



SOURCE: Google Maps

Figure 1
Project Location Map

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. They are adjusted to reflect only those frequencies which are audible to the human ear.

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 peak traffic hour 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 City of Riverside relies on the CNEL 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). 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 as most ground surfaces between the source and receptor will provide some noise absorption.

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 vibration decibels (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 median, 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 City 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). Transit noise is regulated by the federal Urban Mass Transit Administration (UMTA), 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 Impact Assessment Manual* (FTA Manual), prepared by the FTA, September 2018, is the only guidance document from a government agency that has defined 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		
	Project Only	Combined	Noise Exposure Increase
45	51	52	+7
50	53	55	+5
55	55	58	+3
60	57	62	+2
65	60	66	+1
70	64	71	+1
75	65	75	0

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 City 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 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.

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.

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.

Caltrans prepared the *Transportation and Construction Vibration Guidance Manual*, April 2020. The Manual 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. The Manual also found that vibration may

potentially damage to commercial buildings at 2.0 inch per second PPV and older residential structures at 0.5 inch per second PPV.

4.3 Local Regulations

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

City of Riverside General Plan

The following applicable goals and policies to the proposed project are from the Noise Element of the General Plan.

Objective N-1

Minimize noise levels from point sources throughout the community and, wherever possible, mitigate the effects of noise to provide a safe and healthful environment.

Policies

- N-1.1** Continue to enforce noise abatement and control measures particularly within residential neighborhoods.
- N-1.2** Require the inclusion of noise-reducing design features in development consistent with standards in Figure N-10 (Noise/Land Use Compatibility Criteria) [see Figure 3], Title 24 California Code of Regulations and Title 7 of the Municipal Code.
- N-1.3** Enforce the City of Riverside Noise Control Code to ensure that stationary noise and noise emanating from construction activities, private developments/residences and special events are minimized.

Objective N-4

Minimize ground transportation-related noise impacts.

Policies

- N-4.1** Ensure that noise impacts generated by vehicular sources are minimized through the use of noise reduction features (e.g., earthen berms, landscaped walls, lowered streets, improved technology).

City of Riverside Municipal Code

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

Section 7.25.010 Exterior sound level limits

A. Unless a variance has been granted as provided in this chapter, it shall be unlawful for any person to cause or allow the creation of any noise which exceeds the following:

1. The exterior noise standard of the applicable land use category, up to five decibels, for a cumulative period of more than thirty minutes in any hour; or
2. The exterior noise standard of the applicable land use category, plus five decibels, for a cumulative period of more than fifteen minutes in any hour; or

3. The exterior noise standard of the applicable land use category, plus ten decibels, for a cumulative period of more than five minutes in any hour; or
4. The exterior noise standard of the applicable land use category, plus fifteen decibels, for a cumulative period of more than one minute in any hour; or
5. The exterior noise standard of the applicable land use category, plus twenty decibels or the maximum measured ambient noise level, for any period of time.

B. If the measured ambient noise level exceeds that permissible within any of the first four noise limit categories, the allowable noise exposure standard shall be increased in five decibel increments in each category as appropriate to encompass the ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

D. Where the intruding noise source is an air-conditioning unit or refrigeration system which was installed prior to the effective date of this chapter, the exterior noise level when measured at the property line shall not exceed sixty dBA for units installed before 1-1-80 and fifty-five dBA for units installed after 1-1-80.

Table B – City of Riverside Exterior Noise Standards

Land Use Category	Time Period	Noise Level
Residential	Night (10 p.m. to 7 a.m.)	45 dBA
	Day (7 a.m. to 10 p.m.)	55 dBA
Office/Commercial	Any time	65 dBA
Industrial	Any time	70 dBA
Community support	Any time	60 dBA
Public recreation facility	Any time	65 dBA
Nonurban	Any time	70 dBA

Source: City of Riverside Municipal Code, Section 7.25.010 Table 7.25.010A.

Table C – City of Riverside Land Use Category/Zoning Matrix

Land Use Category	Underlying Zone
Residential	RE, RA-5 RR, RC, R-1-1/2 acre, R-1-1300, R-1-10500, R-1-8500, R-1-7000, R-3-2500, R-3-4000, R-3-3000, R-3-2000, R-3-1500, R-4
Office/Commercial	O, CRC, CR-NC, CR, CG
Industrial	BMP, I, AIR
Community support	Any permitted zone
Nonurban	Any permitted zone.

Source: City of Riverside Municipal Code, Section 7.25.010 Table 7.25.010B.

Section 7.35.010 General noise regulations

A. Notwithstanding the sound level meter standards described in this ordinance, it is nonetheless unlawful for any person to make, continue, or cause to be made or continued any disturbing, excessive or offensive noise which causes discomfort or annoyance to reasonable persons of normal sensitivity. The factors which should be considered in determining whether a violation of this section exists, including the following:

1. The sound level of the objectionable noise.
2. The sound level of the ambient noise.
3. The proximity of the noise to residential sleeping facilities.
4. The zoning of the area.
5. The population density of the area.
6. The time of day or night.
7. The duration of the noise.
8. Whether the noise is recurrent, intermittent, or constant.
9. Whether the noise is produced by a commercial or noncommercial activity.
10. Whether the nature of the noise is usual or unusual.
11. Whether the noise is natural or unnatural.

B. It is unlawful for any person to make, continue, or cause to be made or continued any disturbing, excessive or offensive noise which causes discomfort or annoyance to reasonable persons of normal sensitivity. The following acts, among others, are declared to be disturbing, excessive and offensive noises in violation of this section:

5. Construction: Operating or causing the operation of any tools or equipment used in construction, drilling, repair, alteration, grading or demolition work between the hours of 7:00 p.m. and 7:00 a.m. on week days and between 5:00 p.m. and 8:00 a.m. on Saturdays or at any time on Sunday or federal holidays.

Section 7.35.020 Exemptions

The following activities shall be exempt from the provisions of this title:

G. Noise sources associated with construction, repair, remodeling, or grading of any real property; provided a permit has been obtained from the City are required; and provided said activities do not take place between the hours of 7:00 p.m. and 7:00 a.m. on weekdays, between the hours of 5:00 p.m. and 8:00 a.m. on Saturdays, or at any time on Sunday or a federal holiday.

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 Van Buren Boulevard that is adjacent to the northeast side of the project site and from Primrose Drive that is adjacent to the northwest side of the project site. In addition, State Route 91 contributes to the noise environment that is as near as 760 feet southeast of the project site. The following describes the measurement procedures, measurement locations, noise measurement results, and the modeling of the existing noise environment.

5.1 Noise Measurement Equipment

The noise measurements were taken using two 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 two sound level meters. The sound level meters and microphones were mounted on fences, 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 measurements of the current noise levels on the shared property lines with the single-family homes to the southwest. The noise measurement sites were selected to provide a representative sampling of the existing noise levels in the project vicinity. Descriptions of the noise monitoring sites are provided below in Table D and are shown in Figure 3. 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 11:36 a.m. on Tuesday, May 21, 2024 and 11:41 a.m. on Wednesday, May 22, 2024. At the start of the noise measurements, the sky was hazy, the temperature was 71 degrees Fahrenheit, the humidity was 60 percent, barometric pressure was 29.04 inches of mercury, and the wind was blowing around two miles per hour. Overnight, the temperature dropped to 54 degrees Fahrenheit and the humidity peaked at 91 percent. At the conclusion of the noise measurements, the sky was partly cloudy, the temperature was 66 degrees Fahrenheit, the humidity was 62 percent, barometric pressure was 29.08 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 D. The measured sound pressure levels in dBA have been used to calculate the minimum and maximum L_{eq} averaged over 1-hour intervals. Table D also shows the L_{eq} , L_{max} , and CNEL, based on the entire measurement time. The CNEL was calculated through use of the hourly L_{eq} 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. Figure 4 shows a graph of the 24-hour noise measurements.

Table D – Existing (Ambient) Noise Level Measurements

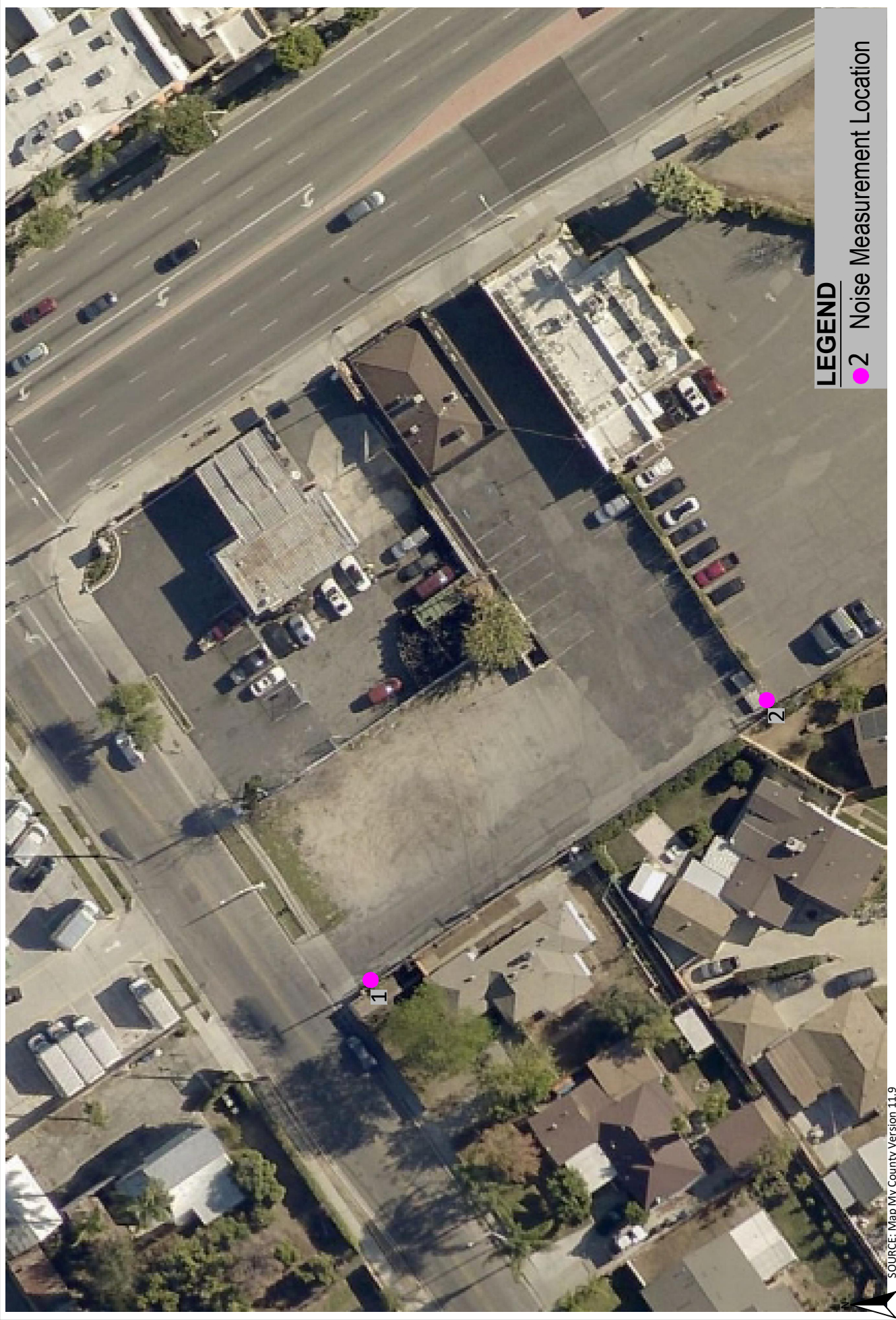
Site No.	Site Description	Average (dBA L _{eq})		1-hr Average (dBA L _{eq} /Time)		24-hour dBA CNEL
		Daytime ¹	Nighttime ²	Minimum	Maximum	
1	Located on a fence near the northwest corner of the project site, approximately 35 feet southeast of Primrose Drive centerline.	61.8	57.4	50.5 2:35 a.m.	65.3 2:19 p.m.	65.1
2	Located on a fence near the southwest corner of the project site, approximately 260 feet southwest of Van Buren Boulevard centerline.	58.3	57.2	51.7 2:39 a.m.	61.3 9:54 p.m.	64.1

Notes:

¹ Daytime defined as 7:00 a.m. to 10:00 p.m. (Section 7.25.010 of the Municipal Code)

² Nighttime define as 10:00 p.m. to 7:00 a.m. (Section 7.25.010 of the Municipal Code)

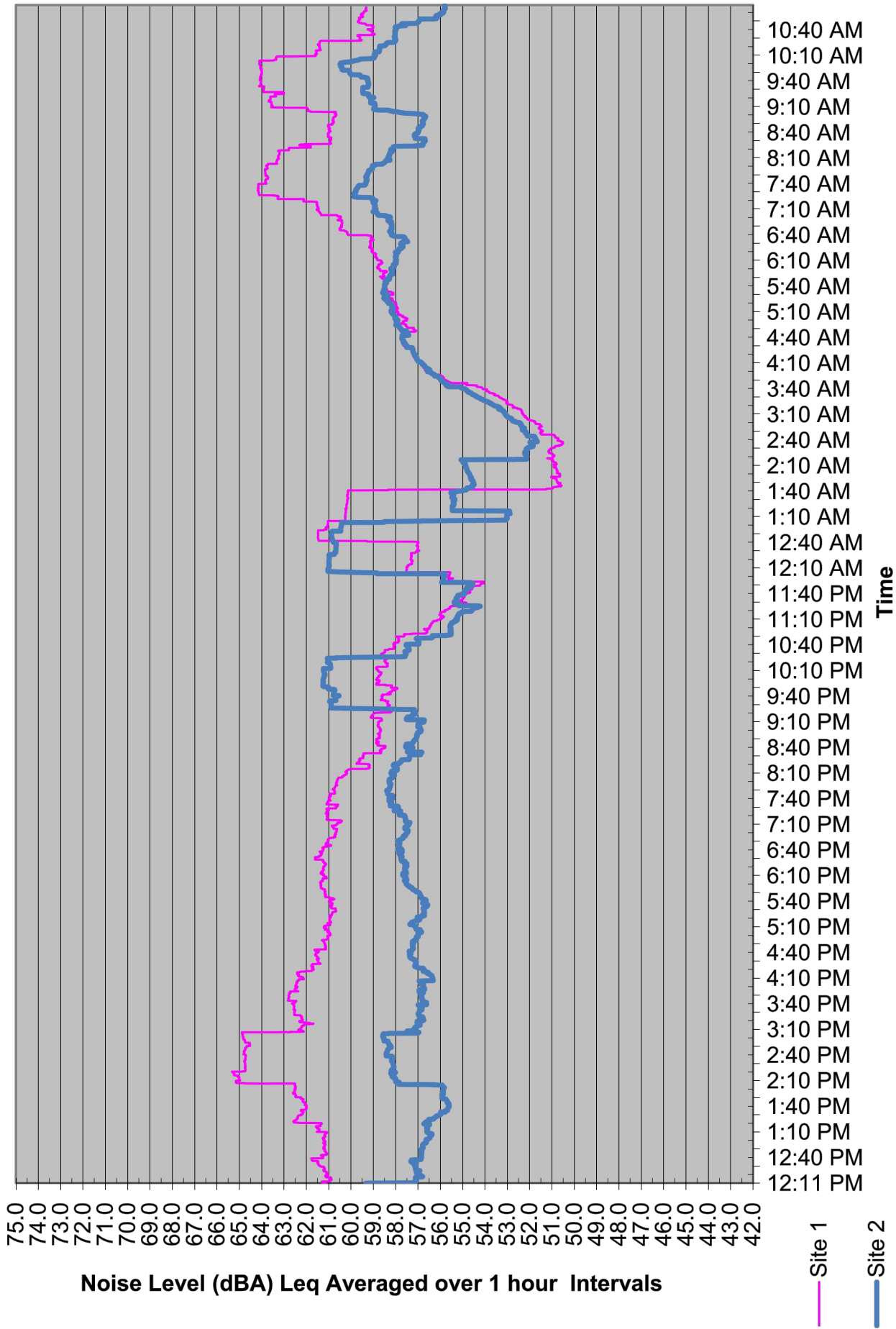
Source: Noise measurements taken between Tuesday, May 21, 2024 and Wednesday, May 22, 2024.



SOURCE: Map My County Version 11.9



Figure 3
Field Noise Monitoring Locations



SOURCE: Two Larson Davis Model LXT1 Type 1 Sound Level Meters.



Figure 4
Field Noise Measurements Graph

6.0 MODELING PARAMETERS AND ASSUMPTIONS

6.1 Operational Noise Modeling

The proposed project would consist of the development of a 7-Eleven convenience store with a 12 vehicle fuel position gas station. Operation of the proposed project would generate additional vehicle trips on the nearby roads as well as create noise onsite, which have been modeled separately and are described below.

FHWA Roadway Noise Model Methodology

The proposed project would increase vehicle trips on the nearby roadways, which has the potential to result in an increase in traffic noise to the nearby roadways. The project impacts to the offsite roadways were analyzed through use of the FHWA Traffic Noise Prediction Model - FHWA-RD-77-108 (FHWA Model) as detailed in the *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, prepared by Caltrans, September 2013. 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).

The following section provides a discussion of the software and modeling input parameters used in this analysis and Appendix C includes the FHWA Model printouts.

FHWA Model Traffic Noise Prediction Model Inputs

The roadway parameters used for this study are presented in Table E. The roadway classifications are based on the City'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 to rural environment and vegetation exists along the sides of most of the analyzed roadways, soft site conditions were modeled.

Table E – FHWA Model Roadway Parameters

Roadway	Segment	General Plan Classification	Vehicle Speed (MPH)	Distance to Nearest Receptor ¹ (feet)
Van Buren Boulevard	North of Primrose Drive	Special	40	65
Van Buren Boulevard	South of Project Driveway 2	Special	40	115
Van Buren Boulevard	South of Indiana Avenue	Special	40	95
Primrose Drive	West of Project Driveway 1	Collector	25	40
Andrew Street	East of Van Buren Boulevard	Collector	25	55

Notes:

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

Source: Urban Crossroads, 2024; and City of Riverside, 2007.

The average daily traffic (ADT) volumes were obtained from the *Van Buren 7-Eleven Traffic Analysis* (Traffic Analysis), prepared by Urban Crossroads, July 16, 2024. The ADT volumes used in this analysis are shown in Table F.

Table F – FHWA Model Average Daily Traffic Volumes

Roadway	Segment	Average Daily Traffic Volumes					
		Existing	Existing + Project	2027	2027 + Project	2045	205 + Project
Van Buren Boulevard	North of Primrose Drive	34,900	35,220	44,800	45,120	49,300	49,620
Van Buren Boulevard	South of Project Driveway 2	42,500	42,820	54,100	54,420	59,500	59,820
Van Buren Boulevard	South of Indiana Avenue	44,300	44,380	48,100	48,180	53,000	53,080
Primrose Drive	West of Project Driveway 1	8,200	8,280	10,300	10,380	11,300	11,380
Andrew Street	East of Van Buren Boulevard	4,900	4,980	5,800	5,880	6,700	6,780

Source: Urban Crossroads, 2024.

The vehicle mixes used in the FHWA-RD-77-108 Model is shown in Table G and is based on the typical vehicle mixes observed for collector and arterial roadways in southern California. The vehicle mix provides the hourly distribution percentages of automobiles, medium trucks, and heavy trucks for input into the FHWA model.

Table G – 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.)	
Collector				
Automobiles	73.6%	13.6%	10.2%	97.4%
Medium Trucks	0.9%	0.9%	0.0%	1.8%
Heavy Trucks	0.4%	0.0%	0.4%	0.7%
Special				
Automobiles	69.5%	12.9%	9.6%	92.0%
Medium Trucks	1.4%	0.1%	1.5%	3.0%
Heavy Trucks	2.4%	0.1%	2.5%	5.0%

Source: Vista Environmental.

FHWA Model Source Assumptions

To assess the roadway noise generation in a uniform manner, all vehicles are analyzed 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.

Onsite Noise Modeling Methodology

The operation of the 7-Eleven convenience store and gas station is anticipated to create onsite noise from the operation of rooftop mechanical equipment, parking lots, delivery trucks, gas pumps, and air/water machine. Reference noise measurements were taken of each of these noise sources and the reference measurement are presented in Table H and the reference noise measurement data printouts are included in Appendix D.

Table H – Reference Noise Level Measurements

Noise Source.	Location	Distance (Noise Meter to Noise Source) feet	Noise Measurement (dBA)	
			Leq	Lmax
Rooftop Equipment	On roof of The Motorcycle Company	6	66.6	67.6
Parking Lot	Middle of Bear Mountain Golf Course Parking Lot	5	49.4	63.2
Truck Delivery	Truck Loading Area of Fresno Walmart	30	54.8	67.9
Gas Dispensing	Next to fuel pump at Chevron Gas Station (4260 Riverwalk Pkwy)	5	60.3	72.3
Air/Water Dispenser	Next to Air/Water Dispenser at Laguna Beach Mobil	5	66.9	73.6

Source: Vista Environmental (see Appendix D)

The noise level at the nearest homes was calculated through use of standard geometric spreading of noise, which provides an attenuation rate of 6 dB per doubling the distance between source and receptor. In order to account for the noise reduction provided by the existing 6-foot high sound wall on the southwest property line, the wall attenuation algorithms 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 E.

6.2 Vibration Modeling

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 slight damage at the highest levels. Table I gives approximate vibration levels for particular construction activities. The data in Table I provides a reasonable estimate for a wide range of soil conditions.

Table I – Vibration Source Levels for Construction Equipment

Equipment		Peak Particle Velocity (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, 2018.

The construction-related vibration impacts have been calculated through the vibration levels shown above in Table I and through typical vibration propagation rates. The equipment assumptions were based on the off-road construction equipment list be construction phase utilized in the *Air Quality, Energy, and Greenhouse Gas Emissions Impact Analysis Van Buren 7-Eleven Project* (Air Quality Analysis), prepared by Vista Environmental, July 19, 2024.

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 City standards.

Construction-Related Noise

The construction activities for the proposed project are anticipated to include demolition of the two commercial buildings and associated parking lots, site preparation and grading of the project site, building construction of a 3,048 square foot 7-Eleven convenience store with a 12 vehicle fuel position gas station, paving of the onsite parking areas and driveways, and application of architectural coatings. 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 consist of residents at the single-family homes located as near as 20 feet southwest of the project site as well as patrons of the office building that is adjacent to the southeast side of the project site.

Section 7.35.020(G) of the City's Municipal Code exempts all construction-related noise from permitted construction activities that take place between the hours of 7:00 a.m. and 7:00 p.m. on weekdays and 8:00 a.m. and 5:00 p.m. on Saturdays. Section 7.35.020(G) also prohibits all construction activities on Sundays and federal holidays. Therefore, through adherence to allowable construction times provided in 7.35.020(G) of the Municipal Code, the construction activities for the proposed project would not create a substantial temporary increase in ambient noise levels that are in excess of applicable noise standards. Impacts would be less than significant.

Operational-Related Noise

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 noise sources to the nearby sensitive receptors. The noise impacts created from project generated vehicular traffic on the nearby roadways and from onsite noise sources to the nearby homes have been analyzed separately below.

Roadway Vehicular Noise Impact to Nearby Sensitive Receptors

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.

Objective N-4 of the City’s General Plan Noise Element, requires the City to minimize noise impacts from transportation-related noise sources. However neither the General Plan nor the CEQA Guidelines define 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.

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 noise calculation spreadsheets are provided in Appendix C. The proposed project’s offsite traffic noise impacts have been analyzed for the existing year, opening year 2026, and cumulative year 2045 conditions, which are discussed below.

Existing Year Conditions

The proposed project’s potential offsite traffic noise impacts have been calculated through a comparison of the existing year scenario to the existing with project scenario. The results of this comparison are shown in Table J.

Table J – Existing Year Project Traffic Noise Contributions

Roadway	Segment	dBA CNEL at Nearest Receptor ¹			Increase Threshold ²
		Existing	Existing Plus Project	Project Contribution	
Van Buren Boulevard	North of Primrose Drive	69.4	69.4	+0.0	+1 dBA
Van Buren Boulevard	South of Project Driveway 2	65.7	65.7	+0.0	+1 dBA
Van Buren Boulevard	South of Indiana Avenue	67.3	67.3	+0.0	+1 dBA
Primrose Drive	West of Project Driveway 1	59.2	59.2	+0.0	+3 dBA
Andrew Street	East of Van Buren Boulevard	54.8	54.8	+0.0	+3 dBA

Notes:

¹ Distance to nearest sensitive receptors shown in Table E, 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 J shows that the proposed project’s permanent noise increases to the nearby homes from the generation of additional vehicular traffic would not exceed the roadway noise 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.

Opening Year 2026 Conditions

The proposed project’s potential offsite traffic noise impacts have been calculated through a comparison of the opening year 2026 scenario to the opening year 2026 with project scenario. The results of this comparison are shown in Table K.

Table K – Opening Year 2026 Project Traffic Noise Contributions

Roadway	Segment	dBA CNEL at Nearest Receptor ¹			Increase Threshold ²
		2026 No Project	2026 Plus Project	Project Contribution	
Van Buren Boulevard	North of Primrose Drive	70.5	70.5	+0.0	+1 dBA
Van Buren Boulevard	South of Project Driveway 2	66.7	66.8	+0.1	+1 dBA
Van Buren Boulevard	South of Indiana Avenue	67.6	67.6	+0.0	+1 dBA
Primrose Drive	West of Project Driveway 1	60.2	60.2	+0.0	+3 dBA
Andrew Street	East of Van Buren Boulevard	55.5	55.6	+0.1	+3 dBA

Notes:

¹ Distance to nearest sensitive receptors shown in Table E, 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 K shows that the proposed project’s permanent noise increases to the nearby homes from the generation of additional vehicular traffic would not exceed the roadway noise increase thresholds detailed above. Therefore, the proposed project would not result in a substantial permanent increase in ambient noise levels for the opening year 2026 conditions. Impacts would be less than significant.

Cumulative Year 2045 Conditions

The proposed project’s potential offsite traffic noise impacts have been calculated through a comparison of the cumulative year 2045 scenario to the cumulative year 2045 with project scenario. The results of this comparison are shown in Table L.

Table L – Cumulative Year 2045 Project Traffic Noise Contributions

Roadway	Segment	dBA CNEL at Nearest Receptor ¹			Increase Threshold ²
		2045 No Project	2045 Plus Project	Project Contribution	
Van Buren Boulevard	North of Primrose Drive	70.9	70.9	+0.0	+1 dBA
Van Buren Boulevard	South of Project Driveway 2	67.1	67.2	+0.1	+1 dBA
Van Buren Boulevard	South of Indiana Avenue	68.1	68.1	+0.0	+1 dBA
Primrose Drive	West of Project Driveway 1	60.7	60.7	+0.0	+3 dBA
Andrew Street	East of Van Buren Boulevard	56.2	56.3	+0.1	+3 dBA

Notes:

¹ Distance to nearest sensitive receptors shown in Table E, 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 L shows that the proposed project’s permanent noise increases to the nearby homes from the generation of additional vehicular traffic would not exceed the roadway noise increase thresholds detailed

above. Therefore, the proposed project would not result in a substantial permanent increase in ambient noise levels for the cumulative year 2045 conditions. Impacts would be less than significant.

Onsite Noise Impacts

The operation of the 7-Eleven convenience store and gas station would create onsite noise from the operation of rooftop mechanical equipment, parking lots, delivery trucks, gas pumps, and air/water machine.

Section 7.25.010(B) of the City’s Municipal Code limits noise levels at the nearby residential properties to 55 dBA between 7:00 a.m. and 10:00 p.m. and 45 dBA between 10:00 p.m. and 7:00 a.m., the following day. Section 7.25.010(D) of the City’s Municipal Code limits air conditioning unit noise to 55 dBA anytime of the day. As detailed above in Section 5.2, the noise measurements found that the existing ambient noise level currently exceeds the 55 dBA daytime and 45 dBA nighttime noise standards at the adjacent residential property lines. As detailed in Section 7.25.010(B) of the Municipal Code, the noise standard shall be increases in 5 dB increments to encompass the ambient noise level, which would result in a noise standard of 60 dBA at the adjacent residential and property lines.

In order to determine the onsite noise impacts from the operation of the proposed project, reference noise measurements were taken of the existing source, which have been detailed above in Section 6.2 and printouts of the reference noise measurements are provided in Appendix D. In order to account for the noise reduction provided by the existing 6-foot high sound wall that runs along the southwest property line, the Federal Highway Administration’s (FHWA) FHWA-RD-77-108 noise model was utilized as depicted in the *Technical Noise Supplement to the Traffic Noise Analysis Protocol (TeNS)*, prepared by Caltrans, September 2013, and the noise calculation spreadsheet is provided in Appendix E. A summary of the reference noise measurements and calculated noise levels at the nearest homes from the operation of the proposed project is shown in Table M.

Table M – Onsite Operational Noise Levels at the Nearby Sensitive Receptors

Noise Source	Home at 9540 Primrose Drive		Home at 9549 Sara Court	
	Distance - Source to Property Line (feet)	Noise Level ¹ (dBA Leq)	Distance - Source to Property Line (feet)	Noise Level ¹ (dBA Leq)
Rooftop HVAC	105	29	120	28
Parking Lot	15	30	15	30
Truck Delivery	40	45	40	45
Gas Dispensing Facility	85	28	80	28
Air/Water Dispenser	80	35	25	45
Combined Noise Levels		46		48
Measured Ambient Noise Levels (Day/Night)		61.8/57.4		58.3/57.2
Combined Onsite + Ambient Noise Levels (Day/Night)		61.9/57.7		58.7/57.7
City’s Noise Standards (Day/Night)²		65/60		60/60
Exceed City Noise Standards (Day/Night)?		No/No		No/No

Notes:

¹ The calculated noise levels account for the noise reduction provided by the existing 6-foot high wall along the southwest property line (see Appendix E).

² The City noise standard is from Section 7.25.010(A) of the Municipal Code that limits noise to 55 dBA between 7 a.m. and 10 p.m. and 45 dBA between 10 p.m. and 7 a.m.. Section 7.25.010(B) states that if ambient exceeds these standards (see Table D above), the standard shall be increased in 5 dB increments (i.e., 55 dB + 5 dB = 60 dB noise standard).

Table M shows that proposed project's worst-case operational noise from the simultaneous operation of all noise sources on the project site would create noise levels of 46 dBA at the home at 9540 Primrose Drive and 48 dBA at the home at 9549 Sara Court. The worst-case operational noise levels would be within the City's residential daytime and nighttime noise standards that have been described above. Therefore, the operational onsite noise impacts would be less than significant.

Level of Significance

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 demolition of the two commercial buildings and associated parking lots, site preparation and grading of the project site, building construction of a 3,048 square foot 7-Eleven convenience store with a 12 vehicle fuel position gas station, paving of the onsite parking areas and driveways, and application of architectural coatings. Vibration impacts from construction activities associated with the proposed project would typically be created from the operation of heavy off-road equipment.

The nearest offsite structure is the office building that is adjacent to the southeast property line of the project site. It should be noted that the site plan shows that there will be a 10 foot wide landscaped area that will run the length of the southeast property line, so on minimal use of off-road equipment will occur within the landscaped area.

Since the City does not provide any limits to the vibration levels that may be created from construction activities, the vibration thresholds provided in Caltrans Guidance Manual that is discussed above in Section 4.2 have been utilized and include damage to the nearby building threshold of 2.0 inch per second PPV and a human annoyance vibration threshold from transient sources of 0.25 inch per second PPV.

The primary source of vibration during construction would be from the operation of a bulldozer. From Table I 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 structure (10 feet away from where off-road equipment would regularly operate) would be 0.24 inch per second PPV. The vibration level at the nearest offsite structure would be within both the 2.0 inch per second PPV building damage threshold and 0.25 inch per second PPV human annoyance threshold detailed above. Impacts would be less than significant.

Operations-Related Vibration Impacts

The proposed project would consist of the operation of a convenience market and gas station. The ongoing operation of the proposed project would not include the operation of any known vibration sources.

Therefore, a less than significant vibration impact is anticipated from the operation of the proposed project.

Level of Significance

Less than significant impact.

7.4 Aircraft Noise

The proposed project would not expose people residing or working in the project area to excessive noise levels from aircraft. The nearest airport is Riverside Municipal Airport that is located approximately 2.3 miles north of the project site. The project site is located outside of the 60 dBA CNEL noise contours of Riverside Municipal Airport. No impacts would occur from aircraft noise.

Level of Significance

No impact.

8.0 REFERENCES

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.

City of Riverside, *City of Riverside General Plan 2025*, November, 2007.

City of Riverside, *City of Riverside Municipal Code*, March 27, 2018.

County of Riverside, *Comprehensive Update to the General Plan*, December 2008.

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

Urban Crossroads, *Van Buren 7-Eleven Traffic Analysis*, July 16, 2024.

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 Van Buren 7-Eleven Project*, July 19, 2024.

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



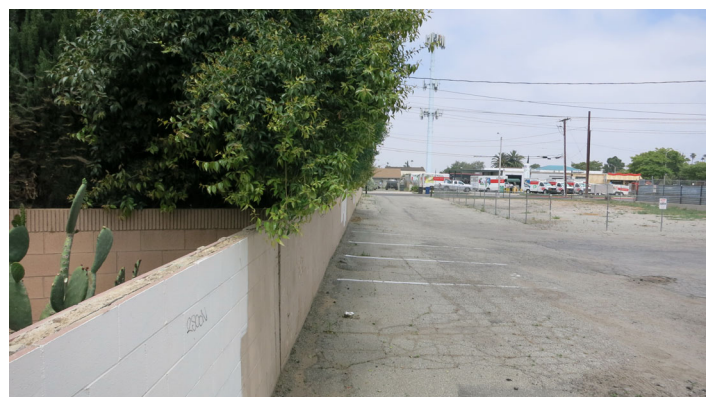
Noise Measurement Site 2 - looking south



Noise Measurement Site 2 - looking southwest



Noise Measurement Site 2 - looking west



Noise Measurement Site 2 - looking northwest

APPENDIX B

Field Noise Measurements Printouts

Site 1 - Near Northwest Corner of Project Site
May 21, 2024 11:36:46 AM Leq Daytime = 61.8
Sampling Time = 1 sec Freq Weighting=A Leq Nighttime = 57.4
Record Num = 86402 CNEL(24hr)= 65.1
Leq = 60.7 Ldn(24hr)= 64.8
Min = 38.5 Min Leq hr at 2:35 AM 50.5
Max = 91.3 Max Leq hr at 2:19 PM 65.3

Site 1 - Near Northwest Corner of Project Site		
SPL	Time	Leq (1 hour Avg.)
66.9	11:36:46	66.9
63.7	11:36:47	63.7
61.4	11:36:48	61.4
63.2	11:36:49	63.2
63.8	11:36:50	63.8
75.3	11:36:51	75.3
77.6	11:36:52	77.6
78.1	11:36:53	78.1
74.0	11:36:54	74.0
71.6	11:36:55	71.6
68.4	11:36:56	68.4
64.5	11:36:57	64.5
61.6	11:36:58	61.6
61.2	11:36:59	61.2
68.5	11:37:00	68.5
65.5	11:37:01	65.5
64.8	11:37:02	64.8
64.7	11:37:03	64.7
63.1	11:37:04	63.1
65.8	11:37:05	65.8
69.4	11:37:06	69.4
66.4	11:37:07	66.4
64.1	11:37:08	64.1
62.3	11:37:09	62.3
63.5	11:37:10	63.5
66.1	11:37:11	66.1
63.3	11:37:12	63.3
62.8	11:37:13	62.8
66.5	11:37:14	66.5
69.5	11:37:15	69.5
71.1	11:37:16	71.1
70.1	11:37:17	70.1
67.3	11:37:18	67.3
69.8	11:37:19	69.8
70.3	11:37:20	70.3
66.6	11:37:21	66.6
62.8	11:37:22	62.8
60.6	11:37:23	60.6
61.5	11:37:24	61.5
61.6	11:37:25	61.6
65.4	11:37:26	65.4
65.0	11:37:27	65.0
63.8	11:37:28	63.8
64.0	11:37:29	64.0
63.0	11:37:30	63.0
61.3	11:37:31	61.3
65.1	11:37:32	65.1
67.2	11:37:33	67.2
72.5	11:37:34	72.5
72.6	11:37:35	72.6
71.7	11:37:36	71.7
70.9	11:37:37	70.9
67.5	11:37:38	67.5
64.2	11:37:39	64.2
63.8	11:37:40	63.8
62.0	11:37:41	62.0
62.3	11:37:42	62.3
63.3	11:37:43	63.3
64.3	11:37:44	64.3
62.4	11:37:45	62.4
61.4	11:37:46	61.4
60.0	11:37:47	60.0
58.5	11:37:48	58.5
58.9	11:37:49	58.9
55.8	11:37:50	55.8
55.6	11:37:51	55.6
55.5	11:37:52	55.5
59.7	11:37:53	59.7
60.5	11:37:54	60.5
61.8	11:37:55	61.8
63.2	11:37:56	63.2
61.3	11:37:57	61.3
58.8	11:37:58	58.8
56.8	11:37:59	56.8
54.7	11:38:00	54.7
53.4	11:38:01	53.4
53.4	11:38:02	53.4
54.8	11:38:03	54.8
58.0	11:38:04	58.0
63.4	11:38:05	63.4
63.5	11:38:06	63.5
60.4	11:38:07	60.4
57.2	11:38:08	57.2
55.0	11:38:09	55.0
54.8	11:38:10	54.8
56.8	11:38:11	56.8
61.1	11:38:12	61.1
61.3	11:38:13	61.3
60.0	11:38:14	60.0
60.2	11:38:15	60.2
60.5	11:38:16	60.5
61.1	11:38:17	61.1
62.2	11:38:18	62.2
60.8	11:38:19	60.8
59.6	11:38:20	59.6
58.0	11:38:21	58.0
57.6	11:38:22	57.6
57.9	11:38:23	57.9
59.2	11:38:24	59.2
59.1	11:38:25	59.1
58.0	11:38:26	58.0
58.2	11:38:27	58.2
63.3	11:38:28	63.3
65.1	11:38:29	65.1
65.0	11:38:30	65.0
65.3	11:38:31	65.3
63.6	11:38:32	63.6
60.9	11:38:33	60.9
58.2	11:38:34	58.2
56.3	11:38:35	56.3
54.7	11:38:36	54.7
53.9	11:38:37	53.9
53.5	11:38:38	53.5
53.5	11:38:39	53.5
54.0	11:38:40	54.0
54.2	11:38:41	54.2
54.5	11:38:42	54.5
55.0	11:38:43	55.0
55.4	11:38:44	55.4
56.3	11:38:45	56.3
57.9	11:38:46	57.9
59.7	11:38:47	59.7
59.4	11:38:48	59.4
58.4	11:38:49	58.4
58.5	11:38:50	58.5
59.3	11:38:51	59.3
59.2	11:38:52	59.2
59.4	11:38:53	59.4
59.7	11:38:54	59.7
59.3	11:38:55	59.3
59.3	11:38:56	59.3
58.6	11:38:57	58.6
58.4	11:38:58	58.4
57.6	11:38:59	57.6
56.7	11:39:00	56.7
56.4	11:39:01	56.4
56.5	11:39:02	56.5
56.8	11:39:03	56.8
56.7	11:39:04	56.7
56.8	11:39:05	56.8
56.4	11:39:06	56.4
55.6	11:39:07	55.6
55.2	11:39:08	55.2
55.3	11:39:09	55.3
55.4	11:39:10	55.4
55.4	11:39:11	55.4
56.6	11:39:12	56.6
56.2	11:39:13	56.2
61.5	11:39:14	61.5
61.2	11:39:15	61.2
59.4	11:39:16	59.4
57.9	11:39:17	57.9
56.9	11:39:18	56.9
56.5	11:39:19	56.5
56.1	11:39:20	56.1
55.5	11:39:21	55.5
55.0	11:39:22	55.0
54.8	11:39:23	54.8
54.3	11:39:24	54.3
54.9	11:39:25	54.9
53.6	11:39:26	53.6
53.9	11:39:27	53.9
54.5	11:39:28	54.5
53.9	11:39:29	53.9
53.1	11:39:30	53.1
52.7	11:39:31	52.7
52.8	11:39:32	52.8
52.7	11:39:33	52.7
52.6	11:39:34	52.6
52.8	11:39:35	52.8

Site 2 - Near Southwest Corner of Project Site
May 21, 2024 11:41:00 AM Leq Daytime = 58.3
Sampling Time = 1 sec Freq Weighting=A Leq Nighttime = 57.2
Record Num = 86402 CNEL(24hr)= 64.1
Leq = 57.9 Ldn(24hr)= 63.8
Min = 41.1 Min Leq hr at 2:39 AM 51.7
Max = 85.4 Max Leq hr at 9:54 PM 61.3

Site 2 - Near Southwest Corner of Project Site		
SPL	Time	Leq (1 hour Avg.)
60.2	11:41:00	60.2
66.8	11:41:01	66.8
66.1	11:41:02	66.1
62.6	11:41:03	62.6
63.8	11:41:04	63.8
62.4	11:41:05	62.4
61.8	11:41:06	61.8
78.1	11:41:07	78.1
74.0	11:41:08	74.0
65.0	11:41:09	65.0
68.4	11:41:10	68.4
61.0	11:41:11	61.0
63.7	11:41:12	63.7
62.4	11:41:13	62.4
62.0	11:41:14	62.0
64.8	11:41:15	64.8
65.8	11:41:16	65.8
65.1	11:41:17	65.1
64.4	11:41:18	64.4
62.6	11:41:19	62.6
59.3	11:41:20	59.3
66.9	11:41:21	66.9
63.7	11:41:22	63.7
62.3	11:41:23	62.3
62.4	11:41:24	62.4
60.7	11:41:25	60.7
62.3	11:41:26	62.3
63.6	11:41:27	63.6
61.1	11:41:28	61.1
69.5	11:41:29	69.5
66.1	11:41:30	66.1
62.8	11:41:31	62.8
67.3	11:41:32	67.3
64.5	11:41:33	64.5
62.7	11:41:34	62.7
66.9	11:41:35	66.9
63.2	11:41:36	63.2
62.4	11:41:37	62.4
61.5	11:41:38	61.5
71.3	11:41:39	71.3
68.7	11:41:40	68.7
65.0	11:41:41	65.0
67.6	11:41:42	67.6
67.0	11:41:43	67.0
64.4	11:41:44	64.4
62.4	11:41:45	62.4
60.5	11:41:46	60.5
60.3	11:41:47	60.3
67.7	11:41:48	67.7
65.8	11:41:49	65.8
63.4	11:41:50	63.4
60.0	11:41:51	60.0
70.8	11:41:52	70.8
65.6	11:41:53	65.6
63.4	11:41:54	63.4
69.2	11:41:55	69.2
65.7	11:41:56	65.7
63.3	11:41:57	63.3
71.3	11:41:58	71.3
69.9	11:41:59	69.9
61.8	11:42:00	61.8
70.8	11:42:01	70.8
68.6	11:42:02	68.6
66.9	11:42:03	66.9
74.6	11:42:04	74.6
73.8	11:42:05	73.8
55.5	11:42:06	55.5
68.6	11:42:07	68.6
64.8	11:42:08	64.8
60.7	11:42:09	60.7
78.0	11:42:10	78.0
74.1	11:42:11	74.1
70.4	11:42:12	70.4
66.0	11:42:13	66.0
66.1	11:42:14	66.1
65.3	11:42:15	65.3
63.4	11:42:16	63.4
62.6	11:42:17	62.6
74.5	11:42:18	74.5
63.4	11:42:19	63.4
81.4	11:42:20	81.4
77.2	11:42:21	77.2
74.7	11:42:22	74.7
75.9	11:42:23	75.9
76.7	11:42:24	76.7
77.6	11:42:25	77.6
79.4	11:42:26	79.4
78.9	11:42:27	78.9
76.4	11:42:28	76.4
78.5	11:42:29	78.5
78.8	11:42:30	78.8
78.6	11:42:31	78.6
77.2	11:42:32	77.2
78.6	11:42:33	78.6
77.3	11:42:34	77.3
76.0	11:42:35	76.0
76.4	11:42:36	76.4
78.3	11:42:37	78.3
77.2	11:42:38	77.2
76.6	11:42:39	76.6
76.6	11:42:40	76.6
76.6	11:42:41	76.6
76.1	11:42:42	76.1
77.3	11:42:43	77.3
65.0	11:42:44	65.0
74.3	11:42:45	74.3
76.0	11:42:46	76.0
63.9	11:42:47	63.9
75.4	11:42:48	75.4
77.3	11:42:49	77.3
74.7	11:42:50	74.7
76.9	11:42:51	76.9
76.6	11:42:52	76.6
74.9	11:42:53	74.9
70.9	11:42:54	70.9
67.2	11:42:55	67.2
64.1	11:42:56	64.1
72.4	11:42:57	72.4
72.9	11:42:58	72.9
68.8	11:42:59	68.8
64.8	11:43:00	64.8
61.2	11:43:01	61.2
58.5	11:43:02	58.5
58.4	11:43:03	58.4
56.0	11:43:04	56.0
54.8	11:43:05	54.8
54.0	11:43:06	54.0
54.4	11:43:07	54.4
54.9	11:43:08	54.9
55.8	11:43:09	55.8
55.6	11:43:10	55.6
55.7	11:43:11	55.7
58.4	11:43:12	58.4
55.8	11:43:13	55.8
54.8	11:43:14	54.8
54.5	11:43:15	54.5
54.3	11:43:16	54.3
54.9	11:43:17	54.9
56.7	11:43:18	56.7
58.6	11:43:19	58.6
57.4	11:43:20	57.4
56.6	11:43:21	56.6
57.7	11:43:22	57.7
56.9	11:43:23	56.9
56.3	11:43:24	56.3
56.0	11:43:25	56.0
56.5	11:43:26	56.5
60.4	11:43:27	60.4
61.8	11:43:28	61.8
61.6	11:43:29	61.6
59.7	11:43:30	59.7
57.6	11:43:31	57.6
55.7	11:43:32	55.7
55.2	11:43:33	55.2
56.1	11:43:34	56.1
54.2	11:43:35	54.2
53.6	11:43:36	53.6
54.3	11:43:37	54.3
52.9	11:43:38	52.9
52.2	11:43:39	52.2
53.6	11:43:40	53.6
53.9	11:43:41	53.9
52.0	11:43:42	52.0
51.7	11:43:43	51.7
52.3	11:43:44	52.3
52.3	11:43:45	52.3
52.2	11:43:46	52.2
52.8	11:43:47	

Site 1 - Near Northwest Corner of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn CNEL
59.6	11:54:49	59.6	59.6
58.2	11:54:50	58.2	58.2
56.5	11:54:51	56.5	56.5
54.8	11:54:52	54.8	54.8
54.0	11:54:53	54.0	54.0
54.7	11:54:54	54.7	54.7
55.3	11:54:55	55.3	55.3
56.4	11:54:56	56.4	56.4
56.4	11:54:57	56.4	56.4
56.9	11:54:58	56.9	56.9
56.8	11:54:59	56.8	56.8
56.3	11:55:00	56.3	56.3
55.3	11:55:01	55.3	55.3
54.7	11:55:02	54.7	54.7
54.4	11:55:03	54.4	54.4
54.8	11:55:04	54.8	54.8
55.3	11:55:05	55.3	55.3
57.0	11:55:06	57.0	57.0
61.5	11:55:07	61.5	61.5
64.5	11:55:08	64.5	64.5
63.8	11:55:09	63.8	63.8
63.5	11:55:10	63.5	63.5
62.9	11:55:11	62.9	62.9
62.1	11:55:12	62.1	62.1
62.6	11:55:13	62.6	62.6
62.9	11:55:14	62.9	62.9
61.5	11:55:15	61.5	61.5
60.0	11:55:16	60.0	60.0
59.2	11:55:17	59.2	59.2
58.9	11:55:18	58.9	58.9
58.7	11:55:19	58.7	58.7
60.1	11:55:20	60.1	60.1
63.9	11:55:21	63.9	63.9
67.8	11:55:22	67.8	67.8
66.2	11:55:23	66.2	66.2
64.0	11:55:24	64.0	64.0
62.9	11:55:25	62.9	62.9
64.2	11:55:26	64.2	64.2
64.4	11:55:27	64.4	64.4
62.5	11:55:28	62.5	62.5
60.6	11:55:29	60.6	60.6
59.0	11:55:30	59.0	59.0
57.8	11:55:31	57.8	57.8
57.1	11:55:32	57.1	57.1
56.8	11:55:33	56.8	56.8
56.5	11:55:34	56.5	56.5
56.3	11:55:35	56.3	56.3
56.7	11:55:36	56.7	56.7
57.2	11:55:37	57.2	57.2
57.4	11:55:38	57.4	57.4
57.3	11:55:39	57.3	57.3
57.7	11:55:40	57.7	57.7
58.5	11:55:41	58.5	58.5
60.8	11:55:42	60.8	60.8
61.3	11:55:43	61.3	61.3
59.5	11:55:44	59.5	59.5
58.0	11:55:45	58.0	58.0
56.8	11:55:46	56.8	56.8
56.8	11:55:47	56.8	56.8
56.8	11:55:48	56.8	56.8
56.9	11:55:49	56.9	56.9
57.1	11:55:50	57.1	57.1
57.0	11:55:51	57.0	57.0
56.8	11:55:52	56.8	56.8
57.0	11:55:53	57.0	57.0
57.6	11:55:54	57.6	57.6
58.0	11:55:55	58.0	58.0
59.7	11:55:56	59.7	59.7
62.7	11:55:57	62.7	62.7
63.0	11:55:58	63.0	63.0
61.4	11:55:59	61.4	61.4
60.6	11:56:00	60.6	60.6
61.5	11:56:01	61.5	61.5
61.3	11:56:02	61.3	61.3
61.0	11:56:03	61.0	61.0
59.4	11:56:04	59.4	59.4
57.8	11:56:05	57.8	57.8
57.0	11:56:06	57.0	57.0
56.5	11:56:07	56.5	56.5
57.1	11:56:08	57.1	57.1
59.6	11:56:09	59.6	59.6
61.9	11:56:10	61.9	61.9
62.9	11:56:11	62.9	62.9
63.0	11:56:12	63.0	63.0
62.3	11:56:13	62.3	62.3
61.8	11:56:14	61.8	61.8
61.8	11:56:15	61.8	61.8
63.4	11:56:16	63.4	63.4
64.7	11:56:17	64.7	64.7
65.6	11:56:18	65.6	65.6
65.2	11:56:19	65.2	65.2
63.9	11:56:20	63.9	63.9
61.8	11:56:21	61.8	61.8
60.3	11:56:22	60.3	60.3
62.0	11:56:23	62.0	62.0
62.0	11:56:24	62.0	62.0
60.1	11:56:25	60.1	60.1
58.0	11:56:26	58.0	58.0
56.7	11:56:27	56.7	56.7
58.1	11:56:28	58.1	58.1
58.9	11:56:29	58.9	58.9
61.7	11:56:30	61.7	61.7
64.5	11:56:31	64.5	64.5
65.1	11:56:32	65.1	65.1
64.4	11:56:33	64.4	64.4
66.1	11:56:34	66.1	66.1
67.7	11:56:35	67.7	67.7
66.6	11:56:36	66.6	66.6
64.2	11:56:37	64.2	64.2
62.0	11:56:38	62.0	62.0
61.6	11:56:39	61.6	61.6
60.0	11:56:40	60.0	60.0
59.1	11:56:41	59.1	59.1
58.7	11:56:42	58.7	58.7
59.5	11:56:43	59.5	59.5
62.5	11:56:44	62.5	62.5
65.9	11:56:45	65.9	65.9
70.0	11:56:46	70.0	70.0
73.3	11:56:47	73.3	73.3
69.8	11:56:48	69.8	69.8
66.1	11:56:49	66.1	66.1
62.9	11:56:50	62.9	62.9
60.1	11:56:51	60.1	60.1
57.8	11:56:52	57.8	57.8
56.5	11:56:53	56.5	56.5
56.4	11:56:54	56.4	56.4
56.0	11:56:55	56.0	56.0
56.3	11:56:56	56.3	56.3
58.1	11:56:57	58.1	58.1
58.7	11:56:58	58.7	58.7
59.4	11:56:59	59.4	59.4
58.7	11:57:00	58.7	58.7
57.4	11:57:01	57.4	57.4
57.2	11:57:02	57.2	57.2
58.9	11:57:03	58.9	58.9
61.1	11:57:04	61.1	61.1
62.4	11:57:05	62.4	62.4
64.6	11:57:06	64.6	64.6
64.5	11:57:07	64.5	64.5
62.8	11:57:08	62.8	62.8
60.7	11:57:09	60.7	60.7
58.5	11:57:10	58.5	58.5
57.1	11:57:11	57.1	57.1
56.0	11:57:12	56.0	56.0
55.2	11:57:13	55.2	55.2
54.7	11:57:14	54.7	54.7
54.4	11:57:15	54.4	54.4
54.6	11:57:16	54.6	54.6
55.1	11:57:17	55.1	55.1
54.9	11:57:18	54.9	54.9
54.2	11:57:19	54.2	54.2
54.3	11:57:20	54.3	54.3
55.3	11:57:21	55.3	55.3
56.2	11:57:22	56.2	56.2
55.9	11:57:23	55.9	55.9
55.9	11:57:24	55.9	55.9
56.9	11:57:25	56.9	56.9
57.7	11:57:26	57.7	57.7
59.7	11:57:27	59.7	59.7
61.1	11:57:28	61.1	61.1
62.6	11:57:29	62.6	62.6
66.0	11:57:30	66.0	66.0

Site 2 - Near Southwest Corner of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn CNEL
59.0	11:59:03	59.0	59.0
59.8	11:59:04	59.8	59.8
61.6	11:59:05	61.6	61.6
61.0	11:59:06	61.0	61.0
60.3	11:59:07	60.3	60.3
59.5	11:59:08	59.5	59.5
55.2	11:59:09	55.2	55.2
57.9	11:59:10	57.9	57.9
57.5	11:59:11	57.5	57.5
58.7	11:59:12	58.7	58.7
57.6	11:59:13	57.6	57.6
56.3	11:59:14	56.3	56.3
55.5	11:59:15	55.5	55.5
54.4	11:59:16	54.4	54.4
53.8	11:59:17	53.8	53.8
54.4	11:59:18	54.4	54.4
53.4	11:59:19	53.4	53.4
52.9	11:59:20	52.9	52.9
52.6	11:59:21	52.6	52.6
53.6	11:59:22	53.6	53.6
54.1	11:59:23	54.1	54.1
53.8	11:59:24	53.8	53.8
54.2	11:59:25	54.2	54.2
54.1	11:59:26	54.1	54.1
54.0	11:59:27	54.0	54.0
53.6	11:59:28	53.6	53.6
53.3	11:59:29	53.3	53.3
53.2	11:59:30	53.2	53.2
53.0	11:59:31	53.0	53.0
53.0	11:59:32	53.0	53.0
52.8	11:59:33	52.8	52.8
52.6	11:59:34	52.6	52.6
53.0	11:59:35	53.0	53.0
53.0	11:59:36	53.0	53.0
54.0	11:59:37	54.0	54.0
54.5	11:59:38	54.5	54.5
54.3	11:59:39	54.3	54.3
54.2	11:59:40	54.2	54.2
53.9	11:59:41	53.9	53.9
54.1	11:59:42	54.1	54.1
54.9	11:59:43	54.9	54.9
56.0	11:59:44	56.0	56.0
55.3	11:59:45	55.3	55.3
56.0	11:59:46	56.0	56.0
56.2	11:59:47	56.2	56.2
56.9	11:59:48	56.9	56.9
56.3	11:59:49	56.3	56.3
57.1	11:59:50	57.1	57.1
57.2	11:59:51	57.2	57.2
61.4	11:59:52	61.4	61.4
61.8	11:59:53	61.8	61.8
61.8	11:59:54	61.8	61.8
60.6	11:59:55	60.6	60.6
60.1	11:59:56	60.1	60.1
59.1	11:59:57	59.1	59.1
58.3	11:59:58	58.3	58.3
56.5	11:59:59	56.5	56.5
56.0	12:00:00	56.0	56.0
57.2	12:00:01	57.2	57.2
57.4	12:00:02	57.4	57.4
57.9	12:00:03	57.9	57.9
59.2	12:00:04	59.2	59.2
59.0	12:00:05	59.0	59.0
58.6	12:00:06	58.6	58.6
58.0	12:00:07	58.0	58.0
57.6	12:00:08	57.6	57.6
57.1	12:00:09	57.1	57.1
56.4	12:00:10	56.4	56.4
56.8	12:00:11	56.8	56.8
63.5	12:00:12	63.5	63.5
65.1	12:00:13	65.1	65.1
65.1	12:00:14	65.1	65.1
65.0	12:00:15	65.0	65.0
64.8	12:00:16	64.8	64.8
54.9	12:00:17	54.9	54.9
55.1	12:00:18	55.1	55.1
56.3	12:00:19	56.3	56.3
57.0	12:00:20	57.0	57.0
56.5	12:00:21	56.5	56.5
55.5	12:00:22	55.5	55.5
56.7	12:00:23	56.7	56.7
55.2	12:00:24	55.2	55.2
54.6	12:00:25	54.6	54.6
54.3	12:00:26	54.3	54.3
54.0	12:00:27	54.0	54.0
53.8	12:00:28	53.8	53.8
53.8	12:00:29	53.8	53.8
53.4	12:00:30	53.4	53.4
53.2	12:00:31	53.2	53.2
53.0	12:00:32	53.0	53.0
52.4	12:00:33	52.4	52.4
52.2	12:00:34	52.2	52.2
52.2	12:00:35	52.2	52.2
52.2	12:00:36	52.2	52.2
52.2	12:00:37	52.2	52.2
52.7	12:00:38	52.7	52.7
53.7	12:00:39	53.7	53.7
53.4	12:00:40	53.4	53.4
53.3	12:00:41	53.3	53.3
52.9	12:00:42	52.9	52.9
52.0	12:00:43	52.0	52.0
51.8	12:00:44	51.8	51.8
51.4	12:00:45	51.4	51.4
52.9	12:00:46	52.9	52.9
54.0	12:00:47	54.0	54.0
54.9	12:00:48	54.9	54.9
67.5	12:00:49	67.5	67.5

Site 1 - Near Northwest Corner of Project Site

Site 2 - Near Southwest Corner of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn CNEL	SPL	Time	Leq (1 hour Avg.)	Ldn CNEL
69.9	11:57:31		69.9	69.9	12:01:45		69.9
72.6	11:57:32		72.6	72.6	12:01:46		72.6
72.7	11:57:33		72.7	72.7	12:01:47		72.7
70.7	11:57:34		70.7	70.7	12:01:48		70.7
67.5	11:57:35		67.5	67.5	12:01:49		67.5
64.7	11:57:36		64.7	64.7	12:01:50		64.7
61.6	11:57:37		61.6	61.6	12:01:51		61.6
59.0	11:57:38		59.0	59.0	12:01:52		59.0
56.4	11:57:39		56.4	56.4	12:01:53		56.4
55.2	11:57:40		55.2	55.2	12:01:54		55.2
54.9	11:57:41		54.9	54.9	12:01:55		54.9
55.1	11:57:42		55.1	55.1	12:01:56		55.1
56.6	11:57:43		56.6	56.6	12:01:57		56.6
57.2	11:57:44		57.2	57.2	12:01:58		57.2
57.5	11:57:45		57.5	57.5	12:01:59		57.5
57.7	11:57:46		57.7	57.7	12:02:00		57.7
59.2	11:57:47		59.2	59.2	12:02:01		59.2
61.8	11:57:48		61.8	61.8	12:02:02		61.8
62.1	11:57:49		62.1	62.1	12:02:03		62.1
60.4	11:57:50		60.4	60.4	12:02:04		60.4
58.7	11:57:51		58.7	58.7	12:02:05		58.7
56.6	11:57:52		56.6	56.6	12:02:06		56.6
55.0	11:57:53		55.0	55.0	12:02:07		55.0
54.3	11:57:54		54.3	54.3	12:02:08		54.3
53.6	11:57:55		53.6	53.6	12:02:09		53.6
52.9	11:57:56		52.9	52.9	12:02:10		52.9
52.1	11:57:57		52.1	52.1	12:02:11		52.1
51.9	11:57:58		51.9	51.9	12:02:12		51.9
51.8	11:57:59		51.8	51.8	12:02:13		51.8
52.2	11:58:00		52.2	52.2	12:02:14		52.2
52.2	11:58:01		52.2	52.2	12:02:15		52.2
52.8	11:58:02		52.8	52.8	12:02:16		52.8
53.5	11:58:03		53.5	53.5	12:02:17		53.5
55.8	11:58:04		55.8	55.8	12:02:18		55.8
59.4	11:58:05		59.4	59.4	12:02:19		59.4
62.0	11:58:06		62.0	62.0	12:02:20		62.0
61.1	11:58:07		61.1	61.1	12:02:21		61.1
60.8	11:58:08		60.8	60.8	12:02:22		60.8
62.5	11:58:09		62.5	62.5	12:02:23		62.5
61.4	11:58:10		61.4	61.4	12:02:24		61.4
58.8	11:58:11		58.8	58.8	12:02:25		58.8
56.0	11:58:12		56.0	56.0	12:02:26		56.0
54.4	11:58:13		54.4	54.4	12:02:27		54.4
53.9	11:58:14		53.9	53.9	12:02:28		53.9
54.4	11:58:15		54.4	54.4	12:02:29		54.4
55.7	11:58:16		55.7	55.7	12:02:30		55.7
58.0	11:58:17		58.0	58.0	12:02:31		58.0
59.3	11:58:18		59.3	59.3	12:02:32		59.3
60.0	11:58:19		60.0	60.0	12:02:33		60.0
59.5	11:58:20		59.5	59.5	12:02:34		59.5
60.2	11:58:21		60.2	60.2	12:02:35		60.2
61.2	11:58:22		61.2	61.2	12:02:36		61.2
62.5	11:58:23		62.5	62.5	12:02:37		62.5
61.0	11:58:24		61.0	61.0	12:02:38		61.0
58.7	11:58:25		58.7	58.7	12:02:39		58.7
57.4	11:58:26		57.4	57.4	12:02:40		57.4
57.9	11:58:27		57.9	57.9	12:02:41		57.9
57.2	11:58:28		57.2	57.2	12:02:42		57.2
56.2	11:58:29		56.2	56.2	12:02:43		56.2
54.9	11:58:30		54.9	54.9	12:02:44		54.9
54.7	11:58:31		54.7	54.7	12:02:45		54.7
54.8	11:58:32		54.8	54.8	12:02:46		54.8
55.0	11:58:33		55.0	55.0	12:02:47		55.0
55.4	11:58:34		55.4	55.4	12:02:48		55.4
56.8	11:58:35		56.8	56.8	12:02:49		56.8
57.3	11:58:36		57.3	57.3	12:02:50		57.3
55.9	11:58:37		55.9	55.9	12:02:51		55.9
55.1	11:58:38		55.1	55.1	12:02:52		55.1
54.9	11:58:39		54.9	54.9	12:02:53		54.9
55.3	11:58:40		55.3	55.3	12:02:54		55.3
55.7	11:58:41		55.7	55.7	12:02:55		55.7
55.8	11:58:42		55.8	55.8	12:02:56		55.8
56.4	11:58:43		56.4	56.4	12:02:57		56.4
57.2	11:58:44		57.2	57.2	12:02:58		57.2
61.4	11:58:45		61.4	61.4	12:02:59		61.4
62.3	11:58:46		62.3	62.3	12:03:00		62.3
60.3	11:58:47		60.3	60.3	12:03:01		60.3
58.4	11:58:48		58.4	58.4	12:03:02		58.4
59.0	11:58:49		59.0	59.0	12:03:03		59.0
59.6	11:58:50		59.6	59.6	12:03:04		59.6
58.3	11:58:51		58.3	58.3	12:03:05		58.3
56.7	11:58:52		56.7	56.7	12:03:06		56.7
56.8	11:58:53		56.8	56.8	12:03:07		56.8
56.0	11:58:54		56.0	56.0	12:03:08		56.0
55.7	11:58:55		55.7	55.7	12:03:09		55.7
56.8	11:58:56		56.8	56.8	12:03:10		56.8
57.6	11:58:57		57.6	57.6	12:03:11		57.6
56.7	11:58:58		56.7	56.7	12:03:12		56.7
56.1	11:58:59		56.1	56.1	12:03:13		56.1
56.2	11:59:00		56.2	56.2	12:03:14		56.2
56.0	11:59:01		56.0	56.0	12:03:15		56.0
57.7	11:59:02		57.7	57.7	12:03:16		57.7
59.6	11:59:03		59.6	59.6	12:03:17		59.6
58.9	11:59:04		58.9	58.9	12:03:18		58.9
58.6	11:59:05		58.6	58.6	12:03:19		58.6
58.1	11:59:06		58.1	58.1	12:03:20		58.1
58.1	11:59:07		58.1	58.1	12:03:21		58.1
58.0	11:59:08		58.0	58.0	12:03:22		58.0
58.8	11:59:09		58.8	58.8	12:03:23		58.8
55.8	11:59:10		55.8	55.8	12:03:24		55.8
56.1	11:59:11		56.1	56.1	12:03:25		56.1
57.0	11:59:12		57.0	57.0	12:03:26		57.0
56.0	11:59:13		56.0	56.0	12:03:27		56.0
56.0	11:59:14		56.0	56.0	12:03:28		56.0
56.4	11:59:15		56.4	56.4	12:03:29		56.4
55.4	11:59:16		55.4	55.4	12:03:30		55.4
55.7	11:59:17		55.7	55.7	12:03:31		55.7
57.8	11:59:18		57.8	57.8	12:03:32		57.8
58.8	11:59:19		58.8	58.8	12:03:33		58.8
59.1	11:59:20		59.1	59.1	12:03:34		59.1
57.9	11:59:21		57.9	57.9	12:03:35		57.9
57.3	11:59:22		57.3	57.3	12:03:36		57.3
57.1	11:59:23		57.1	57.1	12:03:37		57.1
57.3	11:59:24		57.3	57.3	12:03:38		57.3
58.9	11:59:25		58.9	58.9	12:03:39		58.9
60.5	11:59:26		60.5	60.5	12:03:40		60.5
60.6	11:59:27		60.6	60.6	12:03:41		60.6
59.8	11:59:28		59.8	59.8	12:03:42		59.8
57.6	11:59:29		57.6	57.6	12:03:43		57.6
56.3	11:59:30		56.3	56.3	12:03:44		56.3
56.6	11:59:31		56.6	56.6	12:03:45		56.6
54.9	11:59:32		54.9	54.9	12:03:46		54.9
52.9	11:59:33		52.9	52.9	12:03:47		52.9
52.0	11:59:34		52.0	52.0	12:03:48		52.0
51.9	11:59:35		51.9	51.9	12:03:49		51.9
52.9	11:59:36		52.9	52.9	12:03:50		52.9
52.8	11:59:37		52.8	52.8	12:03:51		52.8
52.2	11:59:38		52.2	52.2	12:03:52		52.2
53.0	11:59:39		53.0	53.0	12:03:53		53.0
53.5	11:59:40		53.5	53.5	12:03:54		53.5
52.8	11:59:41		52.8	52.8	12:03:55		52.8
52.3	11:59:42		52.3	52.3	12:03:56		52.3
52.1	11:59:43		52.1	52.1	12:03:57		52.1
52.2	11:59:44		52.2	52.2	12:03:58		52.2
51.8	11:59:45		51.8	51.8	12:03:59		51.8
51.7	11:59:46		51.7	51.7	12:04:00		51.7
51.9	11:59:47		51.9	51.9	12:04:01		51.9
51.6	11:59:48		51.6	51.6	12:04:02		51.6
51.8	11:59:49		51.8	51.8	12:04:03		51.8
51.5	11:59:50		51.5	51.5	12:04:04		51.5
51.5	11:59:51		51.5	51.5	12:04:05		51.5
52.3	11:59:52		52.3	52.3	12:04:06		52.3
52.7	11:59:53		52.7	52.7	12:04:07		52.7
52.9	11:59:54		52.9	52.9	12:04:08		52.9
52.8	11:59:55		52.8	52.8	12:04:09		52.8
53.3	11:59:56		53.3	53.3	12:04:10		53.3
53.9	11:59:57		53.9	53.9	12:04:11		53.9
54.0	11:59:58		54.0	54.0	12:04:12		54.0
54.2	11:59:59		54.2	54.2	12:04:13		54.2
54.2	12:00:00		54.2	54.2	12:04:14		54.2
54.2	12:00:01		54.2	54.2	12:04:15		54.2
55.9	12:00:02		55.9	55.9	12:04:16		55.9
60.7	12:00:03		60.7	60.7	12:04:17		60.7
68.6	12:00:04		68.6	68.6	12:04:18		68.6
68.1	12:00:05		68.1	68.1	12:04:19		68.1
64.9	12:00:06		64.9	64.9	12:04:20		64.9
62.9	12:00:07		62.9	62.9	12:04:21		62.9
63.7	12:00:08		63.7	63.7	12:04:22		63.7
64.4	12:00:09		64.4	64.4	12:04:23		64.4
64.7	12:00:10		64.7	64.7	12:04:24		64.7
66.7	12:00:11		66.7	66.7	12:04:25		66.7
66.3	12:00:12		66.3	66.3	12:04:26		66.3

Site 1 - Near Northwest Corner of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn CNEL
53.1	12:02:55		53.1
53.2	12:02:56		53.2
53.5	12:02:57		53.5
53.2	12:02:58		53.2
52.7	12:02:59		52.7
52.2	12:03:00		52.2
51.9	12:03:01		51.9
51.5	12:03:02		51.5
51.1	12:03:03		51.1
51.0	12:03:04		51.0
51.0	12:03:05		51.0
51.0	12:03:06		51.0
50.7	12:03:07		50.7
50.6	12:03:08		50.6
50.9	12:03:09		50.9
51.7	12:03:10		51.7
52.5	12:03:11		52.5
53.3	12:03:12		53.3
55.4	12:03:13		55.4
57.9	12:03:14		57.9
57.1	12:03:15		57.1
55.1	12:03:16		55.1
53.2	12:03:17		53.2
52.2	12:03:18		52.2
51.8	12:03:19		51.8
51.7	12:03:20		51.7
51.8	12:03:21		51.8
52.1	12:03:22		52.1
52.7	12:03:23		52.7
54.1	12:03:24		54.1
54.6	12:03:25		54.6
53.8	12:03:26		53.8
52.9	12:03:27		52.9
52.5	12:03:28		52.5
52.2	12:03:29		52.2
52.1	12:03:30		52.1
51.9	12:03:31		51.9
52.4	12:03:32		52.4
52.7	12:03:33		52.7
54.0	12:03:34		54.0
57.7	12:03:35		57.7
59.8	12:03:36		59.8
59.8	12:03:37		59.8
59.9	12:03:38		59.9
59.9	12:03:39		59.9
59.5	12:03:40		59.5
65.4	12:03:41		65.4
68.0	12:03:42		68.0
67.0	12:03:43		67.0
63.8	12:03:44		63.8
60.8	12:03:45		60.8
58.1	12:03:46		58.1
56.2	12:03:47		56.2
55.5	12:03:48		55.5
56.4	12:03:49		56.4
60.0	12:03:50		60.0
61.9	12:03:51		61.9
60.2	12:03:52		60.2
57.9	12:03:53		57.9
56.4	12:03:54		56.4
55.5	12:03:55		55.5
56.0	12:03:56		56.0
55.9	12:03:57		55.9
55.4	12:03:58		55.4
56.1	12:03:59		56.1
57.0	12:04:00		57.0
56.8	12:04:01		56.8
56.9	12:04:02		56.9
57.4	12:04:03		57.4
58.1	12:04:04		58.1
58.5	12:04:05		58.5
57.6	12:04:06		57.6
58.4	12:04:07		58.4
61.5	12:04:08		61.5
60.9	12:04:09		60.9
59.2	12:04:10		59.2
57.4	12:04:11		57.4
56.0	12:04:12		56.0
55.7	12:04:13		55.7
55.5	12:04:14		55.5
55.6	12:04:15		55.6
56.3	12:04:16		56.3
56.8	12:04:17		56.8
56.7	12:04:18		56.7
56.0	12:04:19		56.0
55.9	12:04:20		55.9
56.1	12:04:21		56.1
56.1	12:04:22		56.1
56.0	12:04:23		56.0
55.7	12:04:24		55.7
55.8	12:04:25		55.8
55.7	12:04:26		55.7
56.2	12:04:27		56.2
56.6	12:04:28		56.6
56.9	12:04:29		56.9
56.7	12:04:30		56.7
56.6	12:04:31		56.6
56.6	12:04:32		56.6
56.6	12:04:33		56.6
56.5	12:04:34		56.5
56.6	12:04:35		56.6
56.7	12:04:36		56.7
57.3	12:04:37		57.3
57.6	12:04:38		57.6
57.5	12:04:39		57.5
57.4	12:04:40		57.4
57.3	12:04:41		57.3
57.0	12:04:42		57.0
57.1	12:04:43		57.1
57.8	12:04:44		57.8
58.3	12:04:45		58.3
58.5	12:04:46		58.5
58.8	12:04:47		58.8
59.0	12:04:48		59.0
59.0	12:04:49		59.0
59.1	12:04:50		59.1
59.0	12:04:51		59.0
59.2	12:04:52		59.2
59.5	12:04:53		59.5
61.2	12:04:54		61.2
62.2	12:04:55		62.2
61.4	12:04:56		61.4
60.4	12:04:57		60.4
59.8	12:04:58		59.8
59.4	12:04:59		59.4
59.2	12:05:00		59.2
59.1	12:05:01		59.1
59.1	12:05:02		59.1
58.5	12:05:03		58.5
57.6	12:05:04		57.6
58.0	12:05:05		58.0
59.8	12:05:06		59.8
60.0	12:05:07		60.0
58.9	12:05:08		58.9
58.0	12:05:09		58.0
57.6	12:05:10		57.6
57.6	12:05:11		57.6
57.7	12:05:12		57.7
58.1	12:05:13		58.1
58.5	12:05:14		58.5
61.5	12:05:15		61.5
63.6	12:05:16		63.6
62.6	12:05:17		62.6
66.0	12:05:18		66.0
66.4	12:05:19		66.4
68.0	12:05:20		68.0
65.4	12:05:21		65.4
64.7	12:05:22		64.7
64.0	12:05:23		64.0
62.3	12:05:24		62.3
60.5	12:05:25		60.5
59.2	12:05:26		59.2
58.4	12:05:27		58.4
58.1	12:05:28		58.1
57.9	12:05:29		57.9
58.3	12:05:30		58.3
59.1	12:05:31		59.1
59.6	12:05:32		59.6
59.8	12:05:33		59.8
60.4	12:05:34		60.4
60.8	12:05:35		60.8
61.8	12:05:36		61.8

Site 2 - Near Southwest Corner of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn CNEL
56.0	12:07:09		56.0
56.3	12:07:10		56.3
54.5	12:07:11		54.5
53.9	12:07:12		53.9
53.5	12:07:13		53.5
53.3	12:07:14		53.3
53.6	12:07:15		53.6
54.4	12:07:16		54.4
54.1	12:07:17		54.1
53.7	12:07:18		53.7
53.3	12:07:19		53.3
53.8	12:07:20		53.8
54.2	12:07:21		54.2
55.3	12:07:22		55.3
55.4	12:07:23		55.4
54.8	12:07:24		54.8
54.3	12:07:25		54.3
54.0	12:07:26		54.0
53.6	12:07:27		53.6
53.9	12:07:28		53.9
54.1	12:07:29		54.1
54.3	12:07:30		54.3
55.3	12:07:31		55.3
55.7	12:07:32		55.7
55.9	12:07:33		55.9
55.8	12:07:34		55.8
56.0	12:07:35		56.0
57.3	12:07:36		57.3
57.3	12:07:37		57.3
56.7	12:07:38		56.7
56.0	12:07:39		56.0
56.1	12:07:40		56.1
56.3	12:07:41		56.3
56.3	12:07:42		56.3
56.1	12:07:43		56.1
56.0	12:07:44		56.0
51.9	12:07:45		51.9
56.7	12:07:46		56.7
56.6	12:07:47		56.6
56.5	12:07:48		56.5
57.0	12:07:49		57.0
56.6	12:07:50		56.6
55.2	12:07:51		55.2
54.7	12:07:52		54.7
55.7	12:07:53		55.7
56.3	12:07:54		56.3
56.9	12:07:55		56.9
56.7	12:07:56		56.7
57.6	12:07:57		57.6
58.8	12:07:58		58.8
58.2	12:07:59		58.2
58.2	12:08:00		58.2
57.9	12:08:01		57.9
58.1	12:08:02		58.1
58.2	12:08:03		58.2
57.9	12:08:04		57.9
61.9	12:08:05		61.9
57.1	12:08:06		57.1
56.2	12:08:07		56.2
55.6	12:08:08		55.6
55.1	12:08:09		55.1
56.0	12:08:10		56.0
55.4	12:08:11		55.4
56.1	12:08:12		56.1
56.3	12:08:13		56.3
57.0	12:08:14		57.0
56.3	12:08:15		56.3
56.7	12:08:16		56.7
57.3	12:08:17		57.3
58.1	12:08:18		58.1
58.3	12:08:19		58.3
59.5	12:08:20		59.5
60.9	12:08:21		60.9
62.7	12:08:22		62.7
63.9	12:08:23		63.9
61.6	12:08:24		61.6
60.0	12:08:25		60.0
56.3	12:08:26		56.3
58.7	12:08:27		58.7
58.4	12:08:28		58.4
58.0	12:08:29		58.0
57.9	12:08:30		57.9
57.7	12:08:31		57.7
56.6	12:08:32		56.6
56.2	12:08:33		56.2
57.3	12:08:34		57.3
56.1	12:08:35		56.1
55.8	12:08:36		55.8
55.0	12:08:37		55.0
54.7	12:08:38		54.7
54.8	12:08:39		54.8
55.1	12:08:40		55.1
54.6	12:08:41		54.6
53.9	12:08:42		53.9
56.3	12:08:43		56.3
53.1	12:08:44		53.1
53.1	12:08:45		53.1
53.0	12:08:46		53.0
53.6	12:08:47		53.6
53.3	12:08:48		53.3
53.2	12:08:49		53.2
53.4	12:08:50		53.4
53.4	12:08:51		53.4
53.5	12:08:52		53.5
53.4	12:08:53		53.4
53.6	12:08:54		53.6
53.3	12:08:55		53.3
53.0	12:08:56		53.0
52.8	12:08:57		52.8
52.9	12:08:58		52.9
53.2	12:08:59		53.2
53.6	12:09:00		53.6
53.7	12:09:01		53.7
53.8	12:09:02		53.8
54.2	12:09:03		54.2
54.7	12:09:04		54.7
55.0	12:09:05		55.0
54.4	12:09:06		54.4
54.4	12:09:07		54.4
54.8	12:09:08		54.8
55.4	12:09:09		55.4
55.6	12:09:10		55.6
55.7	12:09:11		55.7
55.2	12:09:12		55.2
54.6	12:09:13		54.6
54.3	12:09:14		54.3
54.3	12:09:15		54.3
54.1	12:09:16		54.1
54.2	12:09:17		54.2
54.7	12:09:18		54.7
55.5	12:09:19		55.5
57.5	12:09:20		57.5
58.8	12:09:21		58.8
56.6	12:09:22		56.6
55.2	12:09:23		55.2
54.8	12:09:24		54.8
54.9	12:09:25		54.9
54.6	12:09:26		54.6
54.8	12:09:27		54.8
55.3	12:09:28		55.3
61.6	12:09:29		

APPENDIX C

FHWA Model Traffic Noise Calculations Printouts

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

Scenario: EXISTING CONDITIONS

Project: Van Buren 7-Eleven
Site Conditions: Soft

Vehicle Type	Vehicle Mix 1 (Local)			Vehicle Mix 2 (Arterial)			Vehicle Mix 3 (SR-91)		
	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night
Automobiles	73.60%	13.60%	10.22%	69.50%	12.90%	9.60%	63.35%	12.98%	15.19%
Medium Trucks	0.90%	0.90%	0.04%	1.44%	0.06%	1.50%	2.15%	0.39%	1.09%
Heavy Trucks	0.35%	0.04%	0.35%	2.40%	0.10%	2.50%	2.65%	0.25%	1.94%
			0.74%			5.00%			4.85%

Road Name: Van Buren Boulevard **Segment: North of Primrose Drive**
 Average Daily Traffic: 34900 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: Special

Vehicle Type	NOISE PARAMETERS AT 65 FEET FROM CENTERLINE (Equiv. Lane Dist: 54.12 ft)						Centerline Distance to Noise Contour (in feet)			
	Noise Adjustments			Unmitigated Noise Levels			Ldn	CNEL		
	REML Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	
Automobiles	67.36	3.74	-0.62	-1.20	69.28	66.91	65.62	59.56	67.99	68.62
Medium Trucks	76.31	-11.13	-0.62	-1.20	63.37	44.16	36.38	45.59	51.74	51.77
Heavy Trucks	81.16	-8.91	-0.62	-1.20	70.43	53.44	45.66	54.87	61.02	61.06
Total:					73.36	67.12	65.66	60.96	68.87	69.40

Road Name: Van Buren Boulevard **Segment: South of Project Driveway 2**
 Average Daily Traffic: 42500 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: Special

Vehicle Type	NOISE PARAMETERS AT 115 FEET FROM CENTERLINE (Equiv. Lane Dist: 109.22 ft)						Centerline Distance to Noise Contour (in feet)			
	Noise Adjustments			Unmitigated Noise Levels			Ldn	CNEL		
	REML Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	
Automobiles	67.36	4.60	-5.19	-1.20	65.56	63.19	61.90	55.84	64.27	64.91
Medium Trucks	76.31	-10.27	-5.19	-1.20	59.65	40.44	32.66	41.87	48.02	48.06
Heavy Trucks	81.16	-8.05	-5.19	-1.20	66.71	49.72	41.94	51.15	57.30	57.34
Total:					69.64	63.40	61.95	57.24	65.15	65.68

Road Name: Van Buren Boulevard **Segment: South of Indiana Avenue**
 Average Daily Traffic: 44300 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: Special

Vehicle Type	NOISE PARAMETERS AT 95 FEET FROM CENTERLINE (Equiv. Lane Dist: 87.91 ft)						Centerline Distance to Noise Contour (in feet)			
	Noise Adjustments			Unmitigated Noise Levels			Ldn	CNEL		
	REML Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	
Automobiles	67.36	4.78	-3.78	-1.20	67.16	64.78	63.49	57.44	65.87	66.50
Medium Trucks	76.31	-10.09	-3.78	-1.20	61.24	42.03	34.25	43.46	49.61	49.65
Heavy Trucks	81.16	-7.87	-3.78	-1.20	68.31	51.32	43.54	52.74	58.90	58.93
Total:					71.24	65.00	63.54	58.83	66.75	67.28

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

Scenario: EXISTING CONDITIONS

Project: Van Buren 7-Eleven
Site Conditions: Soft

Road Name: Primrose Drive **Segment:** West of Project Driveway 1

Average Daily Traffic: 8200 Vehicles Vehicle Speed: 25 MPH Vehicle Mix: 1 Roadway Classification: Collector

Vehicle Type	NOISE PARAMETERS AT 40 FEET FROM CENTERLINE (Equiv. Lane Dist: 38.97 ft)				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	59.44	-0.26	1.52	-1.20	59.50	57.38	56.06	50.05	58.47	59.10	70 dBA:	7	8
Medium Trucks	71.09	-17.50	1.52	-1.20	53.91	32.66	38.68	20.39	33.53	36.28	65 dBA:	15	16
Heavy Trucks	78.74	-21.45	1.52	-1.20	57.61	32.25	28.85	33.50	39.70	39.80	60 dBA:	32	35
Total:											55 dBA:	69	76

Road Name: Andrew Street

Segment: East of Van Buren Boulevard

Average Daily Traffic: 4900 Vehicles Vehicle Speed: 55 MPH Vehicle Mix: 1 Roadway Classification: Collector

Vehicle Type	NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 54.26 ft)				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	59.44	-2.50	-0.64	-1.20	55.11	52.98	51.67	45.66	54.08	54.71	70 dBA:	5	5
Medium Trucks	71.09	-19.73	-0.64	-1.20	49.52	28.27	34.29	15.99	29.14	31.89	65 dBA:	10	11
Heavy Trucks	78.74	-23.69	-0.64	-1.20	53.21	27.86	24.46	29.11	35.31	35.41	60 dBA:	22	25
Total:											55 dBA:	48	53

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

Scenario: EXISTING WITH PROJECT CONDITIONS

Project: Van Buren 7-Eleven
Site Conditions: Soft

Vehicle Type	Vehicle Mix 1 (Local)			Vehicle Mix 2 (Arterial)			Vehicle Mix 3 (SR-91)		
	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night
Automobiles	73.60%	13.60%	10.22%	69.50%	12.90%	9.60%	63.35%	12.98%	15.19%
Medium Trucks	0.90%	0.90%	0.04%	1.44%	0.06%	1.50%	2.15%	0.39%	1.09%
Heavy Trucks	0.35%	0.04%	0.35%	2.40%	0.10%	2.50%	2.65%	0.25%	1.94%
			0.74%			5.00%			4.85%

Road Name: Van Buren Boulevard		Segment: North of Primrose Drive		Roadway Classification: Special					
Average Daily Traffic: 35220 Vehicles		Vehicle Speed: 40 MPH		Vehicle Mix: 2					
NOISE PARAMETERS AT 65 FEET FROM CENTERLINE (Equiv. Lane Dist: 54.12 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	3.78	-0.62	69.32	66.95	65.66	59.60	68.03	68.66
Medium Trucks	76.31	-11.09	-0.62	63.41	44.20	36.42	45.63	51.78	51.81
Heavy Trucks	81.16	-8.87	-0.62	70.47	53.48	45.70	54.91	61.06	61.10
Total:				73.40	67.16	65.70	61.00	68.91	69.44
				70 dBA:		55		60	
				65 dBA:		119		128	
				60 dBA:		255		277	
				55 dBA:		550		596	

Road Name: Van Buren Boulevard		Segment: South of Project Driveway 2		Roadway Classification: Special					
Average Daily Traffic: 42820 Vehicles		Vehicle Speed: 40 MPH		Vehicle Mix: 2					
NOISE PARAMETERS AT 115 FEET FROM CENTERLINE (Equiv. Lane Dist: 109.22 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	4.63	-5.19	65.59	63.22	61.93	55.88	64.31	64.94
Medium Trucks	76.31	-10.24	-5.19	59.68	40.47	32.69	41.90	48.05	48.09
Heavy Trucks	81.16	-8.02	-5.19	66.75	49.76	41.98	51.18	57.34	57.37
Total:				69.68	63.44	61.98	57.27	65.19	65.71
				70 dBA:		55		60	
				65 dBA:		118		128	
				60 dBA:		255		276	
				55 dBA:		549		596	

Road Name: Van Buren Boulevard		Segment: South of Indiana Avenue		Roadway Classification: Special					
Average Daily Traffic: 44380 Vehicles		Vehicle Speed: 40 MPH		Vehicle Mix: 2					
NOISE PARAMETERS AT 95 FEET FROM CENTERLINE (Equiv. Lane Dist: 87.91 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	4.78	-3.78	67.16	64.79	63.50	57.44	65.88	66.51
Medium Trucks	76.31	-10.08	-3.78	61.25	42.04	34.26	43.47	49.62	49.66
Heavy Trucks	81.16	-7.86	-3.78	68.32	51.33	43.54	52.75	58.91	58.94
Total:				71.25	65.01	63.55	58.84	66.76	67.28
				70 dBA:		58		63	
				65 dBA:		124		135	
				60 dBA:		268		291	
				55 dBA:		577		626	

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

Scenario: EXISTING WITH PROJECT CONDITIONS

Project: Van Buren 7-Eleven
Site Conditions: Soft

Road Name: **Primrose Drive** Segment: **West of Project Driveway 1** Roadway Classification: Collector
Average Daily Traffic: 8280 Vehicles Vehicle Speed: 25 MPH Vehicle Mix: 1

Vehicle Type	NOISE PARAMETERS AT 40 FEET FROM CENTERLINE (Equiv. Lane Dist: 38.97 ft)				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	59.44	-0.22	1.52	-1.20	59.54	57.42	56.11	50.09	58.51	59.14	70 dBA:	7	8
Medium Trucks	71.09	-17.46	1.52	-1.20	53.95	32.70	38.72	20.43	33.57	36.32	65 dBA:	15	16
Heavy Trucks	78.74	-21.41	1.52	-1.20	57.65	32.30	28.90	33.55	39.75	39.84	60 dBA:	32	35
Total:											55 dBA:	69	76

Road Name: **Andrew Street**

Segment: **East of Van Buren Boulevard**

Average Daily Traffic: 4980 Vehicles Vehicle Speed: 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 54.26 ft) Roadway Classification: Collector

Vehicle Type	NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 54.26 ft)				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	59.44	-2.43	-0.64	-1.20	55.18	53.06	51.74	45.73	54.15	54.78	70 dBA:	5	5
Medium Trucks	71.09	-19.66	-0.64	-1.20	49.59	28.34	34.36	16.07	29.21	31.96	65 dBA:	11	12
Heavy Trucks	78.74	-23.62	-0.64	-1.20	53.28	27.93	24.53	29.18	35.38	35.48	60 dBA:	23	25
Total:											55 dBA:	49	54

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

Scenario: OPENING YEAR 2026 WITHOUT PROJECT CONDITIONS

Project: Van Buren 7-Eleven
Site Conditions: Soft

Vehicle Type	Vehicle Mix 1 (Local)			Vehicle Mix 2 (Arterial)			Vehicle Mix 3 (SR-91)		
	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night
Automobiles	73.60%	13.60%	10.22%	69.50%	12.90%	9.60%	63.35%	12.98%	15.19%
Medium Trucks	0.90%	0.90%	0.04%	1.44%	0.06%	1.50%	2.15%	0.39%	1.09%
Heavy Trucks	0.35%	0.04%	0.35%	2.40%	0.10%	2.50%	2.65%	0.25%	1.94%
			0.74%			5.00%			4.85%

Road Name: Van Buren Boulevard		Segment: North of Primrose Drive		Roadway Classification: Special					
Average Daily Traffic: 44800 Vehicles		Vehicle Speed: 40 MPH		Vehicle Mix: 2					
NOISE PARAMETERS AT 65 FEET FROM CENTERLINE (Equiv. Lane Dist: 54.12 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	4.82	-1.20	70.37	67.99	66.70	60.65	69.08	69.71
Medium Trucks	76.31	-10.04	-1.20	64.45	45.24	37.46	46.67	52.82	52.86
Heavy Trucks	81.16	-7.82	-1.20	71.52	54.53	46.75	55.95	62.11	62.14
Total:				74.45	68.21	66.75	62.04	69.96	70.48
				70 dBA:		65 dBA:		65 dBA:	
								60 dBA:	
								55 dBA:	

Road Name: Van Buren Boulevard		Segment: South of Project Driveway 2		Roadway Classification: Special					
Average Daily Traffic: 54100 Vehicles		Vehicle Speed: 40 MPH		Vehicle Mix: 2					
NOISE PARAMETERS AT 115 FEET FROM CENTERLINE (Equiv. Lane Dist: 109.22 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	5.64	-5.19	66.61	64.24	62.95	56.89	65.32	65.95
Medium Trucks	76.31	-9.22	-5.19	60.70	41.49	33.71	42.92	49.07	49.10
Heavy Trucks	81.16	-7.00	-5.19	67.76	50.77	42.99	52.20	58.35	58.39
Total:				70.69	64.45	62.99	58.29	66.20	66.73
				70 dBA:		65 dBA:		64 dBA:	
								60 dBA:	
								55 dBA:	

Road Name: Van Buren Boulevard		Segment: South of Indiana Avenue		Roadway Classification: Special					
Average Daily Traffic: 48100 Vehicles		Vehicle Speed: 40 MPH		Vehicle Mix: 2					
NOISE PARAMETERS AT 95 FEET FROM CENTERLINE (Equiv. Lane Dist: 87.91 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	5.13	-3.78	67.51	65.14	63.85	57.79	66.23	66.86
Medium Trucks	76.31	-9.73	-3.78	61.60	42.39	34.61	43.82	49.97	50.01
Heavy Trucks	81.16	-7.51	-3.78	68.66	51.68	43.89	53.10	59.26	59.29
Total:				71.60	65.35	63.90	59.19	67.11	67.63
				70 dBA:		65 dBA:		61 dBA:	
								60 dBA:	
								55 dBA:	

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

Scenario: OPENING YEAR 2026 WITHOUT PROJECT CONDITIONS

**Project: Van Buren 7-Eleven
Site Conditions: Soft**

Road Name: Primrose Drive **Segment: West of Project Driveway 1**

Average Daily Traffic: 10300 Vehicles Vehicle Speed: 25 MPH Vehicle Mix: 1 Roadway Classification: Collector

Vehicle Type	NOISE PARAMETERS AT 40 FEET FROM CENTERLINE (Equiv. Lane Dist: 38.97 ft)				Centerline Distance to Noise Contour (in feet)														
	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Night	Ldn	CNEL											
Automobiles	59.44	0.73	1.52	-1.20	60.49	58.37	57.05	51.04	59.46	60.09	70 dBA:	8	9						
Medium Trucks	71.09	-16.51	1.52	-1.20	54.90	33.65	39.67	21.38	34.52	37.27	65 dBA:	17	19						
Heavy Trucks	78.74	-20.46	1.52	-1.20	58.60	33.24	29.85	34.49	40.69	40.79	60 dBA:	37	41						
Total:											63.33	58.39	57.14	51.14	59.53	60.16	55 dBA:	80	88

Road Name: Andrew Street **Segment: East of Van Buren Boulevard**

Average Daily Traffic: 5800 Vehicles Vehicle Speed: 55 MPH Vehicle Mix: 1 Roadway Classification: Collector

Vehicle Type	NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 54.26 ft)				Centerline Distance to Noise Contour (in feet)														
	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Night	Ldn	CNEL											
Automobiles	59.44	-1.76	-0.64	-1.20	55.84	53.72	52.40	46.39	54.81	55.44	70 dBA:	5	6						
Medium Trucks	71.09	-19.00	-0.64	-1.20	50.25	29.00	35.02	16.73	29.87	32.62	65 dBA:	12	13						
Heavy Trucks	78.74	-22.96	-0.64	-1.20	53.95	28.60	25.20	29.84	36.04	36.14	60 dBA:	25	28						
Total:											58.68	53.75	52.49	46.49	54.88	55.51	55 dBA:	54	59

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

Scenario: OPENING YEAR 2026 WITH PROJECT CONDITIONS

Project: Van Buren 7-Eleven
Site Conditions: Soft

Vehicle Type	Vehicle Mix 1 (Local)			Vehicle Mix 2 (Arterial)			Vehicle Mix 3 (SR-91)					
	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night	Daily		
Automobiles	73.60%	13.60%	10.22%	97.42%	69.50%	12.90%	9.60%	92.00%	63.35%	12.98%	15.19%	91.52%
Medium Trucks	0.90%	0.90%	0.04%	1.84%	1.44%	0.06%	1.50%	3.00%	2.15%	0.39%	1.09%	3.63%
Heavy Trucks	0.35%	0.04%	0.35%	0.74%	2.40%	0.10%	2.50%	5.00%	2.65%	0.25%	1.94%	4.85%

Road Name: Van Buren Boulevard

Segment: North of Primrose Drive

Average Daily Traffic: 45120 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: Special

Vehicle Type	NOISE PARAMETERS AT 65 FEET FROM CENTERLINE (Equiv. Lane Dist: 54.12 ft)						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	4.86	-1.20	70.40	68.02	66.73	60.68	69.11	69.74
Medium Trucks	76.31	-10.01	-1.20	64.48	45.27	37.49	46.70	52.86	52.89
Heavy Trucks	81.16	-7.79	-1.20	71.55	54.56	46.78	55.98	62.14	62.17
Total:				74.48	68.24	66.78	62.07	69.99	70.52

Road Name: Van Buren Boulevard

Segment: South of Project Driveway 2

Average Daily Traffic: 54420 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: Special

Vehicle Type	NOISE PARAMETERS AT 115 FEET FROM CENTERLINE (Equiv. Lane Dist: 109.22 ft)						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	5.67	-5.19	66.64	64.26	62.97	56.92	65.35	65.98
Medium Trucks	76.31	-9.20	-5.19	60.72	41.51	33.73	42.94	49.09	49.13
Heavy Trucks	81.16	-6.98	-5.19	67.79	50.80	43.02	52.22	58.38	58.41
Total:				70.72	64.48	63.02	58.31	66.23	66.76

Road Name: Van Buren Boulevard

Segment: South of Indiana Avenue

Average Daily Traffic: 48180 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: Special

Vehicle Type	NOISE PARAMETERS AT 95 FEET FROM CENTERLINE (Equiv. Lane Dist: 87.91 ft)						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	5.14	-3.78	67.52	65.15	63.86	57.80	66.23	66.86
Medium Trucks	76.31	-9.73	-3.78	61.61	42.40	34.62	43.83	49.98	50.01
Heavy Trucks	81.16	-7.51	-3.78	68.67	51.68	43.90	53.11	59.26	59.30
Total:				71.60	65.36	63.90	59.20	67.11	67.64

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

Scenario: OPENING YEAR 2026 WITH PROJECT CONDITIONS

Project: Van Buren 7-Eleven
Site Conditions: Soft

Road Name: **Primrose Drive** Segment: **West of Project Driveway 1** Roadway Classification: Collector
Average Daily Traffic: 10380 Vehicles Vehicle Speed: 25 MPH Vehicle Mix: 1

Vehicle Type	NOISE PARAMETERS AT 40 FEET FROM CENTERLINE (Equiv. Lane Dist: 38.97 ft)				Centerline Distance to Noise Contour (in feet)														
	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Night	Ldn	CNEL											
Automobiles	59.44	0.76	1.52	-1.20	60.52	58.40	57.09	51.08	59.49	60.12	70 dBA:	8	9						
Medium Trucks	71.09	-16.47	1.52	-1.20	54.93	33.68	39.70	21.41	34.55	37.31	65 dBA:	17	19						
Heavy Trucks	78.74	-20.43	1.52	-1.20	58.63	33.28	29.88	34.53	40.73	40.82	60 dBA:	37	41						
Total:											63.36	58.43	57.17	51.18	59.57	60.19	55 dBA:	81	89

Road Name: **Andrew Street** Segment: **East of Van Buren Boulevard** Roadway Classification: Collector
Average Daily Traffic: 5880 Vehicles Vehicle Speed: 55 MPH Vehicle Mix: 1

Vehicle Type	NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 54.26 ft)				Centerline Distance to Noise Contour (in feet)														
	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Night	Ldn	CNEL											
Automobiles	59.44	-1.70	-0.64	-1.20	55.90	53.78	52.46	46.45	54.87	55.50	70 dBA:	5	6						
Medium Trucks	71.09	-18.94	-0.64	-1.20	50.31	29.06	35.08	16.79	29.93	32.68	65 dBA:	12	13						
Heavy Trucks	78.74	-22.90	-0.64	-1.20	54.01	28.65	25.26	29.90	36.10	36.20	60 dBA:	25	28						
Total:											58.74	53.80	52.55	46.55	54.94	55.57	55 dBA:	55	60

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

Scenario: CUMULATIVE YEAR 2045 WITHOUT PROJECT CONDITIONS

**Project: Van Buren 7-Eleven
Site Conditions: Soft**

Vehicle Type	Vehicle Mix 1 (Local)			Vehicle Mix 2 (Arterial)			Vehicle Mix 3 (SR-91)		
	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night
Automobiles	73.60%	13.60%	10.22%	69.50%	12.90%	9.60%	63.35%	12.98%	15.19%
Medium Trucks	0.90%	0.90%	0.04%	1.44%	0.06%	1.50%	2.15%	0.39%	1.09%
Heavy Trucks	9.00%	0.04%	0.35%	2.40%	0.10%	2.50%	2.65%	0.25%	1.94%
			0.74%			5.00%			4.85%

Road Name: Van Buren Boulevard		Segment: North of Primrose Drive		Roadway Classification: Special					
Average Daily Traffic: 49300 Vehicles		Vehicle Speed: 40 MPH		Vehicle Mix: 2					
NOISE PARAMETERS AT 65 FEET FROM CENTERLINE (Equiv. Lane Dist: 54.12 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	5.24	-0.62	70.78	68.41	67.12	61.06	69.49	70.12
Medium Trucks	76.31	-9.63	-0.62	64.87	45.66	37.88	47.09	53.24	53.27
Heavy Trucks	81.16	-7.41	-0.62	71.93	54.94	47.16	56.37	62.52	62.56
Total:				74.86	68.62	67.16	62.46	70.37	70.90

Road Name: Van Buren Boulevard		Segment: South of Project Driveway 2		Roadway Classification: Special					
Average Daily Traffic: 59500 Vehicles		Vehicle Speed: 40 MPH		Vehicle Mix: 2					
NOISE PARAMETERS AT 115 FEET FROM CENTERLINE (Equiv. Lane Dist: 109.22 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	6.06	-5.19	67.02	64.65	63.36	57.30	65.74	66.37
Medium Trucks	76.31	-8.81	-5.19	61.11	41.90	34.12	43.33	49.48	49.52
Heavy Trucks	81.16	-6.59	-5.19	68.18	51.19	43.40	52.61	58.77	58.80
Total:				71.11	64.86	63.41	58.70	66.62	67.14

Road Name: Van Buren Boulevard		Segment: South of Indiana Avenue		Roadway Classification: Special					
Average Daily Traffic: 53000 Vehicles		Vehicle Speed: 40 MPH		Vehicle Mix: 2					
NOISE PARAMETERS AT 95 FEET FROM CENTERLINE (Equiv. Lane Dist: 87.91 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	5.55	-3.78	67.93	65.56	64.27	58.22	66.65	67.28
Medium Trucks	76.31	-9.31	-3.78	62.02	42.81	35.03	44.24	50.39	50.43
Heavy Trucks	81.16	-7.09	-3.78	69.09	52.10	44.32	53.52	59.68	59.71
Total:				72.02	65.78	64.32	59.61	67.53	68.05

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

Scenario: CUMULATIVE YEAR 2045 WITHOUT PROJECT CONDITIONS

Project: Van Buren 7-Eleven
Site Conditions: Soft

Road Name: **Primrose Drive** Segment: **West of Project Driveway 1** Roadway Classification: Collector
Average Daily Traffic: 11300 Vehicles Vehicle Speed: 25 MPH Vehicle Mix: 1

Vehicle Type	NOISE PARAMETERS AT 40 FEET FROM CENTERLINE (Equiv. Lane Dist: 38.97 ft)				Centerline Distance to Noise Contour (in feet)														
	REMEL Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Night	Ldn	CNEL											
Automobiles	59.44	1.13	1.52	-1.20	60.89	58.77	57.46	51.44	59.86	60.49	70 dBA:	9	10						
Medium Trucks	71.09	-16.11	1.52	-1.20	55.30	34.05	40.07	21.78	34.92	37.68	65 dBA:	19	21						
Heavy Trucks	78.74	-20.06	1.52	-1.20	59.00	47.75	30.25	34.90	46.18	46.21	60 dBA:	40	44						
Total:											63.73	59.11	57.54	51.54	60.06	60.67	55 dBA:	87	96

Road Name: **Andrew Street** Segment: **East of Van Buren Boulevard** Roadway Classification: Collector
Average Daily Traffic: 6700 Vehicles Vehicle Speed: 25 MPH Vehicle Mix: 1

Vehicle Type	NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 54.26 ft)				Centerline Distance to Noise Contour (in feet)														
	REMEL Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Night	Ldn	CNEL											
Automobiles	59.44	-1.14	-0.64	-1.20	56.47	54.34	53.03	47.02	55.44	56.07	70 dBA:	6	7						
Medium Trucks	71.09	-18.38	-0.64	-1.20	50.88	29.63	35.65	17.35	30.50	33.25	65 dBA:	13	14						
Heavy Trucks	78.74	-22.33	-0.64	-1.20	54.57	43.32	25.82	30.47	41.75	41.78	60 dBA:	28	31						
Total:											59.31	54.69	53.12	47.12	55.63	56.25	55 dBA:	61	67

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

Scenario: CUMULATIVE YEAR 2045 WITH PROJECT CONDITIONS

Project: Van Buren 7-Eleven
Site Conditions: Soft

Vehicle Type	Vehicle Mix 1 (Local)			Vehicle Mix 2 (Arterial)			Vehicle Mix 3 (SR-91)		
	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night
Automobiles	73.60%	13.60%	10.22%	69.50%	12.90%	9.60%	63.35%	12.98%	15.19%
Medium Trucks	0.90%	0.90%	0.04%	1.44%	0.06%	1.50%	2.15%	0.39%	1.09%
Heavy Trucks	9.00%	0.04%	0.35%	2.40%	0.10%	2.50%	2.65%	0.25%	1.94%
			0.74%			5.00%			4.85%

Road Name: Van Buren Boulevard		Segment: North of Primrose Drive		Roadway Classification: Special					
Average Daily Traffic: 49620 Vehicles		Vehicle Speed: 40 MPH		Vehicle Mix: 2					
NOISE PARAMETERS AT 65 FEET FROM CENTERLINE (Equiv. Lane Dist: 54.12 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	5.27	-1.20	70.81	68.44	67.14	61.09	69.52	70.15
Medium Trucks	76.31	-9.60	-1.20	64.90	45.69	37.91	47.11	53.27	53.30
Heavy Trucks	81.16	-7.38	-1.20	71.96	54.97	47.19	56.40	62.55	62.59
Total:				74.89	68.65	67.19	62.49	70.40	70.93

Road Name: Van Buren Boulevard		Segment: South of Project Driveway 2		Roadway Classification: Special					
Average Daily Traffic: 59820 Vehicles		Vehicle Speed: 40 MPH		Vehicle Mix: 2					
NOISE PARAMETERS AT 115 FEET FROM CENTERLINE (Equiv. Lane Dist: 109.22 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	6.08	-5.19	67.05	64.67	63.38	57.33	65.76	66.39
Medium Trucks	76.31	-8.79	-1.20	61.13	41.92	34.14	43.35	49.51	49.54
Heavy Trucks	81.16	-6.57	-1.20	68.20	51.21	43.43	52.64	58.79	58.82
Total:				71.13	64.89	63.43	58.72	66.64	67.17

Road Name: Van Buren Boulevard		Segment: South of Indiana Avenue		Roadway Classification: Special					
Average Daily Traffic: 53080 Vehicles		Vehicle Speed: 40 MPH		Vehicle Mix: 2					
NOISE PARAMETERS AT 95 FEET FROM CENTERLINE (Equiv. Lane Dist: 87.91 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	5.56	-3.78	67.94	65.57	64.28	58.22	66.65	67.28
Medium Trucks	76.31	-9.31	-3.78	62.03	42.82	35.04	44.25	50.40	50.43
Heavy Trucks	81.16	-7.09	-3.78	69.09	52.10	44.32	53.53	59.68	59.72
Total:				72.02	65.78	64.32	59.62	67.53	68.06

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

Scenario: CUMULATIVE YEAR 2045 WITH PROJECT CONDITIONS

Project: Van Buren 7-Eleven
Site Conditions: Soft

Road Name: Primrose Drive Segment: West of Project Driveway 1

Average Daily Traffic: 11380 Vehicles Vehicle Speed: 25 MPH Vehicle Mix: 1 Roadway Classification: Collector

Vehicle Type	NOISE PARAMETERS AT 40 FEET FROM CENTERLINE (Equiv. Lane Dist: 38.97 ft)				Centerline Distance to Noise Contour (in feet)														
	REMEL Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Night	Ldn	CNEL											
Automobiles	59.44	1.16	1.52	-1.20	60.92	58.80	57.49	51.47	59.89	60.52	70 dBA:	9	10						
Medium Trucks	71.09	-16.08	1.52	-1.20	55.33	34.08	40.10	21.81	34.95	37.71	65 dBA:	19	21						
Heavy Trucks	78.74	-20.03	1.52	-1.20	59.03	47.78	30.28	34.93	46.21	46.24	60 dBA:	41	45						
Total:											63.76	59.14	57.57	51.57	60.09	60.70	55 dBA:	87	96

Road Name: Andrew Street Segment: East of Van Buren Boulevard

Average Daily Traffic: 6780 Vehicles Vehicle Speed: 55 MPH Vehicle Mix: 1 Roadway Classification: Collector

Vehicle Type	NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 54.26 ft)				Centerline Distance to Noise Contour (in feet)														
	REMEL Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Night	Ldn	CNEL											
Automobiles	59.44	-1.09	-0.64	-1.20	56.52	54.40	53.08	47.07	55.49	56.12	70 dBA:	6	7						
Medium Trucks	71.09	-18.32	-0.64	-1.20	50.93	29.68	35.70	17.41	30.55	33.30	65 dBA:	13	14						
Heavy Trucks	78.74	-22.28	-0.64	-1.20	54.62	43.38	25.87	30.52	41.81	41.84	60 dBA:	28	31						
Total:											59.36	54.74	53.17	47.17	55.69	56.30	55 dBA:	61	67

APPENDIX D

Reference Noise Measurements Printouts

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

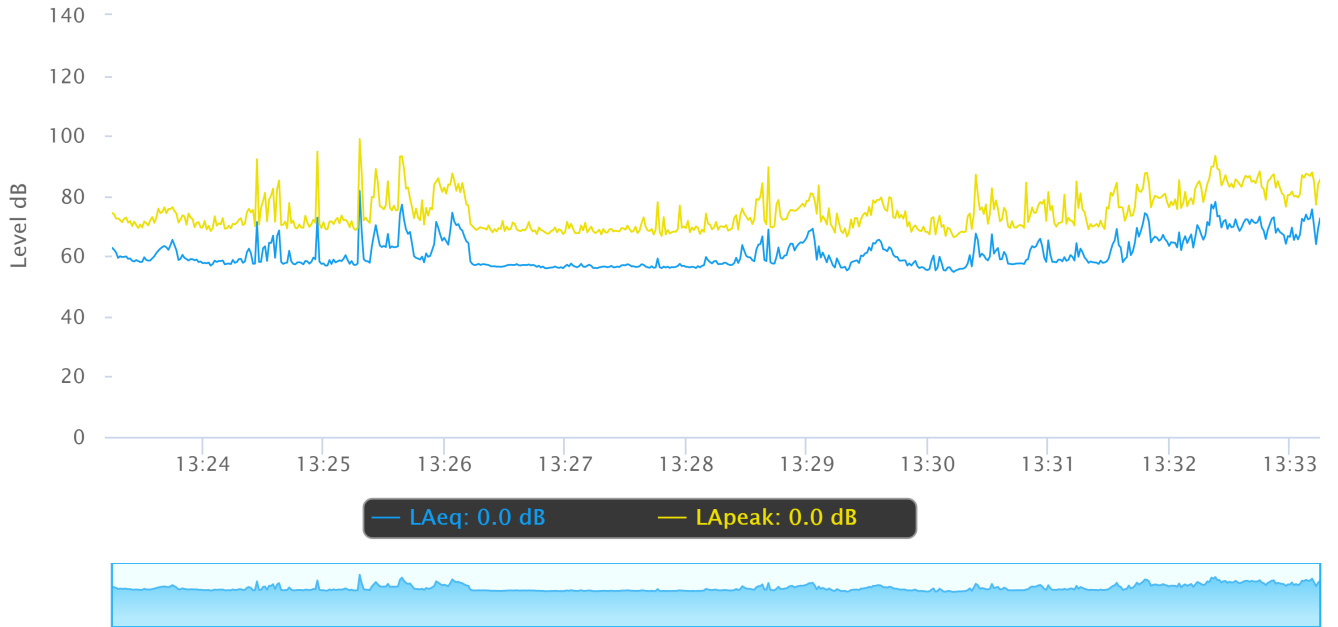
Overloads

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

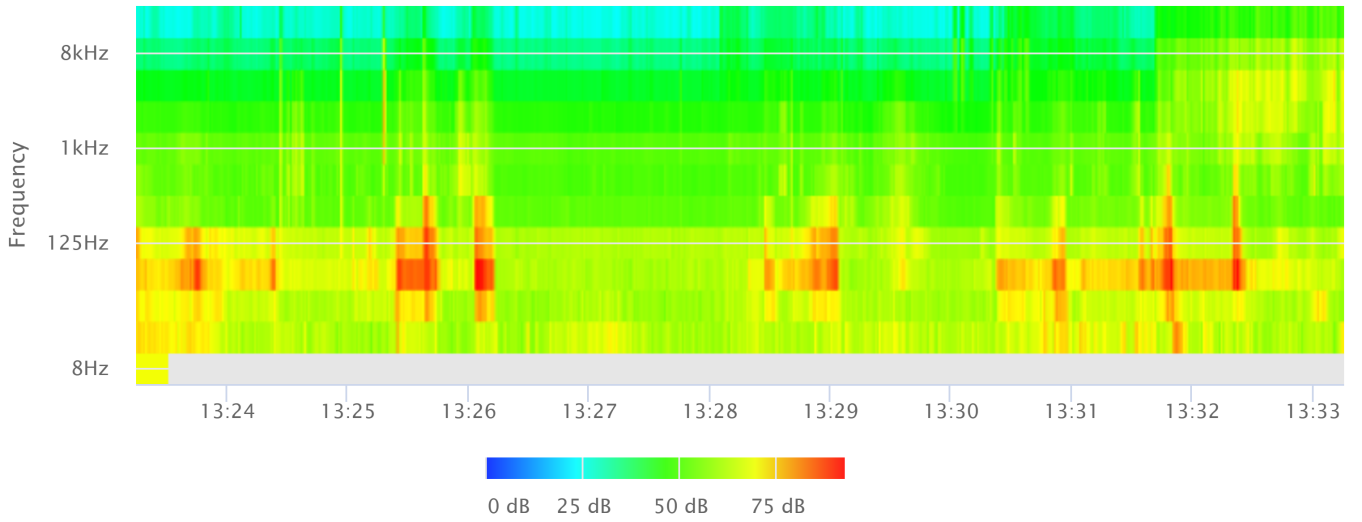
Statistics

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	2.314
Filename	831_Data.005
User	GT
Job Description	Big Bear Alpine Zoo
Location	At Bear Mtn Golf Course Parking Lot
Measurement Description	
Start Time	Wednesday, 2018 October 24 14:09:18
Stop Time	Wednesday, 2018 October 24 14:19:18
Duration	00:10:00.0
Run Time	00:10:00.0
Pause	00:00:00.0
Pre Calibration	Wednesday, 2018 October 24 13:08:44
Post Calibration	None
Calibration Deviation	---

Note

Captured parking lot noise (vehicles idling and driving and slamming car doors and people talking)
 Approx 170 ft N of Goldmine Dr. 64 F, 23.20 Hg, 22% Hu, 5 mph wind, clear sky

Overall Data

LAeq		49.4	dB
LASmax	2018 Oct 24 14:11:55	63.2	dB
LApeak (max)	2018 Oct 24 14:15:56	84.5	dB
LASmin	2018 Oct 24 14:17:21	40.1	dB
LCeq		62.0	dB
LAeq		49.4	dB
LCeq - LAeq		12.6	dB
LAIeq		54.9	dB
LAeq		49.4	dB
LAIeq - LAeq		5.5	dB
Ldn		49.4	dB
LDay 07:00-22:00		49.4	dB
LNight 22:00-07:00		---	dB
Lden		49.4	dB
LDay 07:00-19:00		49.4	dB
LEvening 19:00-22:00		---	dB
LNight 22:00-07:00		---	dB
LAE		77.2	dB
# Overloads		0	
Overload Duration		0.0	s
# OBA Overloads		0	
OBA Overload Duration		0.0	s

Statistics

LAS5.00	54.7	dBA
LAS10.00	52.1	dBA
LAS33.30	47.6	dBA
LAS50.00	45.8	dBA
LAS66.60	44.6	dBA
LAS90.00	42.5	dBA
LAS > 65.0 dB (Exceedence Counts / Duration)	0 / 0.0	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	Low	
OBA Bandwidth	1/1 and 1/3	
OBA Freq. Weighting	Z Weighting	
OBA Max Spectrum	Bin Max	
Gain	+0	dB
Under Range Limit	26.3	dB
Under Range Peak	76.1	dB
Noise Floor	17.1	dB
Overload	143.6	dB

1/1 Spectra

Freq. (Hz):	8.0	16.0	31.5	63.0	125	250	500	1k	2k	4k	8k	16k
LZeq	59.2	56.9	59.4	59.7	52.8	48.3	47.7	44.0	40.4	33.0	24.6	17.6
LZSmax	81.5	75.2	78.6	73.9	71.2	61.5	61.6	57.8	58.8	50.9	42.8	33.9
LZSmin	36.7	39.4	46.2	46.9	42.5	38.9	39.6	31.5	26.9	18.1	12.4	13.2

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	55.0	55.8	52.5	50.9	51.8	53.4	56.3	54.8	51.5	53.0	56.1	55.1
LZSmax	71.9	79.3	74.3	71.2	71.3	73.7	75.7	75.5	70.1	68.2	72.2	68.1
LZSmin	25.8	29.2	31.1	29.5	33.4	32.0	38.2	39.7	36.2	37.6	39.8	38.8
Freq. (Hz):	100	125	160	200	250	315	400	500	630	800	1k	1.25k
LZeq	49.6	47.8	45.0	43.5	43.5	43.7	43.0	43.4	42.2	40.5	38.9	37.9
LZSmax	70.9	63.5	56.4	56.3	58.6	58.0	56.5	58.8	55.5	54.0	53.6	51.9
LZSmin	35.7	37.7	33.9	31.9	31.9	35.3	35.4	35.0	31.4	27.3	26.2	25.4
Freq. (Hz):	1.6k	2k	2.5k	3.15k	4k	5k	6.3k	8k	10k	12.5k	16k	20k
LZeq	38.0	34.6	33.4	30.6	27.3	24.4	22.2	19.1	16.0	13.1	14.1	10.2
LZSmax	59.3	52.6	50.7	49.1	45.1	41.0	39.7	38.2	35.7	30.0	32.6	21.8
LZSmin	24.4	21.2	17.8	15.0	12.6	9.8	8.0	7.3	7.4	7.6	8.6	9.0

Calibration History

Preamp	Date	dB re. 1V/Pa
PRM831	24 Oct 2018 13:08:44	-26.1
PRM831	12 Oct 2018 09:55:27	-25.9
PRM831	26 Sep 2018 15:49:25	-26.2
PRM831	21 Sep 2018 08:51:56	-25.6
PRM831	05 Sep 2018 11:51:21	-25.9
PRM831	13 Jun 2018 13:02:21	-25.7
PRM831	30 Mar 2018 23:00:57	-25.2
PRM831	30 Mar 2018 12:23:25	-25.8
PRM831	07 Mar 2018 13:40:34	-25.8
PRM831	28 Feb 2018 12:16:10	-25.9
PRM831	30 Jan 2018 23:18:32	-26.2

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 07:09:58	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 07:09:50	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 07:11:17	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 07:09:58	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 07:11:17	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 07:09:58	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 07:11:17	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