200 Vehicles		Vehicle Speed: 45 MPH		Vehicle Mix: 2								
NOISE PARAMETERS AT 145 FEET FROM CENTERLINE (Equiv. Lane Dist: 143.88 ft)												
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels			Centerline Distance to Noise Contour (in feet)					
	REML Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL			
Automobiles	69.34	-2.56	-1.20	58.6	56.2	54.9	48.9	57.3	57.9	70 dBA: 23	25	
Medium Trucks	77.62	-17.43	-1.20	52.0	32.8	25.0	34.2	40.4	40.4	65 dBA: 50	54	
Heavy Trucks	82.14	-15.21	-1.20	58.7	41.8	34.0	43.2	49.3	49.4	60 dBA: 107	116	
Total:				62.1	56.4	55.0	50.0	58.0	58.6	55 dBA:	231	251

Road Name: Mt. Vernon Avenue		Segment: South of Center Street		Roadway Classification: Secondary								
Average Daily Traffic: 6900 Vehicles		Vehicle Speed: 45 MPH		Vehicle Mix: 2								
NOISE PARAMETERS AT 145 FEET FROM CENTERLINE (Equiv. Lane Dist: 143.88 ft)												
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels			Centerline Distance to Noise Contour (in feet)					
	REML Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL			
Automobiles	69.34	-3.81	-1.20	57.3	55.0	53.7	47.6	56.1	56.7	70 dBA: 19	21	
Medium Trucks	77.62	-18.68	-1.20	50.8	31.5	23.8	33.0	39.1	39.2	65 dBA: 41	45	
Heavy Trucks	82.14	-16.46	-1.20	57.5	40.5	32.7	41.9	48.1	48.1	60 dBA: 88	96	
Total:				60.9	55.1	53.7	48.8	56.8	57.3	55 dBA:	190	207

Road Name: Main Street		Segment: West of Mt. Vernon Avenue		Roadway Classification: Secondary								
Average Daily Traffic: 2060 Vehicles		Vehicle Speed: 40 MPH		Vehicle Mix: 2								
NOISE PARAMETERS AT 65 FEET FROM CENTERLINE (Equiv. Lane Dist: 62.46 ft)												
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels			Centerline Distance to Noise Contour (in feet)					
	REML Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL			
Automobiles	67.36	-8.55	-1.55	56.1	53.7	52.4	46.3	54.8	55.4	70 dBA: 7	8	
Medium Trucks	76.31	-23.42	-1.55	50.1	30.9	23.2	32.4	38.5	38.6	65 dBA: 15	17	
Heavy Trucks	81.16	-21.20	-1.55	57.2	40.2	32.4	41.6	47.8	47.8	60 dBA: 33	36	
Total:				60.1	53.9	52.4	47.7	55.6	56.2	55 dBA:	72	78

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING PLUS AMBIENT GROWTH YEAR 2022 WITH PROJECT

Project: Highgrove Residential/Commercial
Site Conditions: Soft

Road Name: Center Street		Segment: West of Michigan Avenue		Roadway Classification: Secondary								
Average Daily Traffic: 6020 Vehicles		Vehicle Speed: 40 MPH		Vehicle Mix: 2								
NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 51.97 ft)												
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels			Centerline Distance to Noise Contour (in feet)					
	RE MEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL			
Automobiles	67.36	-3.89	-1.20	61.9	59.5	58.2	52.2	60.6	61.3	70 dBA: 15	16	
Medium Trucks	76.31	-18.76	-0.36	56.0	36.8	29.0	38.2	44.4	44.4	65 dBA: 32	35	
Heavy Trucks	81.16	-16.54	-0.36	63.1	46.1	38.3	47.5	53.7	53.7	60 dBA: 69	75	
Total:				66.0	59.8	58.3	53.6	61.5	62.0	55 dBA:	149	162

Road Name: Center Street		Segment: West of Mt. Vernon Avenue		Roadway Classification: Secondary								
Average Daily Traffic: 4210 Vehicles		Vehicle Speed: 40 MPH		Vehicle Mix: 2								
NOISE PARAMETERS AT 70 FEET FROM CENTERLINE (Equiv. Lane Dist: 67.65 ft)												
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels			Centerline Distance to Noise Contour (in feet)					
	RE MEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL			
Automobiles	67.36	-5.45	-2.07	58.6	56.3	55.0	48.9	57.4	58.0	70 dBA: 12	12	
Medium Trucks	76.31	-20.31	-2.07	52.7	33.5	25.7	34.9	41.1	41.1	65 dBA: 25	27	
Heavy Trucks	81.16	-18.09	-2.07	59.8	42.8	35.0	44.2	50.4	50.4	60 dBA: 53	58	
Total:				62.7	56.5	55.0	50.3	58.2	58.8	55 dBA:	115	125

Road Name: Center Street		Segment: East of Project Driveway 4		Roadway Classification: Collector								
Average Daily Traffic: 2440 Vehicles		Vehicle Speed: 40 MPH		Vehicle Mix: 1								
NOISE PARAMETERS AT 65 FEET FROM CENTERLINE (Equiv. Lane Dist: 64.72 ft)												
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels			Centerline Distance to Noise Contour (in feet)					
	RE MEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL			
Automobiles	67.36	-7.57	-1.78	56.8	54.7	53.4	47.4	55.8	56.4	70 dBA: 7	8	
Medium Trucks	76.31	-24.80	-1.78	48.5	27.3	19.8	28.5	34.7	34.7	65 dBA: 16	17	
Heavy Trucks	81.16	-28.76	-1.78	49.4	24.1	20.7	25.3	31.5	31.6	60 dBA: 34	38	
Total:				58.1	54.7	53.4	47.4	55.8	56.5	55 dBA:	74	81

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING PLUS AMBIENT GROWTH PLUS CUMULATIVE YEAR 2022 NO PROJECT **Project: Highgrove Residential/Commercial**
Site Conditions: Soft

Vehicle Type	Vehicle Mix 1 (Secondary, Collector)			Vehicle Mix 2 (Arterial, Major)			Vehicle Mix 3 (State Route 79)			
	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night	
Automobiles	73.60%	13.60%	10.22%	69.50%	12.90%	9.60%	92.00%	63.34%	12.98%	15.18%
Medium Trucks	0.90%	0.04%	0.90%	1.44%	0.06%	1.50%	3.00%	3.14%	0.57%	1.59%
Heavy Trucks	0.35%	0.04%	0.35%	2.40%	0.10%	2.50%	5.00%	1.75%	0.17%	1.28%

Road Name: Michigan Avenue		Segment: North of Center Street			Roadway Classification: Collector					
Average Daily Traffic: 3320 Vehicles		Vehicle Speed: 25 MPH			Vehicle Mix: 1					
NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 54.67 ft)										
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels			Centerline Distance to Noise Contour (in feet)			
	RE MEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve. Leq Night		Ldn		
Automobiles	59.44	-4.19	-0.69	53.4	51.2	49.9	43.9	52.3	53.0	70 dBA: 4
Medium Trucks	71.09	-21.43	-0.69	47.8	26.5	19.0	27.8	33.9	34.0	65 dBA: 8
Heavy Trucks	78.74	-25.38	-0.69	51.5	26.1	22.7	27.4	33.6	33.7	60 dBA: 17
Total:				56.2	51.3	49.9	44.1	52.5	53.1	55 dBA: 37

Road Name: Michigan Avenue		Segment: South of Center Street			Roadway Classification: Collector					
Average Daily Traffic: 1200 Vehicles		Vehicle Speed: 25 MPH			Vehicle Mix: 2					
NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 54.67 ft)										
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels			Centerline Distance to Noise Contour (in feet)			
	RE MEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve. Leq Night		Ldn		
Automobiles	59.44	-8.86	-0.69	48.7	46.3	45.0	39.0	47.4	48.0	70 dBA: 2
Medium Trucks	71.09	-23.72	-0.69	45.5	26.3	18.5	27.7	33.9	33.9	65 dBA: 5
Heavy Trucks	78.74	-21.50	-0.69	55.4	38.4	30.6	39.8	45.9	46.0	60 dBA: 12
Total:				56.6	47.0	45.2	42.6	49.9	50.2	55 dBA: 25

Road Name: Mt. Vernon Avenue		Segment: North of Main Street			Roadway Classification: Secondary					
Average Daily Traffic: 11400 Vehicles		Vehicle Speed: 40 MPH			Vehicle Mix: 2					
NOISE PARAMETERS AT 65 FEET FROM CENTERLINE (Equiv. Lane Dist: 62.46 ft)										
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels			Centerline Distance to Noise Contour (in feet)			
	RE MEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve. Leq Night		Ldn		
Automobiles	67.36	-1.12	-1.55	63.5	61.1	59.8	53.8	62.2	62.8	70 dBA: 22
Medium Trucks	76.31	-15.99	-1.55	57.6	38.4	30.6	39.8	45.9	46.0	65 dBA: 48
Heavy Trucks	81.16	-13.77	-1.55	64.6	47.6	39.9	49.1	55.2	55.3	60 dBA: 104
Total:				67.6	61.3	59.9	55.2	63.1	63.6	55 dBA: 225

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING PLUS AMBIENT GROWTH PLUS CUMULATIVE YEAR 2022 NO PROJECT **Project: Highgrove Residential/Commercial**
Site Conditions: Soft

Road Name: Mt. Vernon Avenue		Segment: North of Project Driveway 1		Roadway Classification: Secondary							
Average Daily Traffic: 9530 Vehicles		Vehicle Speed: 45 MPH		Vehicle Mix: 2							
NOISE PARAMETERS AT 75 FEET FROM CENTERLINE (Equiv. Lane Dist: 72.81 ft)											
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels			Centerline Distance to Noise Contour (in feet)				
	REML Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve. Leq Night		Ldn CNEL			
Automobiles	69.34	-2.41	-2.55	-1.20	63.2	60.8	59.5	53.5	61.9	62.5	70 dBA: 24
Medium Trucks	77.62	-17.28	-2.55	-1.20	56.6	37.4	29.6	38.8	45.0	45.0	65 dBA: 57
Heavy Trucks	82.14	-15.06	-2.55	-1.20	63.3	46.3	38.6	47.8	53.9	54.0	60 dBA: 122
Total: 66.7 61.0 59.6 54.6 62.6 63.2											

Road Name: Mt. Vernon Avenue		Segment: North of Center Street		Roadway Classification: Secondary							
Average Daily Traffic: 9390 Vehicles		Vehicle Speed: 45 MPH		Vehicle Mix: 2							
NOISE PARAMETERS AT 145 FEET FROM CENTERLINE (Equiv. Lane Dist: 143.88 ft)											
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels			Centerline Distance to Noise Contour (in feet)				
	REML Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve. Leq Night		Ldn CNEL			
Automobiles	69.34	-2.47	-6.99	-1.20	58.7	56.3	55.0	49.0	57.4	58.0	70 dBA: 23
Medium Trucks	77.62	-17.34	-6.99	-1.20	52.1	32.9	25.1	34.3	40.5	40.5	65 dBA: 55
Heavy Trucks	82.14	-15.12	-6.99	-1.20	58.8	41.8	34.1	43.3	49.4	49.5	60 dBA: 118
Total: 62.2 56.5 55.1 50.1 58.1 58.7											

Road Name: Mt. Vernon Avenue		Segment: South of Center Street		Roadway Classification: Secondary							
Average Daily Traffic: 7240 Vehicles		Vehicle Speed: 45 MPH		Vehicle Mix: 2							
NOISE PARAMETERS AT 145 FEET FROM CENTERLINE (Equiv. Lane Dist: 143.88 ft)											
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels			Centerline Distance to Noise Contour (in feet)				
	REML Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve. Leq Night		Ldn CNEL			
Automobiles	69.34	-3.60	-6.99	-1.20	57.6	55.2	53.9	47.8	56.3	56.9	70 dBA: 21
Medium Trucks	77.62	-18.47	-6.99	-1.20	51.0	31.8	24.0	33.2	39.3	39.4	65 dBA: 46
Heavy Trucks	82.14	-16.25	-6.99	-1.20	57.7	40.7	32.9	42.1	48.3	48.3	60 dBA: 99
Total: 61.1 55.4 53.9 49.0 57.0 57.5											

Road Name: Main Street		Segment: West of Mt. Vernon Avenue		Roadway Classification: Secondary							
Average Daily Traffic: 2660 Vehicles		Vehicle Speed: 40 MPH		Vehicle Mix: 2							
NOISE PARAMETERS AT 65 FEET FROM CENTERLINE (Equiv. Lane Dist: 62.46 ft)											
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels			Centerline Distance to Noise Contour (in feet)				
	REML Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve. Leq Night		Ldn CNEL			
Automobiles	67.36	-7.44	-1.55	-1.20	57.2	54.8	53.5	47.4	55.9	56.5	70 dBA: 9
Medium Trucks	76.31	-22.31	-1.55	-1.20	51.3	32.0	24.3	33.5	39.6	39.7	65 dBA: 18
Heavy Trucks	81.16	-20.09	-1.55	-1.20	58.3	41.3	33.5	42.8	48.9	48.9	60 dBA: 43
Total: 61.3 55.0 53.6 48.8 56.8 57.3											

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING PLUS AMBIENT GROWTH PLUS CUMULATIVE YEAR 2022 NO PROJECT **Project: Highgrove Residential/Commercial**
Site Conditions: Soft

Road Name:		Center Street		Segment:		West of Michigan Avenue		Roadway Classification: Secondary		
Average Daily Traffic: 6480 Vehicles		Vehicle Speed: 40 MPH		Vehicle Mix: 2		Vehicle Mix: 2		Roadway Classification: Secondary		
NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 51.97 ft)										
Noise Adjustments				Unmitigated Noise Levels						
Vehicle Type	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)
Automobiles	67.36	-3.57	-1.20	62.2	59.9	58.6	52.5	60.9	61.6	70 dBA: 16
Medium Trucks	76.31	-18.44	-1.20	56.3	37.1	29.3	38.5	44.7	44.7	65 dBA: 34
Heavy Trucks	81.16	-16.22	-1.20	63.4	46.4	38.6	47.8	54.0	54.0	60 dBA: 73
Total:				66.3	60.1	58.6	53.9	61.8	62.4	55 dBA: 170

Road Name:		Center Street		Segment:		West of Mt. Vernon Avenue		Roadway Classification: Secondary		
Average Daily Traffic: 3880 Vehicles		Vehicle Speed: 40 MPH		Vehicle Mix: 2		Vehicle Mix: 2		Roadway Classification: Secondary		
NOISE PARAMETERS AT 70 FEET FROM CENTERLINE (Equiv. Lane Dist: 67.65 ft)										
Noise Adjustments				Unmitigated Noise Levels						
Vehicle Type	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)
Automobiles	67.36	-5.80	-1.20	58.3	55.9	54.6	48.6	57.0	57.6	70 dBA: 11
Medium Trucks	76.31	-20.67	-1.20	52.4	33.2	25.4	34.6	40.7	40.8	65 dBA: 23
Heavy Trucks	81.16	-18.45	-1.20	59.4	42.4	34.7	43.9	50.0	50.1	60 dBA: 51
Total:				62.4	56.1	54.7	50.0	57.9	58.4	55 dBA: 118

Road Name:		Center Street		Segment:		East of Project Driveway 4		Roadway Classification: Collector		
Average Daily Traffic: 2690 Vehicles		Vehicle Speed: 40 MPH		Vehicle Mix: 1		Vehicle Mix: 1		Roadway Classification: Collector		
NOISE PARAMETERS AT 65 FEET FROM CENTERLINE (Equiv. Lane Dist: 64.72 ft)										
Noise Adjustments				Unmitigated Noise Levels						
Vehicle Type	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)
Automobiles	67.36	-7.14	-1.78	57.2	55.1	53.8	47.8	56.2	56.8	70 dBA: 8
Medium Trucks	76.31	-24.38	-1.78	48.9	27.7	20.2	28.9	35.1	35.2	65 dBA: 17
Heavy Trucks	81.16	-28.34	-1.78	49.8	24.5	21.1	25.7	31.9	32.0	60 dBA: 37
Total:				58.5	55.1	53.8	47.9	56.3	56.9	55 dBA: 87

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING PLUS AMBIENT GROWTH PLUS CUMULATIVE YEAR 2022 WITH PROJECT Project: Highgrove Residential/Commercial
 Site Conditions: **Soft**

Vehicle Type	Vehicle Mix 1 (Secondary, Collector)			Vehicle Mix 2 (Arterial, Major)			Vehicle Mix 3 (State Route 79)			
	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night	
Automobiles	73.60%	13.60%	10.22%	69.50%	12.90%	9.60%	92.00%	63.34%	12.98%	15.18%
Medium Trucks	0.90%	0.04%	0.90%	1.44%	0.06%	1.50%	3.00%	3.14%	0.57%	1.59%
Heavy Trucks	0.35%	0.04%	0.35%	2.40%	0.10%	2.50%	5.00%	1.75%	0.17%	1.28%

Road Name: Michigan Avenue		Segment: North of Center Street			Roadway Classification: Collector		
		Average Daily Traffic: 3540 Vehicles			Vehicle Speed: 25 MPH		
NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 54.67 ft)							
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels			Centerline Distance to Noise Contour (in feet)
	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Ldn
Automobiles	59.44	-3.91	-0.69	53.6	51.5	50.2	52.6
Medium Trucks	71.09	-21.15	-0.69	48.1	26.8	19.3	34.2
Heavy Trucks	78.74	-25.10	-0.69	51.8	26.4	23.0	33.9
Total:				56.5	51.6	50.2	52.7
				Ldn			4
				CNEL			4
				70 dBA:			4
				65 dBA:			8
				60 dBA:			18
				55 dBA:			39

Road Name: Michigan Avenue		Segment: South of Center Street			Roadway Classification: Collector		
		Average Daily Traffic: 1420 Vehicles			Vehicle Speed: 25 MPH		
NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 54.67 ft)							
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels			Centerline Distance to Noise Contour (in feet)
	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Ldn
Automobiles	59.44	-8.12	-0.69	49.4	47.1	45.8	48.1
Medium Trucks	71.09	-22.99	-0.69	46.2	27.0	19.2	34.6
Heavy Trucks	78.74	-20.77	-0.69	56.1	39.1	31.3	46.7
Total:				57.3	47.7	45.9	50.6
				Ldn			3
				CNEL			3
				70 dBA:			3
				65 dBA:			6
				60 dBA:			13
				55 dBA:			28

Road Name: Mt. Vernon Avenue		Segment: North of Main Street			Roadway Classification: Secondary		
		Average Daily Traffic: 11830 Vehicles			Vehicle Speed: 40 MPH		
NOISE PARAMETERS AT 65 FEET FROM CENTERLINE (Equiv. Lane Dist: 62.46 ft)							
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels			Centerline Distance to Noise Contour (in feet)
	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Ldn
Automobiles	67.36	-0.96	-1.55	63.6	61.3	60.0	62.4
Medium Trucks	76.31	-15.82	-1.55	57.7	38.5	30.7	46.1
Heavy Trucks	81.16	-13.61	-1.55	64.8	47.8	40.0	55.4
Total:				67.7	61.5	60.0	63.2
				Ldn			23
				CNEL			25
				70 dBA:			54
				65 dBA:			107
				60 dBA:			230

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING PLUS AMBIENT GROWTH PLUS CUMULATIVE YEAR 2022 WITH PROJECT Project: Highgrove Residential/Commercial
Site Conditions: Soft

Road Name: Mt. Vernon Avenue		Segment: North of Project Driveway 1		Roadway Classification: Secondary															
Average Daily Traffic: 10070 Vehicles		Vehicle Speed: 45 MPH		Vehicle Mix: 2															
NOISE PARAMETERS AT 75 FEET FROM CENTERLINE (Equiv. Lane Dist: 72.81 ft)																			
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels			Centerline Distance to Noise Contour (in feet)												
	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL										
Automobiles	69.34	-2.17	-2.55	-1.20	63.4	61.1	59.8	53.7	62.1	62.8	70 dBA:	25	27						
Medium Trucks	77.62	-17.04	-2.55	-1.20	56.8	37.6	29.8	39.1	45.2	45.2	65 dBA:	54	59						
Heavy Trucks	82.14	-14.82	-2.55	-1.20	63.6	46.6	38.8	48.0	54.2	54.2	60 dBA:	116	126						
Total:											67.0	61.2	59.8	54.9	62.9	63.4	55 dBA:	250	272

Road Name: Mt. Vernon Avenue		Segment: North of Center Street		Roadway Classification: Secondary															
Average Daily Traffic: 10360 Vehicles		Vehicle Speed: 45 MPH		Vehicle Mix: 2															
NOISE PARAMETERS AT 145 FEET FROM CENTERLINE (Equiv. Lane Dist: 143.88 ft)																			
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels			Centerline Distance to Noise Contour (in feet)												
	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL										
Automobiles	69.34	-2.05	-6.99	-1.20	59.1	56.7	55.4	49.4	57.8	58.5	70 dBA:	25	27						
Medium Trucks	77.62	-16.91	-6.99	-1.20	52.5	33.3	25.5	34.7	40.9	40.9	65 dBA:	54	58						
Heavy Trucks	82.14	-14.69	-6.99	-1.20	59.3	42.3	34.5	43.7	49.8	49.9	60 dBA:	116	126						
Total:											62.6	56.9	55.5	50.5	58.5	59.1	55 dBA:	250	271

Road Name: Mt. Vernon Avenue		Segment: South of Center Street		Roadway Classification: Secondary															
Average Daily Traffic: 7670 Vehicles		Vehicle Speed: 45 MPH		Vehicle Mix: 2															
NOISE PARAMETERS AT 145 FEET FROM CENTERLINE (Equiv. Lane Dist: 143.88 ft)																			
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels			Centerline Distance to Noise Contour (in feet)												
	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL										
Automobiles	69.34	-3.35	-6.99	-1.20	57.8	55.4	54.1	48.1	56.5	57.1	70 dBA:	20	22						
Medium Trucks	77.62	-18.22	-6.99	-1.20	51.2	32.0	24.2	33.4	39.6	39.6	65 dBA:	44	48						
Heavy Trucks	82.14	-16.00	-6.99	-1.20	58.0	41.0	33.2	42.4	48.5	48.6	60 dBA:	95	103						
Total:											61.3	55.6	54.2	49.2	57.2	57.8	55 dBA:	204	222

Road Name: Main Street		Segment: West of Mt. Vernon Avenue		Roadway Classification: Secondary															
Average Daily Traffic: 2770 Vehicles		Vehicle Speed: 40 MPH		Vehicle Mix: 2															
NOISE PARAMETERS AT 65 FEET FROM CENTERLINE (Equiv. Lane Dist: 62.46 ft)																			
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels			Centerline Distance to Noise Contour (in feet)												
	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL										
Automobiles	67.36	-7.26	-1.55	-1.20	57.3	55.0	53.7	47.6	56.1	56.7	70 dBA:	9	9						
Medium Trucks	76.31	-22.13	-1.55	-1.20	51.4	32.2	24.4	33.6	39.8	39.8	65 dBA:	19	20						
Heavy Trucks	81.16	-19.91	-1.55	-1.20	58.5	41.5	33.7	42.9	49.1	49.1	60 dBA:	41	44						
Total:											61.4	55.2	53.7	49.0	56.9	57.5	55 dBA:	87	95

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING PLUS AMBIENT GROWTH PLUS CUMULATIVE YEAR 2022 WITH PROJECT Project: Highgrove Residential/Commercial Site Conditions: Soft

Road Name: Center Street		Segment: West of Michigan Avenue		Roadway Classification: Secondary						
Average Daily Traffic: 7130 Vehicles		Vehicle Speed: 40 MPH		Vehicle Mix: 2						
NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 51.97 ft)										
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels			Noise Contour (in feet)			
	REML Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	
Automobiles	67.36	-3.16	-1.20	62.6	60.3	59.0	52.9	61.4	62.0	70 dBA: 17
Medium Trucks	76.31	-18.02	-1.20	56.7	37.5	29.7	39.0	45.1	45.1	65 dBA: 39
Heavy Trucks	81.16	-15.81	-1.20	63.8	46.8	39.0	48.2	54.4	54.4	60 dBA: 84
Total:				66.7	60.5	59.0	54.3	62.2	62.8	55 dBA: 181

Road Name: Center Street		Segment: West of Mt. Vernon Avenue		Roadway Classification: Secondary						
Average Daily Traffic: 4960 Vehicles		Vehicle Speed: 40 MPH		Vehicle Mix: 2						
NOISE PARAMETERS AT 70 FEET FROM CENTERLINE (Equiv. Lane Dist: 67.65 ft)										
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels			Noise Contour (in feet)			
	REML Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	
Automobiles	67.36	-4.73	-1.20	59.4	57.0	55.7	49.6	58.1	58.7	70 dBA: 13
Medium Trucks	76.31	-19.60	-1.20	53.4	34.2	26.5	35.7	41.8	41.8	65 dBA: 30
Heavy Trucks	81.16	-17.38	-1.20	60.5	43.5	35.7	44.9	51.1	51.1	60 dBA: 65
Total:				63.4	57.2	55.7	51.0	58.9	59.5	55 dBA: 139

Road Name: Center Street		Segment: East of Project Driveway 4		Roadway Classification: Collector						
Average Daily Traffic: 2800 Vehicles		Vehicle Speed: 40 MPH		Vehicle Mix: 1						
NOISE PARAMETERS AT 65 FEET FROM CENTERLINE (Equiv. Lane Dist: 64.72 ft)										
Vehicle Type	Noise Adjustments			Unmitigated Noise Levels			Noise Contour (in feet)			
	REML Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	
Automobiles	67.36	-6.97	-1.78	57.4	55.3	54.0	48.0	56.4	57.0	70 dBA: 8
Medium Trucks	76.31	-24.21	-1.78	49.1	27.9	20.4	29.1	35.3	35.3	65 dBA: 17
Heavy Trucks	81.16	-28.16	-1.78	50.0	24.7	21.3	25.9	32.1	32.2	60 dBA: 41
Total:				58.6	55.3	54.0	48.0	56.4	57.0	55 dBA: 81

APPENDIX F

Commercial Operations Reference Noise Measurements and Wall Calculations

Measurement Report

Report Summary

Meter's File Name	831_Data.004	Computer's File Name	SLM_0002509_831_Data_004.02.ldbin
Meter	831		
Firmware	2.314		
User	GT	Location	
Description	Riverside - The Motorcycle Company - Phase 3		
Note	On Roof - Approx 6 feet from HVAC Unit		
Start Time	2020-05-09 13:23:15	Duration	0:10:00.2
End Time	2020-05-09 13:33:15	Run Time	0:10:00.2
		Pause Time	0:00:00.0

Results

Overall Metrics

LA _{eq}	65.1 dB		
LAE	92.9 dB	SEA	--- dB
EA	214.7 µPa²h		
LZ _{peak}	106.4 dB	2020-05-09 13:25:40	
LAS _{max}	80.1 dB	2020-05-09 13:25:19	
LAS _{min}	55.1 dB	2020-05-09 13:30:14	
LA _{eq}	65.1 dB		
LC _{eq}	78.1 dB	LC _{eq} - LA _{eq}	13.0 dB
LAI _{eq}	68.9 dB	LAI _{eq} - LA _{eq}	3.8 dB

Exceedances

	Count	Duration
LAS > 65.0 dB	16	0:02:46.5
LAS > 85.0 dB	0	0:00:00.0
LZ _{peak} > 135.0 dB	0	0:00:00.0
LZ _{peak} > 137.0 dB	0	0:00:00.0
LZ _{peak} > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight	
65.1 dB	65.1 dB	0.0 dB	
LDEN	LDay	LEve	LNight
65.1 dB	65.1 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L _{eq}	65.1 dB		78.1 dB		80.9 dB	
LS _(max)	80.1 dB	2020-05-09 13:25:19	91.6 dB	2020-05-09 13:26:05	97.4 dB	2020-05-09 13:23:15
LF _(max)	84.7 dB	2020-05-09 13:25:18	95.4 dB	2020-05-09 13:25:40	97.5 dB	2020-05-09 13:23:15
LI _(max)	86.7 dB	2020-05-09 13:25:18	97.5 dB	2020-05-09 13:25:40	99.6 dB	2020-05-09 13:23:15
LS _(min)	55.1 dB	2020-05-09 13:30:14	64.7 dB	2020-05-09 13:30:02	67.4 dB	2020-05-09 13:28:06
LF _(min)	54.3 dB	2020-05-09 13:30:13	63.0 dB	2020-05-09 13:30:12	65.8 dB	2020-05-09 13:27:31
LI _(min)	54.6 dB	2020-05-09 13:30:13	65.0 dB	2020-05-09 13:30:02	68.0 dB	2020-05-09 13:27:59
L _{Peak(max)}	98.9 dB	2020-05-09 13:25:18	105.7 dB	2020-05-09 13:25:40	106.4 dB	2020-05-09 13:25:40

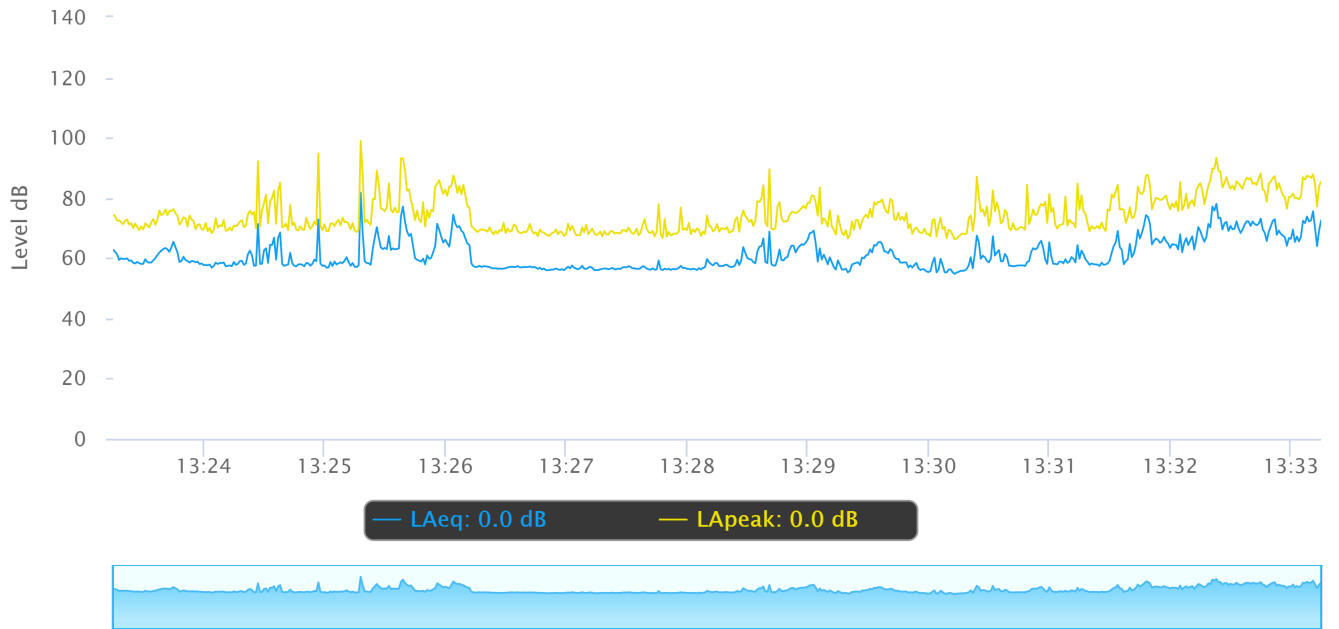
Overloads

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

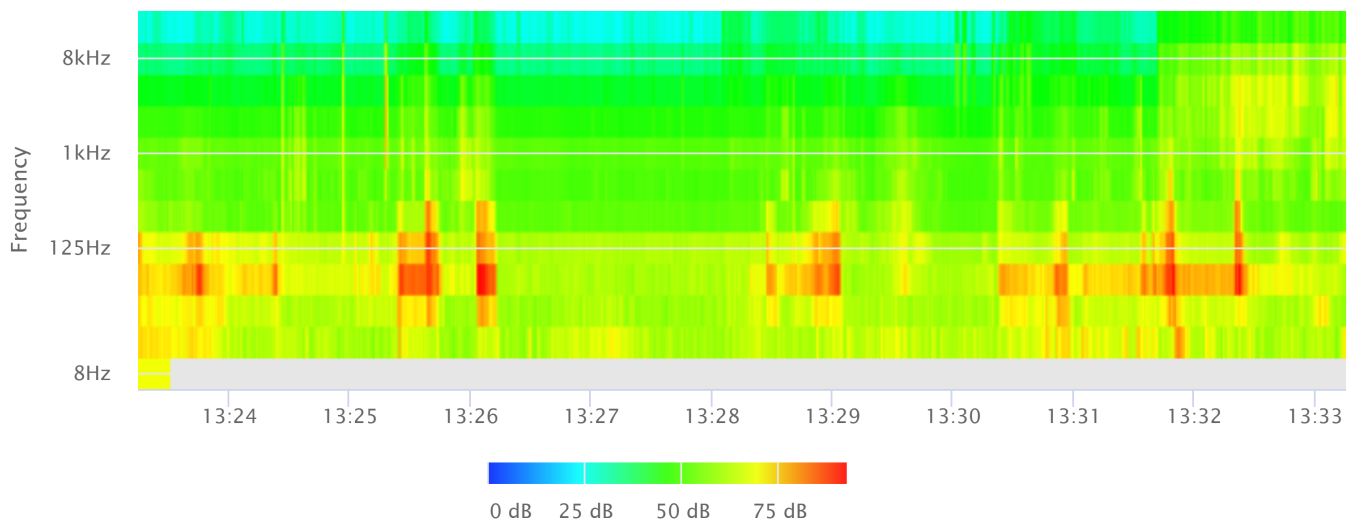
Statistics

LAS 5.0	71.5 dB
LAS 10.0	69.4 dB
LAS 33.3	62.7 dB
LAS 50.0	59.5 dB
LAS 66.6	58.1 dB
LAS 90.0	56.5 dB

Time History



OBA 1/1 Leq



General Information

Serial Number 02509
Model 831
Firmware Version 2.112
Filename 831_Data.002
User GT
Job Description Northwest Fresno Walmart Relocation
Location Northwest Fresno Walmart

Measurement Description

Start Time Saturday, 2013 July 27 15:49:15
Stop Time Saturday, 2013 July 27 16:09:15
Duration 00:20:00.6
Run Time 00:20:00.6
Pause 00:00:00.0
Pre Calibration Saturday, 2013 July 27 13:36:08
Post Calibration
Calibration Deviation ---

Note

Located at the eastern portion of the southern parking lot and approx 140 feet south of the front door
96 F, 35% Humidity, 29.48 in Hg, 3 mph wind, partly cloudy

Overall Data

LAeq 63.1 dB
LASmax 2013 Jul 27 15:59:44 79.2 dB
LApeak (max) 2013 Jul 27 16:06:25 102.2 dB
LASmin 2013 Jul 27 15:50:20 49.6 dB
LCEq 74.0 dB
LAeq 63.1 dB
LCEq - LAeq 10.9 dB
LAIEq 67.4 dB
LAeq 63.1 dB
LAIEq - LAeq 4.3 dB
Ldn 63.1 dB
LDay 07:00-23:00 63.1 dB
LNight 23:00-07:00 --- dB
Lden 63.1 dB
LDay 07:00-19:00 63.1 dB
LEvening 19:00-23:00 --- dB
LNight 23:00-07:00 --- dB
LAE 93.9 dB
Overloads 0
Overload Duration 0.0 s
OBA Overloads 0
OBA Overload Duration 0.0 s

Statistics

LAS5.00 66.7 dBA
LAS10.00 66.3 dBA
LAS33.30 62.8 dBA
LAS50.00 61.7 dBA
LAS66.60 57.7 dBA
LAS90.00 52.8 dBA
LAS > 65.0 dB (Exceedence Counts / Duration) 17 / 347.8 s
LAS > 85.0 dB (Exceedence Counts / Duration) 0 / 0.0 s
LApeak > 135.0 dB (Exceedence Counts / Duration) 0 / 0.0 s
LApeak > 137.0 dB (Exceedence Counts / Duration) 0 / 0.0 s
LApeak > 140.0 dB (Exceedence Counts / Duration) 0 / 0.0 s

Settings

RMS Weight A Weighting
Peak Weight A Weighting
Detector Slow
Preamp PRM831
Integration Method Linear
OBA Range Normal
OBA Bandwidth 1/1 and 1/3
OBA Freq. Weighting Z Weighting
OBA Max Spectrum Bin Max
Gain +0 dB
Under Range Limit 26.1 dB
Under Range Peak 75.6 dB
Noise Floor 17.0 dB
Overload 143.1 dB

1/1 Spectra

Freq. (Hz): 8.0 16.0 31.5 63.0 125 250 500 1k 2k 4k 8k 16k
LZeq 66.7 66.1 71.1 71.6 64.9 59.5 59.6 58.3 56.2 51.8 46.8 44.6
LZSmax 82.6 84.9 82.2 89.3 77.1 67.1 72.4 76.6 76.6 69.0 67.7 63.1
LZSmin 46.5 55.4 53.6 59.0 55.2 49.9 45.5 43.6 40.9 37.7 39.6 42.8

1/3 Spectra

Freq. (Hz):	6.3	8.0	10.0	12.5	16.0	20.0	25.0	31.5	40.0	50.0	63.0	80.0
LZeq	63.6	61.5	59.8	58.7	60.7	63.4	67.2	66.6	65.3	65.7	67.5	67.2
LZSmax	80.9	76.9	73.6	75.5	79.8	83.7	80.9	76.8	78.9	83.8	87.4	88.8
LZSmin	37.3	40.3	43.7	45.3	48.2	51.5	55.9	60.4	54.9	53.2	57.5	47.0
Freq. (Hz):	100	125	160	200	250	315	400	500	630	800	1k	1.25k
LZeq	61.7	61.0	54.9	52.9	57.0	53.2	57.3	54.1	52.1	54.5	53.3	52.7
LZSmax	76.0	71.0	69.8	65.8	64.6	65.6	67.0	71.0	67.1	65.9	72.9	73.0
LZSmin	52.1	48.8	46.7	42.4	46.2	44.6	43.2	38.5	38.6	39.0	39.4	38.2
Freq. (Hz):	1.6k	2k	2.5k	3.15k	4k	5k	6.3k	8k	10k	12.5k	16k	20k
LZeq	52.5	50.9	50.7	49.0	46.4	44.5	43.0	41.7	41.1	40.0	39.6	40.0
LZSmax	75.9	69.6	63.7	63.8	64.4	64.7	63.3	62.7	62.7	60.8	57.9	52.5
LZSmin	37.2	35.4	34.6	33.1	32.6	32.8	33.6	34.7	35.9	36.7	37.7	39.4

Calibration History

Preamp	Date	dB re. 1V/Pa
PRM831	27 Jul 2013 13:36:08	-25.6
PRM831	28 Apr 2013 15:34:24	-25.9
PRM831	23 Apr 2013 10:17:33	-25.0
PRM831	27 Feb 2013 19:15:30	-25.7
PRM831	24 Jan 2013 12:00:16	-25.6
PRM831	15 Jan 2013 07:50:44	-26.2
PRM831	04 Jan 2013 13:47:46	-26.5

File Translated: V:\Vista Env\2010\10022-Fresno Walmart\Noise Measurements\LD\15.slm.d1
 Model/Serial Number: 824 / A3176
 Firmware/Software Revs: 4.283 / 3.120
 Name:
 Descr1: 1021 Didrikson Way
 Descr2: Laguna Beach, CA 92651
 Setup/Setup Descr: slm&rt.a.ssa / SLM & Real-Time Analyzer
 Location: 30' N of vendor truck loading area for Fresno Walmart
 Notel: Approx 70' S of Locust Ave CL
 Note2: 52F, 29.57 in Hg, 67% Humid., no wind, clear sky

Overall Any Data

Start Time: 19-May-2011 07:05:53
 Elapsed Time: 00:08:30.5

	A Weight	C Weight	Flat
Leq:	54.8 dBA	65.1 dBC	66.1 dBF
SEL:	81.9 dBA	92.2 dBC	93.2 dBF
Peak:	85.2 dBA	85.8 dBC	86.0 dBF
19-May-2011 07:09:58	19-May-2011 07:09:58	19-May-2011 07:09:52	19-May-2011 07:09:52
Lmax (slow):	67.9 dBA	73.2 dBC	73.8 dBF
19-May-2011 07:09:50	19-May-2011 07:13:57	19-May-2011 07:13:57	19-May-2011 07:13:57
Lmin (slow):	43.7 dBA	60.0 dBC	61.6 dBF
19-May-2011 07:11:17	19-May-2011 07:06:52	19-May-2011 07:06:51	19-May-2011 07:06:51
Lmax (fast):	70.7 dBA	75.5 dBC	75.7 dBF
19-May-2011 07:09:58	19-May-2011 07:11:34	19-May-2011 07:11:34	19-May-2011 07:11:34
Lmin (fast):	43.1 dBA	57.8 dBC	58.9 dBF
19-May-2011 07:11:17	19-May-2011 07:09:10	19-May-2011 07:09:10	19-May-2011 07:09:10
Lmax (impulse):	72.1 dBA	76.8 dBC	77.1 dBF
19-May-2011 07:09:58	19-May-2011 07:11:34	19-May-2011 07:11:34	19-May-2011 07:11:34
Lmin (impulse):	43.6 dBA	61.1 dBC	62.4 dBF
19-May-2011 07:11:17	19-May-2011 07:06:51	19-May-2011 07:06:51	19-May-2011 07:09:10

Spectra

Date: 19-May-2011
 Time: 07:05:53
 Run Time: 00:08:30.5

Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1	Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1
12.5	50.2		56.3		35.5		630	46.5		61.4		31.0	
16.0	50.9	55.5	56.1	61.5	37.1	41.8	800	45.4		60.8		30.5	
20.0	51.0		57.6		38.0		1000	44.5	49.3	56.1	63.9	31.7	35.6
25.0	55.8		57.5		41.1		1250	43.5		59.4		30.2	
31.5	57.7	61.6	57.1	63.3	46.2	49.9	1600	42.6		56.3		28.1	
40.0	56.7		60.3		46.3		2000	41.1	46.1	56.4	61.9	24.9	30.4
50.0	56.8		57.9		44.0		2500	40.0		58.4		21.7	
63.0	55.7	61.0	56.5	62.1	45.9	49.1	3150	40.2		60.8		19.4	
80.0	56.2		57.4		42.2		4000	39.5	43.8	58.6	63.4	18.7	24.1
100	55.6		55.1		42.3		5000	36.7		54.4		19.7	
125	54.3	59.2	59.0	63.8	40.7	45.7	6300	32.8		50.2		21.5	
160	52.8		61.0		39.4		8000	30.2	35.2	57.7	58.5	21.2	25.9
200	51.1		57.3		35.5		10000	25.4		41.5		20.5	
250	51.4	55.2	70.6	71.0	34.6	39.0	12500	22.9		32.2		19.4	
315	48.2		58.2		32.0		16000	20.8	26.5	27.4	33.9	19.1	24.4
400	47.0		59.0		30.1		20000	21.2		23.8		20.3	
500	47.0	51.6	64.3	66.9	30.4	35.3							

Ln Start Level: 15 dB
 L1.00 0.0 dBA L50.00 0.0 dBA L95.00 0.0 dBA
 L5.00 0.0 dBA L90.00 0.0 dBA L99.00 0.0 dBA

Detector: Slow
 Weighting: A
 SPL Exceedance Level 1: 85.0 dB Exceeded: 0 times
 SPL Exceedance level 2: 120 dB Exceeded: 0 times
 Peak-1 Exceedance Level: 105 dB Exceeded: 0 times
 Peak-2 Exceedance Level: 100 dB Exceeded: 0 times
 Hysteresis: 2
 Overloaded: 0 time(s)
 Paused: 0 times for 00:00:00.0

File Translated: V:\Vista Env\2010\10022-Fresno Walmart\Noise Measurements\LD\15.slmdl
Model/Serial Number: 824 / A3176

Current Any Data

Start Time: 19-May-2011 07:05:53
Elapsed Time: 00:08:30.5

	A Weight	C Weight	Flat
Leq:	54.8 dBA	65.1 dBC	66.1 dBF
SEL:	81.9 dBA	92.2 dBC	93.2 dBF
Peak:	85.2 dBA	85.8 dBC	86.0 dBF
19-May-2011 07:09:58		19-May-2011 07:09:52	19-May-2011 07:09:52
Lmax (slow):	67.9 dBA	73.2 dBC	73.8 dBF
19-May-2011 07:09:50		19-May-2011 07:13:57	19-May-2011 07:13:57
Lmin (slow):	43.7 dBA	60.0 dBC	61.6 dBF
19-May-2011 07:11:17		19-May-2011 07:06:52	19-May-2011 07:06:51
Lmax (fast):	70.7 dBA	75.5 dBC	75.7 dBF
19-May-2011 07:09:58		19-May-2011 07:11:34	19-May-2011 07:11:34
Lmin (fast):	43.1 dBA	57.8 dBC	58.9 dBF
19-May-2011 07:11:17		19-May-2011 07:09:10	19-May-2011 07:09:10
Lmax (impulse):	72.1 dBA	76.8 dBC	77.1 dBF
19-May-2011 07:09:58		19-May-2011 07:11:34	19-May-2011 07:11:34
Lmin (impulse):	43.6 dBA	61.1 dBC	62.4 dBF
19-May-2011 07:11:17		19-May-2011 07:06:51	19-May-2011 07:09:10

Calibrated:	18-May-2011 13:09:02	Offset:	-48.2 dB
Checked:	19-May-2011 06:46:08	Level:	113.9 dB
Calibrator	not set	Level:	114.0 dB
Cal Records Count:	0		

Interval Records:	Disabled	Number Interval Records:	0
History Records:	Disabled	Number History Records:	0
Run/Stop Records:		Number Run/Stop Records:	2

Measurement Report

Report Summary

Meter's File Name	831_Data.001	Computer's File Name	SLM_0002509_831_Data_001.09.ldbin
Meter	831		
Firmware	2.314		
User	GT		Location
Description	Chevron Gas Station - Approx 5 feet from fuel pump		
Note	4260 Riverwalk Pkwy, Riverside. 88F, 29.05 in Hg, 38% Hu, no wind, hazy sky		
Start Time	2021-09-23 16:59:55	Duration	0:10:00.7
End Time	2021-09-23 17:09:55	Run Time	0:10:00.7
		Pause Time	0:00:00.0

Results

Overall Metrics

LA _{eq}	60.3 dB		
LAE	88.1 dB	SEA	--- dB
EA	72.1 µPa²h		
LZ _{peak}	102.7 dB		2021-09-23 17:02:54
LAS _{max}	72.3 dB		2021-09-23 17:02:54
LAS _{min}	52.0 dB		2021-09-23 17:02:12
LA _{eq}	60.3 dB		
LC _{eq}	73.4 dB	LC _{eq} - LA _{eq}	13.0 dB
LAI _{eq}	64.4 dB	LAI _{eq} - LA _{eq}	4.1 dB

Exceedances

	Count	Duration
LAS > 65.0 dB	8	0:00:52.1
LAS > 85.0 dB	0	0:00:00.0
LZ _{peak} > 135.0 dB	0	0:00:00.0
LZ _{peak} > 137.0 dB	0	0:00:00.0
LZ _{peak} > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight	
60.3 dB	60.3 dB	0.0 dB	
LDEN	LDay	LEve	LNight
60.3 dB	60.3 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L _{eq}	60.3 dB		73.4 dB		77.2 dB	
LS _(max)	72.3 dB	2021-09-23 17:02:54	82.2 dB	2021-09-23 17:03:18	89.8 dB	2021-09-23 16:59:55
LF _(max)	80.4 dB	2021-09-23 17:02:54	84.7 dB	2021-09-23 17:04:00	94.3 dB	2021-09-23 17:07:51
LI _(max)	85.6 dB	2021-09-23 17:02:54	87.3 dB	2021-09-23 17:02:09	97.4 dB	2021-09-23 17:07:51
LS _(min)	52.0 dB	2021-09-23 17:02:12	67.3 dB	2021-09-23 17:07:14	69.9 dB	2021-09-23 17:07:14
LF _(min)	50.7 dB	2021-09-23 17:02:12	65.1 dB	2021-09-23 17:07:02	67.5 dB	2021-09-23 17:07:16
LI _(min)	51.5 dB	2021-09-23 17:01:47	68.0 dB	2021-09-23 17:07:14	70.7 dB	2021-09-23 17:07:14
L _{Peak(max)}	104.1 dB	2021-09-23 17:02:54	102.6 dB	2021-09-23 17:02:54	102.7 dB	2021-09-23 17:02:54

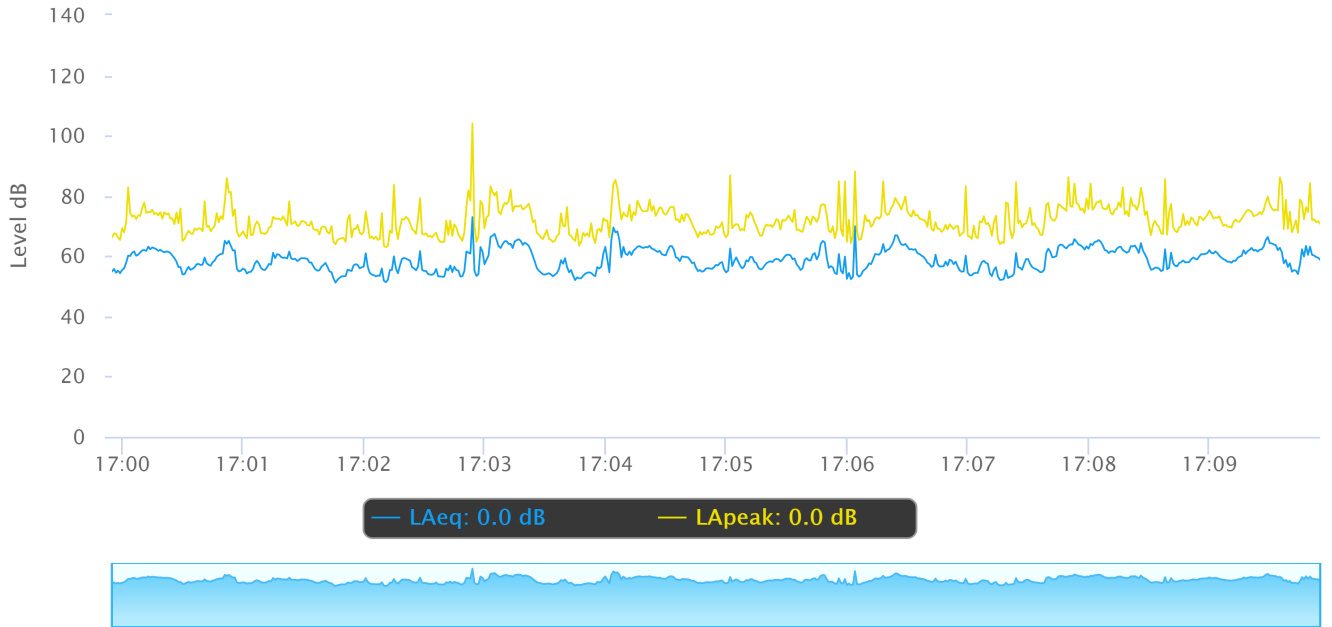
Overloads

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

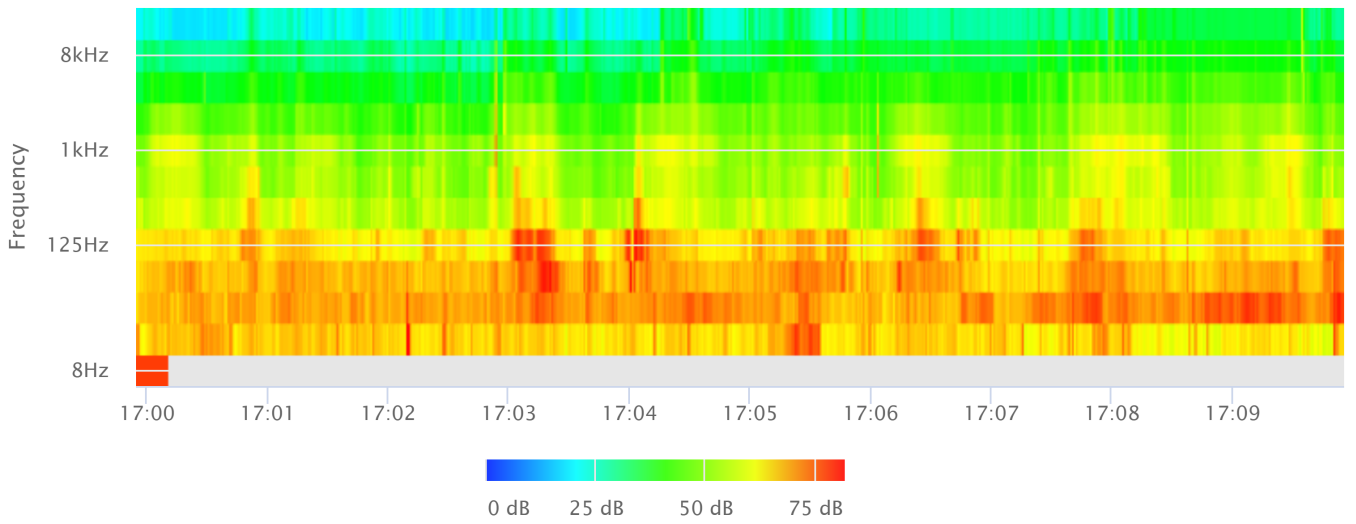
Statistics

LAS 5.0	64.5 dB
LAS 10.0	63.5 dB
LAS 33.3	60.5 dB
LAS 50.0	58.7 dB
LAS 66.6	57.0 dB
LAS 90.0	54.5 dB

Time History



OBA 1/1 Leq



File Translated: C:\Vista Env\2008\080201 - Santa Rosa Lowes\Noise Measurements\LD\7.slm1
 Model/Serial Number: 824 / A3176
 Firmware/Software Revs: 4.272 / 3.120
 Name: Vista Environmental
 Descr1: 1021 Didrikson Way
 Descr2: Laguna Beach, CA 92651
 Setup/Setup Descr: slm&rta.ssa / SLM & Real-Time Analyzer
 Location: 10' north of McDonalds drive thru speaker
 Note1:
 Note2:

Overall Any Data

Start Time: 03-Jun-2008 17:55:14
 Elapsed Time: 00:12:12.1

	A Weight	C Weight	Flat
Leq:	61.2 dBA	76.1 dBC	77.6 dBF
SEL:	89.8 dBA	104.7 dBC	106.2 dBF
Peak:	94.9 dBA	100.5 dBC	102.0 dBF
03-Jun-2008 18:02:48	03-Jun-2008 18:02:48	03-Jun-2008 18:02:48	03-Jun-2008 18:02:48
Lmax (slow):	73.6 dBA	88.5 dBC	88.7 dBF
03-Jun-2008 18:03:31	03-Jun-2008 18:03:31	03-Jun-2008 18:03:31	03-Jun-2008 18:03:31
Lmin (slow):	55.0 dBA	69.3 dBC	70.9 dBF
03-Jun-2008 17:59:22	03-Jun-2008 17:58:39	03-Jun-2008 18:00:37	03-Jun-2008 18:00:37
Lmax (fast):	76.1 dBA	91.4 dBC	91.6 dBF
03-Jun-2008 18:03:31	03-Jun-2008 18:03:31	03-Jun-2008 18:03:31	03-Jun-2008 18:03:31
Lmin (fast):	54.3 dBA	67.7 dBC	69.0 dBF
03-Jun-2008 17:59:22	03-Jun-2008 18:00:37	03-Jun-2008 18:00:37	03-Jun-2008 18:00:37
Lmax (impulse):	79.2 dBA	92.1 dBC	93.8 dBF
03-Jun-2008 18:02:48	03-Jun-2008 18:03:31	03-Jun-2008 18:02:48	03-Jun-2008 18:02:48
Lmin (impulse):	54.9 dBA	70.2 dBC	71.5 dBF
03-Jun-2008 17:59:21	03-Jun-2008 17:58:39	03-Jun-2008 18:00:36	03-Jun-2008 18:00:36

Spectra

Date: 03-Jun-2008
 Time: 17:55:14
 Run Time: 00:12:12.1

Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1	Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1
12.5	65.1		68.7		49.5		630	51.6		56.8		45.8	
16.0	65.1	69.5	65.9	71.8	53.1	57.1	800	51.2		55.0		45.4	
20.0	64.0		66.0		53.3		1000	50.9	55.5	54.4	59.4	45.6	50.1
25.0	68.9		65.4		57.8		1250	50.1		54.6		44.9	
31.5	68.1	73.5	65.6	70.5	57.7	62.3	1600	49.1		52.3		42.5	
40.0	69.1		66.2		57.1		2000	47.3	52.3	51.2	55.9	39.5	45.0
50.0	66.1		71.7		58.2		2500	45.6		49.5		37.0	
63.0	68.4	72.6	70.8	81.6	57.8	62.7	3150	44.1		48.7		34.1	
80.0	68.6		80.7		57.7		4000	42.1	47.3	46.5	51.4	32.6	37.4
100	66.7		73.7		56.0		5000	40.8		43.1		30.2	
125	66.6	70.3	86.6	87.8	53.1	58.6	6300	37.4		39.4		26.7	
160	61.7		81.0		50.6		8000	35.5	40.3	37.7	42.4	23.7	29.1
200	56.8		68.2		47.8		10000	32.2		34.6		20.7	
250	56.1	60.4	66.2	71.2	46.0	51.4	12500	29.5		31.3		13.3	
315	53.4		63.8		45.8		16000	26.1	31.9	28.1	33.5	12.7	18.9
400	52.2		62.6		45.9		20000	23.7		23.5		15.8	
500	52.1	56.7	56.8	64.4	46.2	50.7							

Ln Start Level: 15 dB
 L1.00 0.0 dBA L50.00 0.0 dBA L95.00 0.0 dBA
 L5.00 0.0 dBA L90.00 0.0 dBA L99.00 0.0 dBA

Detector: Slow
 Weighting: A
 SPL Exceedance Level 1: 85.0 dB Exceeded: 0 times
 SPL Exceedance level 2: 120 dB Exceeded: 0 times
 Peak-1 Exceedance Level: 105 dB Exceeded: 0 times
 Peak-2 Exceedance Level: 100 dB Exceeded: 0 times
 Hysteresis: 2
 Overloaded: 0 time(s)
 Paused: 0 times for 00:00:00.0

File Translated: C:\Vista Env\2008\080201 - Santa Rosa Lowes\Noise Measurements\LD\7.slmdl
 Model/Serial Number: 824 / A3176

Current Any Data

Start Time: 03-Jun-2008 17:55:14
 Elapsed Time: 00:12:12.1

	A Weight	C Weight	Flat
Leq:	61.2 dBA	76.1 dBC	77.6 dBF
SEL:	89.8 dBA	104.7 dBC	106.2 dBF
Peak:	94.9 dBA	100.5 dBC	102.0 dBF
03-Jun-2008 18:02:48	03-Jun-2008 18:02:48	03-Jun-2008 18:02:48	03-Jun-2008 18:02:48
Lmax (slow):	73.6 dBA	88.5 dBC	88.7 dBF
03-Jun-2008 18:03:31	03-Jun-2008 18:03:31	03-Jun-2008 18:03:31	03-Jun-2008 18:03:31
Lmin (slow):	55.0 dBA	69.3 dBC	70.9 dBF
03-Jun-2008 17:59:22	03-Jun-2008 17:58:39	03-Jun-2008 18:00:37	03-Jun-2008 18:00:37
Lmax (fast):	76.1 dBA	91.4 dBC	91.6 dBF
03-Jun-2008 18:03:31	03-Jun-2008 18:03:31	03-Jun-2008 18:03:31	03-Jun-2008 18:03:31
Lmin (fast):	54.3 dBA	67.7 dBC	69.0 dBF
03-Jun-2008 17:59:22	03-Jun-2008 18:00:37	03-Jun-2008 18:00:37	03-Jun-2008 18:00:37
Lmax (impulse):	79.2 dBA	92.1 dBC	93.8 dBF
03-Jun-2008 18:02:48	03-Jun-2008 18:03:31	03-Jun-2008 18:02:48	03-Jun-2008 18:02:48
Lmin (impulse):	54.9 dBA	70.2 dBC	71.5 dBF
03-Jun-2008 17:59:21	03-Jun-2008 17:58:39	03-Jun-2008 18:00:36	03-Jun-2008 18:00:36

Calibrated:	03-Jun-2008 15:40:24	Offset:	-47.5 dB
Checked:	03-Jun-2008 15:40:24	Level:	94.0 dB
Calibrator	not set	Level:	94.0 dB
Cal Records Count:	0		

Interval Records:	Disabled	Number Interval Records:	0
History Records:	Disabled	Number History Records:	0
Run/Stop Records:		Number Run/Stop Records:	2



Rooftop HVAC Unit



Gas Station



Vendor Truck Unloading



Commercial Parking Lot



Drive Thru

Stationary Noise Calculations - Receiver OFF - 1 Existing Home to West (North)

Stationary Noise Sources	Reference Home Adjacent to Project Site		
	Reference Distance	Leq	Leq
Rooftop HVAC	6	65.1	34.2
Parking Lot	5	63.1	35.1
Truck Delivery	30	54.8	40.8
Gas Dispensing Facility	5	60.3	22.2
Drive Thru Speaker	10	61.2	32.3

1 (Line Source: hard=0, soft=.5; Point Source: hard=1, soft=1.5)
(eq. N-2141.2 of TeNS)

Stationary Noise Sources	Distance from Receiver to Wall**	Distance from source to Wall	Height of Wall*	Without Wall		With Wall		Exterior Observer Height (feet)	Source Height (feet)	Source Frequency (hz)	barrier to receiver - b (all)	path difference y = a+b-c (auto)		line of sight (slope) (1 = blocked line of sight)	Barrier		
				Noise Level at Residence	Noise Level at Residence	source to barrier - a	source to receiver - c										
Rooftop HVAC	10	210	3	34	23.4	25	23.4	5	25	800	10.1980	211.1492	220.9072	0.4401	1	1.251712	-10.8
Parking Lot	10	125	6	35	28.3	3	28.3	5	3	800	10.0499	125.036	135.0148	0.0711	1	0.202116	-6.8
Truck Delivery	10	150	6	41	34.4	5	34.4	5	5	800	10.0499	150.0033	160	0.0532	1	0.15135	-6.4
Gas Dispensing Fa	10	400	6	22	15.8	3	15.8	5	3	800	10.0499	400.0112	410.0049	0.0562	1	0.159993	-6.4
Drive Thru Speaker	10	280	6	32	25.9	4	25.9	5	4	800	10.0499	280.0071	290.0017	0.0553	1	0.157281	-6.4

Combined Noise Levels 43.0 36.1

* For Rooftop HVAC height of wall represents parapet wall on proposed building. All other Sources based on existing wall on west side of Mt. Vernon Ave

** Per Appendix I-1 of the County of Riverside General Plan, the placement of the Receptor (Receiver) shall be located 10 feet behind noise barrier.

Stationary Noise Calculations - Receiver ON - 3 Proposed Home to East (North)

Stationary Noise Sources	Reference		Referenc Home Adjacent to Project Site	
	Distance	Leq	Distance	Leq
Rooftop HVAC	6	65.1	45	47.6
Parking Lot	5	63.1	90	38.0
Truck Delivery	30	54.8	110	43.5
Gas Dispensing Facility	5	60.3	300	24.7
Drive Thru Speaker	10	61.2	25	53.2

1 (Line Source: hard=0, soft=.5; Point Source: hard=1, soft=1.5)
(eq. N-2141.2 of TeNS)

Stationary Noise Sources	Distance from Receiver to Wall***	Distance from source to Wall	Height of Wall*	Without Wall		With Wall		Exterior Observer Height** (feet)	Source Frequency (hz)	barrier to receiver - b (all)	path difference y = a+b-c (auto)		line of sight (slope) (1 = blocked line of sight)	Barrier	
				Noise Level at Residence	Noise Level at Residence	source to barrier - a	source to receiver - c				fresnel				
Rooftop HVAC	10	45	3	48	30.4	25	8	800	11.1803	50.08992	57.56735	3.7029	1	10.53271	-17.164
Parking Lot	10	90	9	38	30.2	3	8	800	10.0499	90.19978	100.1249	0.1247	1	0.354793	-7.75
Truck Delivery	10	110	9	44	36.4	5	8	800	10.0499	110.0727	120.0375	0.0851	1	0.242019	-7.08
Gas Dispensing Fa	10	300	9	25	18.0	3	8	800	10.0499	300.06	310.0403	0.0695	1	0.19783	-6.72
Drive Thru Speaker	10	25	9	53	43.2	4	8	800	10.0499	25.4951	35.22783	0.3171	1	0.902096	-10
Combined Noise Levels					54.7										

* For Rooftop HVAC height of wall represents parapet wall on proposed building. All other Sources based on proposed wall between Commercial and Residential that consists of 3 foot retaining wall plus 6 foot free standing wall = 9 feet

** The exterior observer height is based on the average ear height of a person standing of 5 feet plus a 3 foot grade difference of 8 feet high.

*** Per Appendix I-1 of the County of Riverside General Plan, the placement of the Receptor (Receiver) shall be located 10 feet behind noise barrier.

Stationary Noise Calculations - Receiver ON - 4 Proposed Home to East (South)

Stationary Noise Sources	Reference Distance	Reference Leq	Home Adjacent to Project Site Distance	Home Adjacent to Project Site Leq
Rooftop HVAC	6	65.1	60	45.1
Parking Lot	5	63.1	35	46.2
Truck Delivery	30	54.8	60	48.8
Gas Dispensing Facility	5	60.3	45	41.2
Drive Thru Speaker	10	61.2	280	32.3

1 (Line Source: hard=0, soft=.5; Point Source: hard=1, soft=1.5)
(eq. N-2141.2 of TeNS)

Stationary Noise Sources	Distance from Receptor to Wall***	Distance from source to Wall	Height of Wall*	Without Wall		With Wall		Exterior Observer Height**	Source Frequency (hz)	barrier to receiver - b (all)	path difference y = a+b-c (auto)		line of sight (slope) (1 = blocked line of sight)	Barrier	
				Noise Level at Residence	Noise Level at Residence	source to barrier - a	source to receiver - c								
Rooftop HVAC	10	60	3	45	28.3	25	8	800	11.1803	63.90618	72.03471	3.0518	1	8.680696	-16.804
Parking Lot	10	35	9	46	36.5	3	8	800	10.0499	35.51056	45.27693	0.2835	1	0.806433	-9.7
Truck Delivery	10	60	9	49	41.1	5	8	800	10.0499	60.13319	70.06426	0.1188	1	0.337934	-7.65
Gas Dispensing Fa	10	45	9	41	32.2	3	8	800	10.0499	45.39824	55.22681	0.2213	1	0.629499	-9.06
Drive Thru Speaker	10	280	9	32	25.5	4	8	800	10.0499	280.0446	290.0276	0.0669	1	0.190379	-6.72
Combined Noise Levels											52.2	43.0			

* For Rooftop HVAC height of wall represents parapet wall on proposed building. All other Sources based on proposed wall between Commercial and Residential that consists of 3 foot retaining wall plus 6 foot free standing wall = 9 feet

** The exterior observer height is based on the average ear height of a person standing of 5 feet plus a 3 foot grade difference of 8 feet high.

*** Per Appendix I-1 of the County of Riverside General Plan, the placement of the Receptor (Receiver) shall be located 10 feet behind noise barrier.

APPENDIX G

FHWA Model Onsite Traffic Noise Calculation Printouts

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Road Name: Center Street
Building: 1

Project Name: Highgrove TPM 37859
Job Number: 19125

NOISE MODEL INPUTS

Highway Data		Vehicle Mix				
Average Daily Traffic:	10,400 vehicles	Day	Evening	Night	Daily	
Peak Hour Volume:	1,040 vehicles	Autos:	73.6%	13.6%	10.2%	97.4%
Vehicle Speed:	40 mph	Medium Trucks:	0.9%	0.0%	0.9%	1.8%
Near/Far Lane Distance:	12 feet	Heavy Trucks:	0.4%	0.0%	0.4%	0.7%
Site Data		Elevations				
Barrier Height:	0 feet	Barrier Base Elevation: 1,116.7 feet				
Barrier Type(Wall/Berm):	Wall	Road Elevation: 1,117.5 feet				
Site Conditions(Hard/Soft):	Hard	Noise Source Elevation above Road				
Centerline (C.L.) Dist. to Barrier:	50 feet	Autos: 0 feet				
C.L. Dist. To Observer (Backyard):	60 feet	Med Trucks: 2.3 feet				
Barrier Dist. To Observer (Backyard):	10 feet	Hvy Trucks: 8 feet				
C.L. Dist. To Observer (Structure):	60 feet	Pad Elevation: 1,116.7 feet				
Barrier Dist. To Observer (Structure):	10 feet	Observer Heights Above Pad Elevation				
Road Grade:	3.05 %	Exterior: 5 feet				
Left View:	-90 degrees	First Floor: 5.5 feet				
Right View:	90 degrees	Second Floor: 14 feet				

FHWA NOISE MODEL CALCULATIONS

	REMEL	Traffic Flow	Distance	Finite Road	Grade	Barrier Attenuation		
						Exterior	1st Flr	2nd Flr
Autos:	67.36	-1.27	-0.85	0.00	1.00	0	0	0
Med Trucks:	76.31	-18.51	-0.85	0.00	1.00	0	0	0
Hvy Trucks:	81.16	-22.46	-0.85	0.00	1.00	0	0	0

UNMITIGATED NOISE LEVELS (Backyard with topographical attenuation)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.2	64.1	62.8	56.8	65.2	65.8
Med Trucks:	58.0	36.7	29.2	38.0	44.1	44.2
Hvy Trucks:	58.8	33.5	30.1	34.7	40.9	41.0
Traffic Noise:	67.5	64.1	62.8	56.9	65.3	65.9

MITIGATED NOISE LEVELS (Backyard with sound wall)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.2	64.1	62.8	56.8	65.2	65.8
Med Trucks:	58.0	36.7	29.2	38.0	44.1	44.2
Hvy Trucks:	58.8	33.5	30.1	34.7	40.9	41.0
Traffic Noise:	67.5	64.1	62.8	56.9	65.3	65.9

MITIGATED NOISE LEVELS (First Floor)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.2	64.1	62.8	56.8	65.2	65.8
Med Trucks:	58.0	36.7	29.2	38.0	44.1	44.2
Hvy Trucks:	58.8	33.5	30.1	34.7	40.9	41.0
Traffic Noise:	67.5	64.1	62.8	56.9	65.3	65.9

MITIGATED NOISE LEVELS (Second Floor)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.1	64.0	62.7	56.7	65.1	65.7
Med Trucks:	57.9	36.6	29.1	37.9	44.0	44.1
Hvy Trucks:	58.7	33.4	30.0	34.6	40.8	40.9
Traffic Noise:	67.4	64.0	62.7	56.8	65.2	65.8

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Road Name: Center Street
Building: 2

Project Name: Highgrove TPM 37859
Job Number: 19125

NOISE MODEL INPUTS

Highway Data		Vehicle Mix				
Average Daily Traffic:	10,400 vehicles	Day	Evening	Night	Daily	
Peak Hour Volume:	1,040 vehicles	Autos:	73.6%	13.6%	10.2%	97.4%
Vehicle Speed:	40 mph	Medium Trucks:	0.9%	0.0%	0.9%	1.8%
Near/Far Lane Distance:	12 feet	Heavy Trucks:	0.4%	0.0%	0.4%	0.7%
Site Data		Elevations				
Barrier Height:	0 feet	Barrier Base Elevation: 1,115.6 feet				
Barrier Type(Wall/Berm):	Wall	Road Elevation: 1,116.0 feet				
Site Conditions(Hard/Soft):	Hard	Noise Source Elevation above Road				
Centerline (C.L.) Dist. to Barrier:	50 feet	Autos: 0 feet				
C.L. Dist. To Observer (Backyard):	60 feet	Med Trucks: 2.3 feet				
Barrier Dist. To Observer (Backyard):	10 feet	Hvy Trucks: 8 feet				
C.L. Dist. To Observer (Structure):	60 feet	Pad Elevation: 1,115.6 feet				
Barrier Dist. To Observer (Structure):	10 feet	Observer Heights Above Pad Elevation				
Road Grade:	3.05 %	Exterior: 5 feet				
Left View:	-90 degrees	First Floor: 5.5 feet				
Right View:	90 degrees	Second Floor: 14 feet				

FHWA NOISE MODEL CALCULATIONS

	REMEL	Traffic Flow	Distance	Finite Road	Grade	Barrier Attenuation		
						Exterior	1st Flr	2nd Flr
Autos:	67.36	-1.27	-0.85	0.00	1.00	-0.103	0	0
Med Trucks:	76.31	-18.51	-0.85	0.00	1.00	0	0	0
Hvy Trucks:	81.16	-22.46	-0.85	0.00	1.00	0	0	0

UNMITIGATED NOISE LEVELS (Backyard with topographical attenuation)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.1	64.0	62.7	56.7	65.1	65.7
Med Trucks:	58.0	36.7	29.2	38.0	44.1	44.2
Hvy Trucks:	58.8	33.5	30.1	34.7	40.9	41.0
Traffic Noise:	67.4	64.0	62.7	56.8	65.2	65.8

MITIGATED NOISE LEVELS (Backyard with sound wall)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.1	64.0	62.7	56.7	65.1	65.7
Med Trucks:	58.0	36.7	29.2	38.0	44.1	44.2
Hvy Trucks:	58.8	33.5	30.1	34.7	40.9	41.0
Traffic Noise:	67.4	64.0	62.7	56.8	65.2	65.8

MITIGATED NOISE LEVELS (First Floor)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.2	64.1	62.8	56.8	65.2	65.8
Med Trucks:	58.0	36.7	29.2	38.0	44.1	44.2
Hvy Trucks:	58.8	33.5	30.1	34.7	40.9	41.0
Traffic Noise:	67.5	64.1	62.8	56.9	65.3	65.9

MITIGATED NOISE LEVELS (Second Floor)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.1	64.0	62.7	56.7	65.1	65.7
Med Trucks:	57.8	36.6	29.1	37.8	44.0	44.1
Hvy Trucks:	58.7	33.4	30.0	34.6	40.8	40.9
Traffic Noise:	67.4	64.0	62.7	56.8	65.2	65.8

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Road Name: Center Street
Building: 3

Project Name: Highgrove TPM 37859
Job Number: 19125

NOISE MODEL INPUTS

Highway Data		Vehicle Mix				
Average Daily Traffic:	10,400 vehicles	Day	Evening	Night	Daily	
Peak Hour Volume:	1,040 vehicles	Autos:	73.6%	13.6%	10.2%	97.4%
Vehicle Speed:	40 mph	Medium Trucks:	0.9%	0.0%	0.9%	1.8%
Near/Far Lane Distance:	12 feet	Heavy Trucks:	0.4%	0.0%	0.4%	0.7%
Site Data		Elevations				
Barrier Height:	0 feet	Barrier Base Elevation: 1,111.7 feet				
Barrier Type(Wall/Berm):	Wall	Road Elevation: 1,113.0 feet				
Site Conditions(Hard/Soft):	Hard	Noise Source Elevation above Road				
Centerline (C.L.) Dist. to Barrier:	50 feet	Autos: 0 feet				
C.L. Dist. To Observer (Backyard):	60 feet	Med Trucks: 2.3 feet				
Barrier Dist. To Observer (Backyard):	10 feet	Hvy Trucks: 8 feet				
C.L. Dist. To Observer (Structure):	60 feet	Pad Elevation: 1,111.7 feet				
Barrier Dist. To Observer (Structure):	10 feet	Observer Heights Above Pad Elevation				
Road Grade:	3.11 %	Exterior: 5 feet				
Left View:	-90 degrees	First Floor: 5.5 feet				
Right View:	90 degrees	Second Floor: 14 feet				

FHWA NOISE MODEL CALCULATIONS

	REMEL	Traffic Flow	Distance	Finite Road	Grade	Barrier Attenuation		
						Exterior	1st Flr	2nd Flr
Autos:	67.36	-1.27	-0.85	0.00	1.00	0	0	0
Med Trucks:	76.31	-18.51	-0.85	0.00	1.00	0	0	0
Hvy Trucks:	81.16	-22.46	-0.85	0.00	1.00	0	0	0

UNMITIGATED NOISE LEVELS (Backyard with topographical attenuation)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.2	64.1	62.8	56.8	65.2	65.8
Med Trucks:	58.0	36.7	29.2	38.0	44.1	44.2
Hvy Trucks:	58.8	33.5	30.1	34.7	40.9	41.0
Traffic Noise:	67.5	64.1	62.8	56.9	65.3	65.9

MITIGATED NOISE LEVELS (Backyard with sound wall)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.2	64.1	62.8	56.8	65.2	65.8
Med Trucks:	58.0	36.7	29.2	38.0	44.1	44.2
Hvy Trucks:	58.8	33.5	30.1	34.7	40.9	41.0
Traffic Noise:	67.5	64.1	62.8	56.9	65.3	65.9

MITIGATED NOISE LEVELS (First Floor)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.2	64.1	62.8	56.8	65.2	65.8
Med Trucks:	58.0	36.7	29.2	38.0	44.1	44.2
Hvy Trucks:	58.8	33.5	30.1	34.7	40.9	41.0
Traffic Noise:	67.5	64.1	62.8	56.9	65.3	65.9

MITIGATED NOISE LEVELS (Second Floor)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.1	64.0	62.7	56.7	65.1	65.7
Med Trucks:	57.9	36.6	29.1	37.9	44.0	44.1
Hvy Trucks:	58.8	33.4	30.0	34.7	40.9	40.9
Traffic Noise:	67.4	64.0	62.7	56.8	65.2	65.8

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Road Name: Center Street
 Lot Number: 4

Project Name: Highgrove TPM 37859
 Job Number: 19125

NOISE MODEL INPUTS

Highway Data		Vehicle Mix				
Average Daily Traffic:	10,400 vehicles	Day	Evening	Night	Daily	
Peak Hour Volume:	1,040 vehicles	Autos:	73.6%	13.6%	10.2%	97.4%
Vehicle Speed:	40 mph	Medium Trucks:	0.9%	0.0%	0.9%	1.8%
Near/Far Lane Distance:	12 feet	Heavy Trucks:	0.4%	0.0%	0.4%	0.7%
Site Data		Elevations				
Barrier Height:	0 feet	Barrier Base Elevation: 1,110.0 feet				
Barrier Type(Wall/Berm):	Wall	Road Elevation: 1,111.0 feet				
Site Conditions(Hard/Soft):	Hard	Noise Source Elevation above Road				
Centerline (C.L.) Dist. to Barrier:	50 feet	Autos: 0 feet				
C.L. Dist. To Observer (Backyard):	60 feet	Med Trucks: 2.3 feet				
Barrier Dist. To Observer (Backyard):	10 feet	Hvy Trucks: 8 feet				
C.L. Dist. To Observer (Structure):	60 feet	Pad Elevation: 1,110.0 feet				
Barrier Dist. To Observer (Structure):	10 feet	Observer Heights Above Pad Elevation				
Road Grade:	3.11 %	Exterior: 5 feet				
Left View:	-90 degrees	First Floor: 5.5 feet				
Right View:	90 degrees	Second Floor: 14 feet				

FHWA NOISE MODEL CALCULATIONS

	REMEL	Traffic Flow	Distance	Finite Road	Grade	Barrier Attenuation		
						Exterior	1st Flr	2nd Flr
Autos:	67.36	-1.27	-0.85	0.00	1.00	0	0	0
Med Trucks:	76.31	-18.51	-0.85	0.00	1.00	0	0	0
Hvy Trucks:	81.16	-22.46	-0.85	0.00	1.00	0	0	0

UNMITIGATED NOISE LEVELS (Backyard with topographical attenuation)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.2	64.1	62.8	56.8	65.2	65.8
Med Trucks:	58.0	36.7	29.2	38.0	44.1	44.2
Hvy Trucks:	58.8	33.5	30.1	34.7	40.9	41.0
Traffic Noise:	67.5	64.1	62.8	56.9	65.3	65.9

MITIGATED NOISE LEVELS (Backyard with sound wall)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.2	64.1	62.8	56.8	65.2	65.8
Med Trucks:	58.0	36.7	29.2	38.0	44.1	44.2
Hvy Trucks:	58.8	33.5	30.1	34.7	40.9	41.0
Traffic Noise:	67.5	64.1	62.8	56.9	65.3	65.9

MITIGATED NOISE LEVELS (First Floor)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.2	64.1	62.8	56.8	65.2	65.8
Med Trucks:	58.0	36.7	29.2	38.0	44.1	44.2
Hvy Trucks:	58.8	33.5	30.1	34.7	40.9	41.0
Traffic Noise:	67.5	64.1	62.8	56.9	65.3	65.9

MITIGATED NOISE LEVELS (Second Floor)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.1	64.0	62.7	56.7	65.1	65.7
Med Trucks:	57.9	36.6	29.1	37.9	44.0	44.1
Hvy Trucks:	58.7	33.4	30.0	34.6	40.8	40.9
Traffic Noise:	67.4	64.0	62.7	56.8	65.2	65.8

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Road Name: Center Street
Lot Number: 5

Project Name: Highgrove TPM 37859
Job Number: 19125

NOISE MODEL INPUTS

Highway Data		Vehicle Mix				
Average Daily Traffic:	10,400 vehicles	Day	Evening	Night	Daily	
Peak Hour Volume:	1,040 vehicles	Autos:	73.6%	13.6%	10.2%	97.4%
Vehicle Speed:	40 mph	Medium Trucks:	0.9%	0.0%	0.9%	1.8%
Near/Far Lane Distance:	12 feet	Heavy Trucks:	0.4%	0.0%	0.4%	0.7%
Site Data		Elevations				
Barrier Height:	0 feet	Barrier Base Elevation: 1,109.5 feet				
Barrier Type(Wall/Berm):	Wall	Road Elevation: 1,108.0 feet				
Site Conditions(Hard/Soft):	Hard	Noise Source Elevation above Road				
Centerline (C.L.) Dist. to Barrier:	50 feet	Autos: 0 feet				
C.L. Dist. To Observer (Backyard):	60 feet	Med Trucks: 2.3 feet				
Barrier Dist. To Observer (Backyard):	10 feet	Hvy Trucks: 8 feet				
C.L. Dist. To Observer (Structure):	60 feet	Pad Elevation: 1,109.5 feet				
Barrier Dist. To Observer (Structure):	10 feet	Observer Heights Above Pad Elevation				
Road Grade:	3.11 %	Exterior: 5 feet				
Left View:	-90 degrees	First Floor: 5.5 feet				
Right View:	90 degrees	Second Floor: 14 feet				

FHWA NOISE MODEL CALCULATIONS

	REMEL	Traffic Flow	Distance	Finite Road	Grade	Barrier Attenuation		
						Exterior	1st Flr	2nd Flr
Autos:	67.36	-1.27	-0.86	0.00	1.00	-0.133	0	0
Med Trucks:	76.31	-18.51	-0.86	0.00	1.00	0	0	0
Hvy Trucks:	81.16	-22.46	-0.86	0.00	1.00	0	0	0

UNMITIGATED NOISE LEVELS (Backyard with topographical attenuation)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.1	64.0	62.7	56.6	65.1	65.7
Med Trucks:	57.9	36.7	29.2	37.9	44.1	44.2
Hvy Trucks:	58.8	33.5	30.1	34.7	40.9	41.0
Traffic Noise:	67.4	64.0	62.7	56.7	65.1	65.7

MITIGATED NOISE LEVELS (Backyard with sound wall)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.1	64.0	62.7	56.6	65.1	65.7
Med Trucks:	57.9	36.7	29.2	37.9	44.1	44.2
Hvy Trucks:	58.8	33.5	30.1	34.7	40.9	41.0
Traffic Noise:	67.4	64.0	62.7	56.7	65.1	65.7

MITIGATED NOISE LEVELS (First Floor)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.2	64.1	62.8	56.8	65.2	65.8
Med Trucks:	57.9	36.7	29.2	37.9	44.1	44.1
Hvy Trucks:	58.8	33.5	30.1	34.7	40.9	41.0
Traffic Noise:	67.5	64.1	62.8	56.9	65.2	65.9

MITIGATED NOISE LEVELS (Second Floor)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.1	64.0	62.7	56.7	65.1	65.7
Med Trucks:	57.8	36.6	29.1	37.8	44.0	44.0
Hvy Trucks:	58.7	33.4	30.0	34.6	40.8	40.9
Traffic Noise:	67.3	64.0	62.7	56.7	65.1	65.7

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Road Name: Mt Vernon Avenue
Lot Number: 15

Project Name: Highgrove TPM 37859
Job Number: 19125

NOISE MODEL INPUTS

Highway Data		Vehicle Mix				
Average Daily Traffic:	20,700 vehicles	Day	Evening	Night	Daily	
Peak Hour Volume:	2,070 vehicles	Autos:	63.8%	13.1%	15.3%	92.1%
Vehicle Speed:	40 mph	Medium Trucks:	3.5%	0.6%	1.8%	6.0%
Near/Far Lane Distance:	36 feet	Heavy Trucks:	1.1%	0.1%	0.8%	1.9%
Site Data		Elevations				
Barrier Height:	5 feet	Barrier Base Elevation: 1,102.3 feet				
Barrier Type(Wall/Berm):	Wall	Road Elevation: 1,095.5 feet				
Site Conditions(Hard/Soft):	Hard	Noise Source Elevation above Road				
Centerline (C.L.) Dist. to Barrier:	70 feet	Autos: 0 feet				
C.L. Dist. To Observer (Backyard):	80 feet	Med Trucks: 2.3 feet				
Barrier Dist. To Observer (Backyard):	10 feet	Hvy Trucks: 8 feet				
C.L. Dist. To Observer (Structure):	75 feet	Pad Elevation: 1,102.3 feet				
Barrier Dist. To Observer (Structure):	5 feet	Observer Heights Above Pad Elevation				
Road Grade:	0.90 %	Exterior: 5 feet				
Left View:	-90 degrees	First Floor: 5.5 feet				
Right View:	90 degrees	Second Floor: 14 feet				

FHWA NOISE MODEL CALCULATIONS

	REMEL	Traffic Flow	Distance	Finite Road	Grade	Barrier Attenuation		
						Exterior	1st Flr	2nd Flr
Autos:	67.36	1.48	-2.05	0.00	0.00	-7.01	-5.2	0
Med Trucks:	76.31	-10.41	-2.05	0.00	0.00	-6.72	-4.9	0
Hvy Trucks:	81.16	-15.30	-2.05	0.00	0.00	-5.3	-4.8	0

UNMITIGATED NOISE LEVELS (Backyard with topographical attenuation)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	63.9	63.0	58.9	66.4	66.9
Med Trucks:	63.7	48.4	47.0	46.7	53.4	53.6
Hvy Trucks:	63.8	43.3	39.1	43.2	49.5	49.6
Traffic Noise:	69.7	64.0	63.1	59.3	66.7	67.2

MITIGATED NOISE LEVELS (Backyard with sound wall)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.8	57.0	56.2	52.1	59.6	60.1
Med Trucks:	57.1	41.8	40.4	40.1	46.8	47.0
Hvy Trucks:	58.5	38.0	33.8	37.9	44.2	44.3
Traffic Noise:	63.4	57.2	56.3	52.5	59.9	60.4

MITIGATED NOISE LEVELS (First Floor)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.9	59.1	58.3	54.2	61.7	62.2
Med Trucks:	59.2	43.9	42.5	42.2	48.9	49.1
Hvy Trucks:	59.3	38.8	34.6	38.6	45.0	45.1
Traffic Noise:	65.1	59.3	58.4	54.6	62.0	62.5

MITIGATED NOISE LEVELS (Second Floor)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	64.2	63.3	59.3	66.8	67.3
Med Trucks:	64.0	48.7	47.3	47.0	53.7	53.9
Hvy Trucks:	64.0	43.4	39.3	43.3	49.7	49.8
Traffic Noise:	70.0	64.4	63.5	59.6	67.1	67.5

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Road Name: Center Street
Lot Number: 36

Project Name: Highgrove TPM 37859
Job Number: 19125

NOISE MODEL INPUTS

Highway Data		Vehicle Mix				
Average Daily Traffic:	10,400 vehicles	Day	Evening	Night	Daily	
Peak Hour Volume:	1,040 vehicles	Autos:	73.6%	13.6%	10.2%	97.4%
Vehicle Speed:	40 mph	Medium Trucks:	0.9%	0.0%	0.9%	1.8%
Near/Far Lane Distance:	12 feet	Heavy Trucks:	0.4%	0.0%	0.4%	0.7%
Site Data		Elevations				
Barrier Height:	0 feet	Barrier Base Elevation: 1,117.2 feet				
Barrier Type(Wall/Berm):	Wall	Road Elevation: 1,120.0 feet				
Site Conditions(Hard/Soft):	Hard	Noise Source Elevation above Road				
Centerline (C.L.) Dist. to Barrier:	50 feet	Autos: 0 feet				
C.L. Dist. To Observer (Backyard):	60 feet	Med Trucks: 2.3 feet				
Barrier Dist. To Observer (Backyard):	10 feet	Hvy Trucks: 8 feet				
C.L. Dist. To Observer (Structure):	60 feet	Pad Elevation: 1,117.2 feet				
Barrier Dist. To Observer (Structure):	10 feet	Observer Heights Above Pad Elevation				
Road Grade:	3.05 %	Exterior: 5 feet				
Left View:	-90 degrees	First Floor: 5.5 feet				
Right View:	90 degrees	Second Floor: 14 feet				

FHWA NOISE MODEL CALCULATIONS

	REMEL	Traffic Flow	Distance	Finite Road	Grade	Barrier Attenuation		
						Exterior	1st Flr	2nd Flr
Autos:	67.36	-1.27	-0.84	0.00	1.00	0	0	0
Med Trucks:	76.31	-18.51	-0.84	0.00	1.00	0	0	0
Hvy Trucks:	81.16	-22.46	-0.84	0.00	1.00	0	0	0

UNMITIGATED NOISE LEVELS (Backyard with topographical attenuation)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.2	64.1	62.8	56.8	65.2	65.8
Med Trucks:	58.0	36.7	29.2	38.0	44.1	44.2
Hvy Trucks:	58.9	33.5	30.1	34.8	41.0	41.0
Traffic Noise:	67.5	64.1	62.8	56.9	65.3	65.9

MITIGATED NOISE LEVELS (Backyard with sound wall)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.2	64.1	62.8	56.8	65.2	65.8
Med Trucks:	58.0	36.7	29.2	38.0	44.1	44.2
Hvy Trucks:	58.9	33.5	30.1	34.8	41.0	41.0
Traffic Noise:	67.5	64.1	62.8	56.9	65.3	65.9

MITIGATED NOISE LEVELS (First Floor)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.2	64.1	62.8	56.8	65.2	65.8
Med Trucks:	58.0	36.7	29.2	38.0	44.1	44.2
Hvy Trucks:	58.9	33.5	30.1	34.8	41.0	41.0
Traffic Noise:	67.5	64.1	62.8	56.9	65.3	65.9

MITIGATED NOISE LEVELS (Second Floor)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.2	64.0	62.7	56.7	65.1	65.8
Med Trucks:	57.9	36.6	29.1	37.9	44.1	44.1
Hvy Trucks:	58.8	33.4	30.0	34.7	40.9	41.0
Traffic Noise:	67.4	64.1	62.7	56.8	65.2	65.8