APPENDIX F

Noise Study

Mission Bell Mixed-Use Project

Noise Study

PREPARED BY:

WESTLAKE VILLAGE OFFICE
920 Hampshire Road, Suite A5
Westlake Village, CA 91361

Meridian Consultants

LOS ANGELES OFFICE
706 S. Hill Street, 11th Floor
Los Angeles, CA 90014

March 2019

Table of Contents

Figures

Tables

EXECUTIVE SUMMARY

The purpose of this Noise and Vibration Technical Report is to assess and discuss the impacts of potential noise and vibration that may occur with the implementation of the Mission Bell Mixed-Use Project located in the City of South Pasadena, California.

The analysis describes the existing noise environment in the Project area, estimates future noise and vibration levels at the surrounding land uses resulting from construction and operation of the Project, and identifies the potential for significant impacts. An evaluation of the Project's contribution to potential cumulative noise impacts is also provided. Noise worksheets and technical data used in this analysis are provided in the Appendices. The report summarizes the potential for the Project to conflict with applicable noise and vibration regulations, standards, and thresholds. The findings of the analyses are as follows:

- Construction activities would potentially result in short-term and temporary noise impacts to nearby noise-sensitive receptors due to on-site construction equipment and activities. Implementation **MM NOI-1** which includes noise-attenuation techniques and placement of the construction-staging area and earthmoving equipment away from noise-sensitive sites would lower construction noise levels.
- Construction of the Project would generate sporadic, temporary vibration effects adjacent to the Project area but would not be expected to exceed the significance thresholds.
- Noise associated with cumulative construction activities would be reduced to the degree reasonably and technically feasible through proposed recommended measures for each individual project and compliance with locally adopted and enforced noise ordinances. Given that construction activities would be required to comply with the City's allowable hours and would be temporary, construction-related noise would not be significant.
- Noise associated with cumulative operational sources would not be significant.
- Due to the rapid attenuation characteristics of ground-borne vibration and the distance of the cumulative projects to the Project site, no potential exists for cumulative construction- or operational-related impacts with respect to ground-borne vibration.

INTRODUCTION

The purpose of this Noise Study is to assess and discuss the effect of potential noise impacts that may occur with the implementation of the Mission Bell Mixed-Use Project, located in South Pasadena, California. The noise report analyzes short-term noise and ground-borne vibration impacts associated with the Project. The report also discusses the applicable federal, State, and local noise and vibration regulations; the applicable noise and vibration thresholds; the methodology used to analyze potential noise and vibration impacts; and the modeled roadway noise.

PROJECT DESCRIPTION

The Applicant is proposing to construct a three-story, mixed-use building located at 1101-1107 Mission Street, rehabilitate the existing historic building at 1115 Mission Street, and construct two levels of subterranean parking beneath the entire Project site.

The Project site currently consists of three buildings. The proposed Project would retain the two-story portion of the building that faces Mission Street, remove two-thirds of the existing 1-story warehouse to the rear, and build a 2-story multifamily residential building on the remainder of the parcel. The proposed Project would consist of 7,335 square feet of commercial space along the Mission Street and Fairview Avenue frontages and 42 residential units on the upper levels totaling 38,020 square feet.

The Project site is located on Mission Street in South Pasadena, as shown in **Figure 1: Regional Location Map**. The Project site is approximately 31,113 square feet (0.71 acres) and is bounded by Mission Street to the north, El Centro Street to the south, Fairview Avenue to the east, and Fremont Avenue to the west, as shown in **Figure 2: Project Site Aerial.**

NOISE DESCRIPTORS

Fundamentals of Sound

Because the human ear does not respond uniformly to sounds at all frequencies, sound-pressure level alone is not a reliable indicator of loudness. For example, the human ear is less sensitive to low and high frequencies than to the medium frequencies that more closely correspond to human speech. In response to human ear's sensitivity to certain sound frequencies, the A-weighted noise level, referenced in units of dB(A), was developed to better correspond with people's subjective judgment of sound levels. To support assessing a community reaction to noise, scales have been developed that average sound-pressure levels over time and quantify the result in terms of a single numerical descriptor. Several scales have been developed that address community noise levels. The equivalent sound level (Leq) is the average A-weighted sound level measured over a given time interval. Leq can be measured over any period but is typically measured for 1-minute, 15-minute, 1-hour, or 24-hour periods.

Table 1: Noise Descriptors, identifies various noise descriptors developed to measure sound levels over different periods of time.

Table 1
Noise Descriptors

Term	Definition
Decibel (dB)	The unit for measuring the volume of sound equal to 10 times the logarithm (base 10) of the ratio of the pressure of a measure sound to a reference pressure.
A-weighted decibel (dB[A])	A sound measurement scale that adjusts the pressure of individual frequencies according to human sensitivities. The scale accounts for the fact that the region of highest sensitivity for the human ear is between 2,000 and 4,000 cycles per second (hertz).
Hertz (Hz)	The frequency of the pressure vibration, which is measured in cycles per second.
Kilo hertz (kHz)	One thousand cycles per second.
Equivalent sound level (Leq)	The sound level containing the same total energy as a time varying signal over a given time period. The Leq is the value that expresses the time averaged total energy of a fluctuating sound level. Leq can be measured over any time period, but is typically measured for 1-minute, 15-minute, 1-hour, or 24-hour periods.
Community noise equivalent level (CNEL)	A rating of community noise exposure to all sources of sound that differentiates between daytime, evening, and nighttime noise exposure. These adjustments add 5 dB(A) for the evening, 7:00 PM to 10:00 PM, and add 10 dB(A) for the night, 10:00 PM to 7:00 AM. The 5- and 10-dB penalties are applied to account for increased noise sensitivity during the evening and nighttime hours. The logarithmic effect of adding these penalties to the 1-hour Leq measurements typically results in a CNEL measurement that is within approximately 3 dB(A) of the peak-hour Leq.[a]
Nighttime (Lnight)	Lnight is the average noise exposure during the hourly periods from 10:00 PM to 7:00 AM.
Sound-pressure level	The sound pressure is the force of sound on a surface area perpendicular to the direction of the sound. The sound-pressure level is expressed in dB.
Ambient noise	The level of noise that is all-encompassing within a given environment, being usually a composite of sounds from many and varied sources near to and far from the observer. No specific source is identified in the ambient environment.

[a] *California Department of Transportation, Technical Noise Supplement; A Technical Supplement to the Traffic Noise Analysis Protocol, (Sacramento, California: November 2009), pp. N51–N54.*

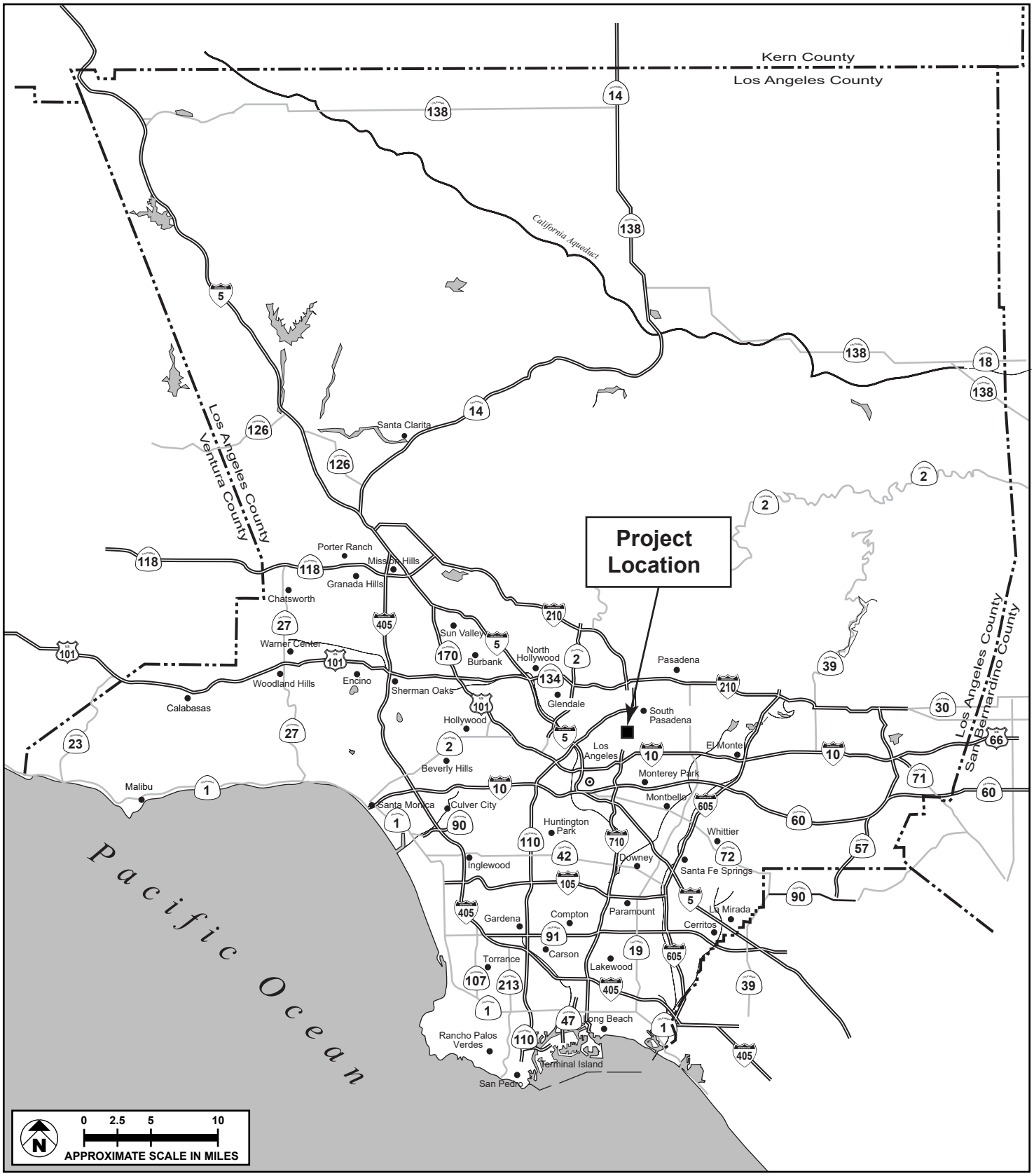


FIGURE **1**

Meridian Consultants

Regional Location Map

234-001-18

SOURCE: Google Earth - 2019

FIGURE **2**

Meridian Consultants

Project Site Aerial

234-001-18

A doubling of sound energy results in a 3 dB(A) increase in sound, which means that a doubling of sound wave energy (e.g., doubling the volume of traffic on a roadway) would result in a barely perceptible change in sound level. In general, changes in a noise level of less than 3 dB(A) are not noticed by the human ear.[1] Changes from 3 to 5 dB(A) may be noticed by some individuals who are extremely sensitive to changes in noise. An increase of greater than 5 dB(A) is readily noticeable, while the human ear perceives a 10 dB(A) increase in sound level to be a doubling of sound volume.

Noise sources can generally be categorized in two types: (1) point sources, such as stationary equipment; and (2) line sources, such as a roadway. Sound generated by a point source typically diminishes (attenuates) at a rate of 6 dB(A) for each doubling of distance from the source to the receptor at acoustically hard sites, and at a rate of 7.5 dB(A) at acoustically soft sites.[2] A hard, or reflective, site consists of asphalt, concrete, or very hard-packed soil, which does not provide any excess ground-effect attenuation. An acoustically soft or absorptive site is characteristic of normal earth and most ground with vegetation. As an example, a 60 dB(A) noise level measured at 50 feet from a point source at an acoustically hard site would be 54 dB(A) at 100 feet from the source and would be 48 dB(A) at 200 feet from the source. Noise from the same point source at an acoustically soft site would be 52.5 dB(A) at 100 feet and 45 dB(A) at 200 feet from the source. Sound generated by a line source typically attenuates at a rate of 3 dB(A) and 4.5 dB(A) per doubling of distance from the source to the receptor for hard and soft sites, respectively.[3] Noise levels generated by a variety of activities are shown in **Figure 3: Common Noise Levels**. Manmade or natural barriers can also attenuate sound levels, as illustrated in **Figure 4: Noise Attenuation by Barriers**.

Fundamentals of Vibration

Vibration is commonly defined as an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. The peak particle velocity (PPV) or the root-mean-square (RMS) velocity is usually used to describe vibration amplitudes. PPV is defined as the maximum instantaneous peak of the vibration signal, while RMS is defined as the square root of the average of the squared amplitude of the signal. PPV is typically used for evaluating potential building damage, whereas RMS is typically more suitable for evaluating human response to ground-borne vibration. The RMS vibration velocity level can be presented in inches per second or in VdB (a decibel unit referenced to 1 microinch per second). Commonly, ground-borne vibration generated by man-made

1 US Department of Transportation, Federal Highway Administration, Fundamentals and Abatement of Highway Traffic Noise (Springfield, VA: Author, September 1980), 81.
2 US Department of Transportation, Fundamentals and Abatement (September 1980), 97.
3 US Department of Transportation, Fundamentals and Abatement (September 1980), 97.

activities (i.e., road traffic, construction activity) attenuates rapidly with distance from the source of the vibration.

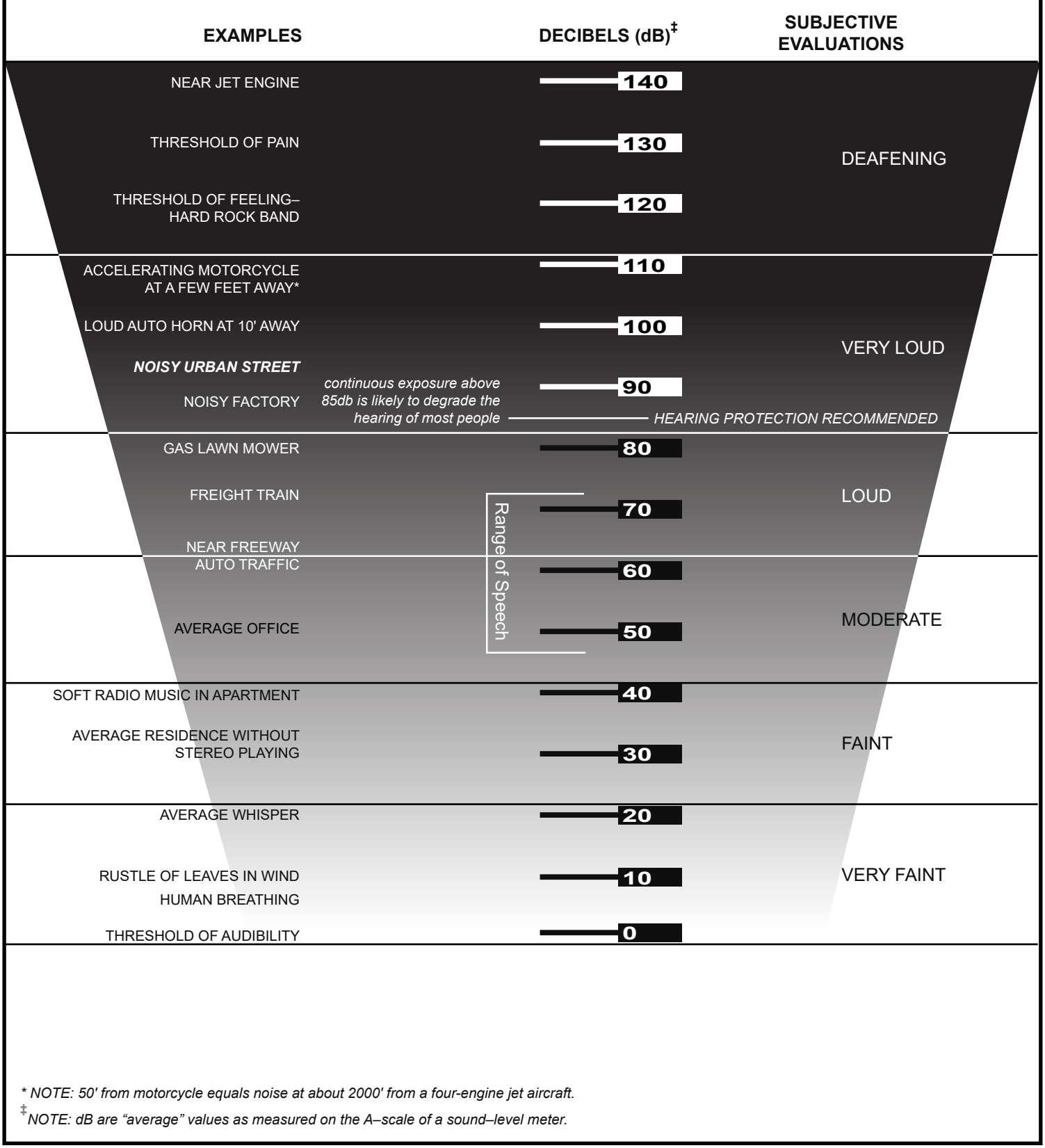
The vibration velocity level threshold of perception for humans is approximately 65 VdB. A vibration velocity of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels for many people. Most perceptible indoor vibration is caused by sources within buildings, such as the operation of mechanical equipment, the movement of people, or the slamming of doors. Typical outdoor sources of perceptible ground-borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the ground-borne vibration from traffic is barely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration velocity, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings.

NOISE STANDARDS

State of California Noise Standards

The State of California, Office of Planning and Research has published, with regard to community noise exposure, recommended guidelines for land use compatibility. These guidelines rate land use compatibility in terms of being *normally acceptable, normally unacceptable,* and *clearly unacceptable*. Each jurisdiction is required to consider these guidelines when developing a General Plan Noise Element and when determining acceptable noise levels within its community. These guidelines are representative of various land uses that include residential, commercial/mixed-use, industrial, and public facilities. **Figure 5: Land-Use Compatibility to Noise,** identifies the acceptable limit of noise exposure for various land use categories within the County. Noise exposure for single-family uses is “normally acceptable” when the CNEL at exterior residential locations is equal to or below 60 dB(A); “conditionally acceptable” when the CNEL is between 55 to 70 dB(A); and “normally unacceptable” when the CNEL exceeds 70 dB(A). These guidelines apply to noise sources such as vehicular traffic, aircraft, and rail movements.

In addition, the California Commission of Housing and Community Development officially adopted interior noise standards in 1974. In 1988, the Building Standards Commission approved revisions to the standards (Title 24, Part 2, California Code of Regulations). As revised, Title 24 establishes an interior noise standard of 45 dB(A) CNEL for residential space.



** NOTE: 50' from motorcycle equals noise at about 2000' from a four-engine jet aircraft.*

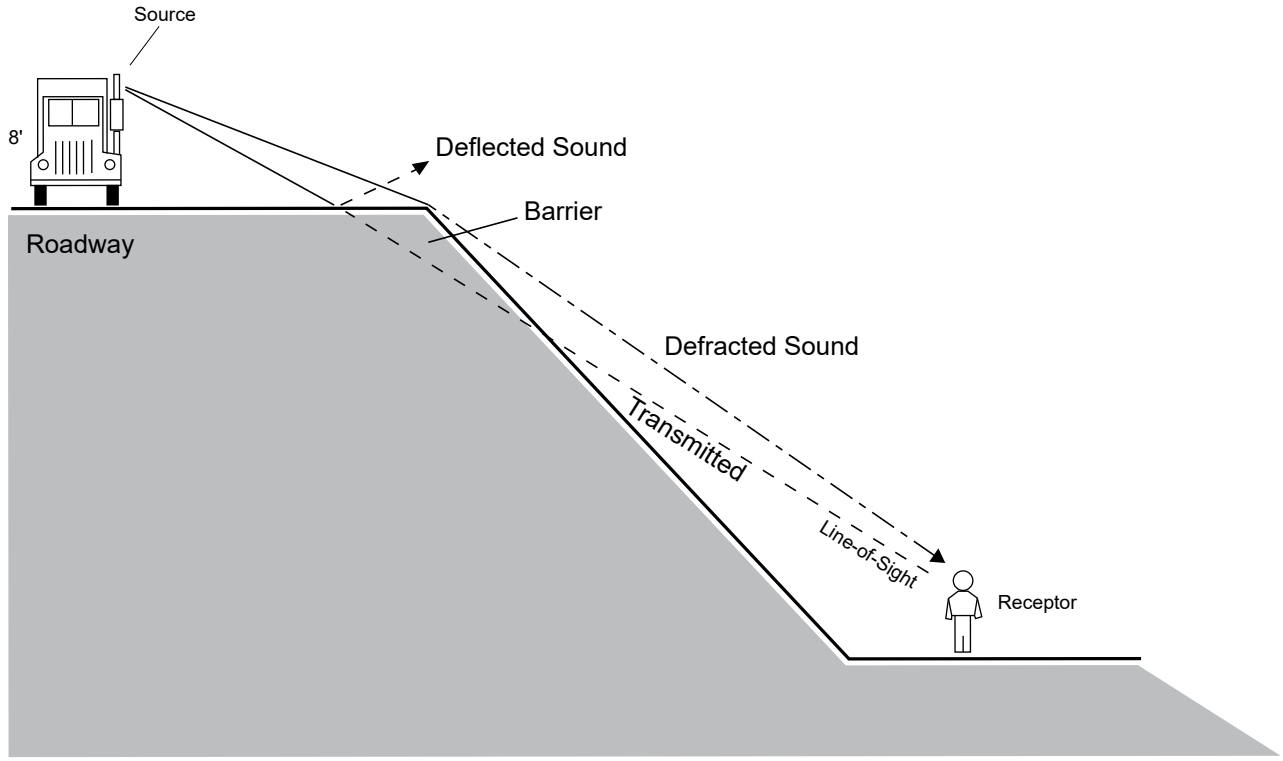
‡ *NOTE: dB are "average" values as measured on the A–scale of a sound–level meter.*

FIGURE **3**

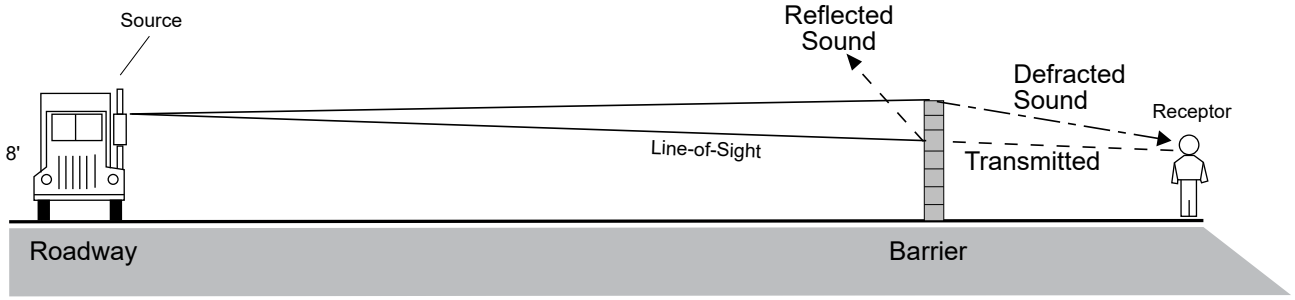
Meridian Consultants

Common Noise Levels

234-001-18



"Barrier Effect" Resulting from Differences in Elevation.



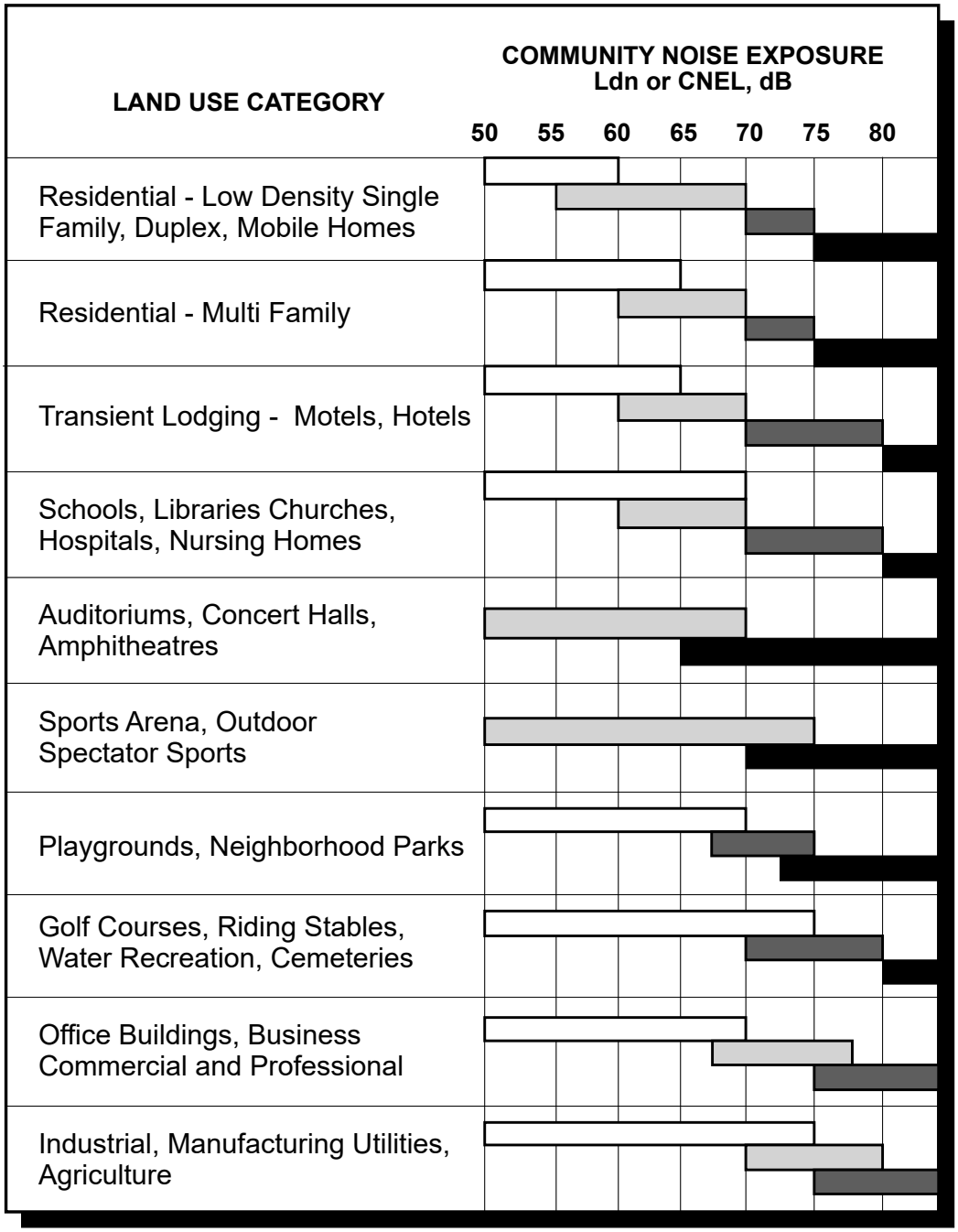
"Barrier Effect" Resulting from Typical Soundwall.

FIGURE **4**

Meridian Consultants

Noise Attenuation by Barriers

234-001-18



NORMALLY ACCEPTABLE
Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

CONDITIONALLY ACCEPTABLE
New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

NORMALLY UNACCEPTABLE
New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise reduction features included in the design.

CLEARLY UNACCEPTABLE
New construction or development should generally not be undertaken.

SOURCE: California Governor's Office of Planning and Research, State of California General Plan Guidelines, Appendix C: Guidelines for the Preparation and Content of Noise Elements of the General Plan, October 2003.

FIGURE **5**

Meridian Consultants

Land-Use Compatibility to Noise

City of South Pasadena

Noise Element

The Safety Noise Element of the City's General Plan establishes a number of goals and policies to provide an acceptable noise environment for noise-sensitive developments with the City.[4] Some general objectives of the Element include limiting the noise levels within residential areas, establishing compatible land use adjacent to transportation facilities, and maintain an ambient noise level within the City that will not be physically or psychologically detrimental to the residents of South Pasadena.

Noise Ordinance

Construction noise is regulated by Section 19A.13, which restricts construction activities "within a residential district or within a radius of 500 feet" to between 8:00 AM and 7:00 PM Monday through Friday, between 9:00 AM and 7:00 PM on Saturdays, and between 10:00 AM and 6:00 PM on Sundays. Construction activity is defined as any activity requiring a building permit and includes the operation of any manual, electric or pneumatic hammer, saw, shovel, hoist, derrick, or any other device used in the performance of site preparation, assembly, repair, demolition, or similar action on structures, rights-of-way, or land.

METHODOLOGY

Ambient Noise Measurements

Noise-level monitoring was conducted by Meridian Consultants on March 4, 2019, at three locations within the Project area vicinity, as shown in **Figure 6: Noise Monitoring Locations.** Noise-level monitoring was conducted for 15-minute intervals at each location using a Larson Davis Model 831 sound-level meter. This meter satisfies the American National Standards Institute (ANSI) standard for general environmental noise measurement instrumentation. The ANSI specifies several types of sound-level meters according to their precision. Types 1, 2, and 3 are referred to as "precision," "general-purpose," and "survey" meters, respectively. Most measurements carefully taken with a Type 1 sound-level meter will have a margin of error not exceeding 1 dB.

The Larson Davis Model 831 is a Type 1 precision sound-level meter. This meter meets all requirements of ANSI S1.4-1983 and ANSI1.43-1997 Type 1 standards, as well as International Electrotechnical Commission (IEC) IEC61672-1 Ed. 1.0, IEC60651 Ed 1.2, and IEC60804 Type 1, Group X standards.

4 City of South Pasadena, *General Plan, Safety & Noise Element,* accessed March 2019, https://www.southpasadenaca.gov/home/showdocument?id=213

The sound-level meter was located approximately 5 feet above ground and was covered with a Larson Davis windscreen. The sound-level meter was field calibrated with an external calibrator prior to operation.

Construction Scenario

Project construction is anticipated to last approximately 24 months. Construction would occur over five phases: (1) demolition; (2) grading; (3) building construction; (4) paving; and (5) architectural coating.

Each phase of construction would result in varying levels of intensity and a number of construction personnel. The construction workforce would consist of approximately 10 worker trips per day and 43 total hauling trips during demolition; 5 worker trips per day and 2,963 total hauling trips during grading; 50 worker trips per day and 13 total vendor trips during building construction; 10 worker trips per day during architectural coating; and 18 worker trips per day during paving.

Ground-Borne Vibration

Ground-borne vibration impacts were evaluated by identifying potential vibration sources, estimating the distance between vibration sources and surrounding structure locations and surrounding structure locations and vibration sensitive receptors, and making a significance determination based on the significance thresholds.

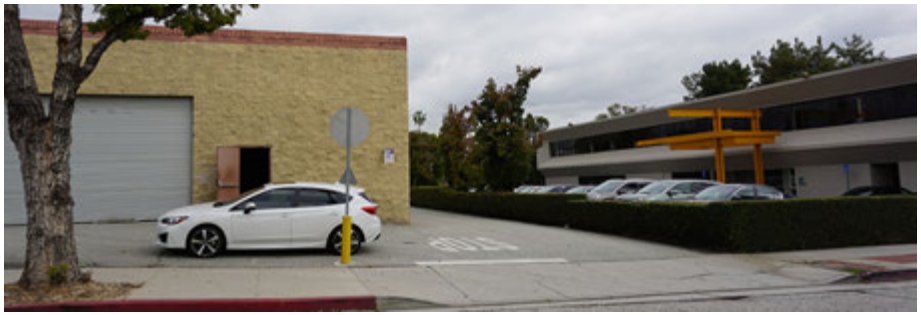
City of South Pasadena Noise Element

The City of South Pasadena General Plan Safety and Noise Element establishes goals and policies to adequately protect indoor and outdoor living areas, and noise-sensitive uses such as schools and convalescent homes, from transportation noise impacts. The Noise Element considers the noise impacts of new projects involving increases in noisy activities or traffic. An increase of 3 dBA or noise in excess of 65 dBA in sensitive areas shall be considered significant.

North

West

South



East

SOURCE: Google Earth - 2019

FIGURE **6a**

Meridian Consultants

Noise Monitoring Locations (Site 1)

234-001-18

North

West

South

East

SOURCE: Google Earth - 2019

FIGURE **6b**

Meridian Consultants

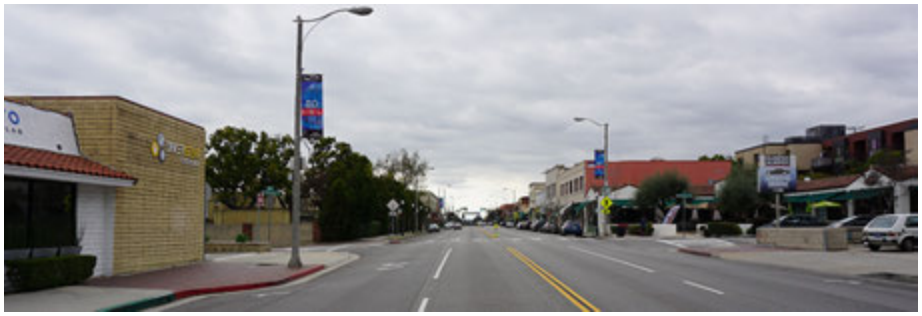
Noise Monitoring Locations (Site 2)

234-001-18

North

West

South



East

SOURCE: Google Earth - 2019

FIGURE **6c**

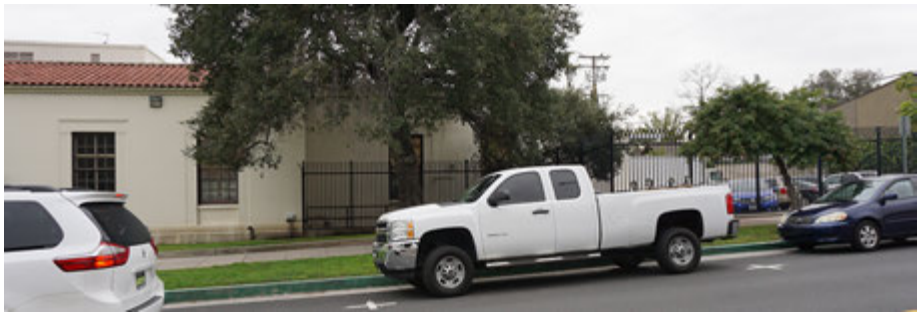
Meridian Consultants

Noise Monitoring Locations (Site 3)

234-001-18

North

West



South

East

SOURCE: Google Earth - 2019

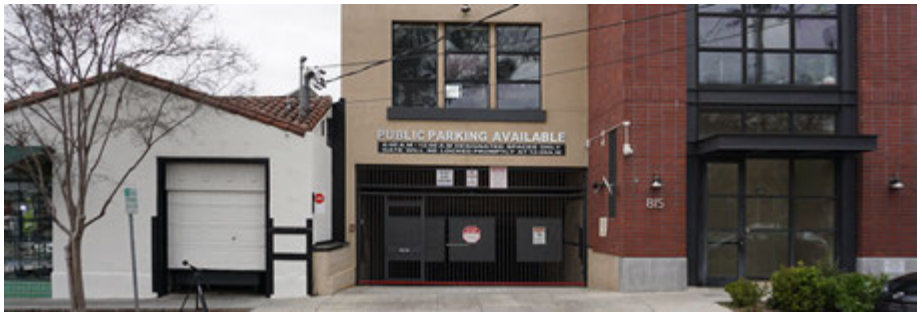
FIGURE **6d**

Meridian Consultants

Noise Monitoring Locations (Site 4)

244-001-19

North



West

South

East

SOURCE: Google Earth - 2019

FIGURE **6e**

Meridian Consultants

Noise Monitoring Locations (Site 5)

244-001-19

Construction

Construction Noise

Construction activities that would occur during the construction phases (demolition, grading, building construction, architectural coating, and paving) would generate both steady-state and episodic noise that would be heard both on and off the Project site. Each phase involves the use of different types of construction equipment and, therefore, has its own distinct noise characteristics. Grading and excavation would typically include equipment such as concrete saws, dozers, and tractors/loaders/backhoes; building construction would typically include equipment such as cranes, forklifts, and tractors/loaders/backhoes; architectural coating would typically include equipment such as air compressors; and paving would typically include equipment such as concrete mixers, pavers, rollers, and tractors/loaders/backhoes. The Project would be constructed using typical construction techniques; no blasting, impact pile driving, or jackhammers would be required.

Typical maximum noise levels and duty cycles of representative types of equipment that would potentially be used during construction for this Project are presented in **Table 2: Typical Maximum Noise Levels for Project Construction Equipment**. Construction equipment noise would not be constant because of the variations of power, cycles, and equipment locations. For maximum noise events, this analysis considers equipment operating at the edge of the property line of the Project site.

Table 2
Typical Maximum Noise Levels for Project Construction Equipment

Equipment Description	Typical Duty Cycle (%)	Spec Lmax (dBA)	Actual Lmax (dBA)
Air compressor	40	80.0	77.7
Backhoe	40	80.0	77.6
Concrete mixer	40	85.0	78.8
Concrete/Industrial saw	20	90.0	89.6
Crane	16	85.0	80.6
Dozer	40	85.0	81.7
Forklift	40	85.0	N/A
Grader	40	85.0	N/A
Paver	50	85.0	77.2
Roller	20	85.0	80.0

Source: FHWA Roadway Construction Noise Model (RCNM) version 1.1

Construction Vibration

Some construction equipment can generate ground-borne noise or vibration that may affect nearby structures or residents. Large bulldozers, vibratory rollers, pile drivers, drilling equipment, and loaded trucks are examples of such equipment. Vibration levels were estimated for large bulldozers, loaded trucks, and other similar equipment using peak PPV levels in in/sec published by the Federal Transit Administration[5] adjusted for distance to the nearest sensitive receptor.

Various types of construction equipment and their respective velocity levels are shown in **Table 3: Vibration Source Levels for Construction Equipment.** It should be noted that there is a considerable variation in reported ground vibration levels from construction activities. The data provides a reasonable estimate for a wide range of soil conditions. For purposes of this analysis, Project construction and operation producing vibration levels that exceed 0.3 in/sec would be considered significant.

Table 3
Vibration Source Levels for Construction Equipment

Equipment	PPV at 25 feet (in/sec)	Approximate VdB at 25 feet
Air compressor	0.090	87
Backhoe	0.040	80
Cement and mortar mixer	0.040	80
Concrete saw	0.018	73
Excavator	0.040	80
Loader	0.071	85
Paver	0.063	84
Roller	0.020	74

Source: Office of Planning and Environment, Federal Transit Administration, Transit Noise and Vibration Impact Assessment, FTA-VA-90-1003-06 (May 2006), 12-9.

Roadway Noise

Noise-prediction modeling was conducted and based on vehicular traffic volumes along nearby roadway segments to determine the ambient roadway noise environment related to traffic near the Project site. The average daily trips (ADTs) for these local roadway segments were obtained from the traffic impact analysis.

5 FHWA, *Construction Noise Handbook* (2006).

Existing roadway noise levels were modeled using the Federal Highway Administration Prediction Noise Model (FHWA-RD-77-108). The model calculates the average noise level in dB(A) CNEL at a given roadway segment based on traffic volumes, vehicle mix, average speeds, roadway geometry, and site conditions. The noise model assumes a "hard" site condition (i.e., providing for the minimum amount of sound attenuation allowed by the traffic noise model), a 6.0 dB[A] noise reduction per doubling of distance and no barriers between the roadway and receivers. Traffic noise levels were calculated for sensitive receptors at distances of 75 feet from the center of the roadway. Noise levels were evaluated with respect to the following modeled traffic scenarios:

- Existing Conditions
- Existing plus Project
- Future Conditions
- Future plus Project

The City of South Pasadena prohibits generation of noise in excess of 3 dB(A) or noise in excess of 65 dBA in sensitive areas. For the purposes of this analysis, Project operation noise would result in an impact if noise exceeds the existing ambient exterior CNEL noise levels of 3 dB(A) or more at a sensitive-receptor site.

EXISTING CONDITIONS

Ambient Noise Levels

Short-term sound monitoring was conducted at five (5) locations to measure the ambient sound environment in the Project vicinity. Measurements were taken over 15-minute intervals at each location on March 4, 2019, as indicated in **Table 4: Ambient Noise Measurements**. **Figure 6** depicts locations where ambient noise measurements were conducted. As shown in **Table 4,** ambient noise levels ranged from a low of 57.4 dBA (Site 2 and 4) to a high of 66.1 dBA along Mission Street.

Table 4
Ambient Noise Measurements

	Location Number/Description	Nearest Use	Time Period	Noise Source	dBA Leq
1	West of the Project site along Fairview Avenue between Mission Street and El Centro Street	School	1:40 PM–1:55 PM	Pedestrian and light traffic along Fairview Avenue	57.8
2	South of the Project site along El Centro Street	Multifamily residential	1:57 PM–2:12 PM	Pedestrian and traffic along El Centro Street	57.4
3	North of the Project site along Mission Street	Project site	2:18 PM–2:33 PM	Pedestrian and traffic along Mission Street	66.1
4	Southeast of the Project site along El Centro Street west of Fremont Avenue	Commercial	2:57 PM–3:12 PM	Pedestrian and traffic along El Centro Street	59.6
5	Northwest of the Project site along Fairview Avenue north of Mission Street	Commercial/Residential	2:35 PM–2:50 PM	Pedestrian and light traffic along Fairview Avenue	57.4

*Source: Refer to **Appendix A** for noise monitoring data sheets.*
Notes: dBA = A-weighted decibels; Leq = average equivalent sound level.

Vibration Conditions

Based on field observations, the primary source of existing ground-borne vibration in the vicinity of the Project site is vehicle traffic on local roadways. According to the Federal Transit Administration,[6] typical road traffic–induced vibration levels are unlikely to be perceptible by people. Trucks and buses typically generate ground-borne vibration velocity levels of approximately 63 VdB (at a 50-foot distance), and these levels could reach 72 VdB when trucks and buses pass over bumps in the road. A vibration level of 72 VdB is above the 60 VdB level of perceptibility.

Existing Roadway Noise

The estimated existing roadway noise levels are provided in **Table 5: Existing Roadway Noise Levels.** As indicated in **Table 5**, the existing modeled vehicle-generated noise levels along roadway segments near the Project site, at a distance of 75 feet from each roadway's centerline, range from a low of 54.7 dB(A) CNEL along El Centro Street east of Fair Oaks Avenue (intersection 4) during the AM peak hour to a high of 67.0 dB(A) CNEL along Fair Oaks Avenue north of Mission Street during the PM peak hour.

6 Federal Transit Administration, *Transit Noise and Vibration Impact Assessment,* FTA report no. 0123 (September 2018), accessed December 2018, https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf.

Table 5
Existing Roadway Noise Levels

Intersection	Roadway Segment	Time Period	dBA CNEL
1	Meridian Avenue north of Mission Street	AM	55.5
		PM	56.0
	Meridian Avenue south of Mission Street	AM	56.8
		PM	56.6
	Mission Street east of Meridian Avenue	AM	60.1
		PM	61.1
	Mission Street west of Meridian Avenue	AM	60.5
		PM	61.2
2	Freemont Avenue north of Mission Street	AM	64.5
		PM	64.9
	Freemont Avenue south of Mission Street	AM	64.4
		PM	64.9
	Mission Street east of Freemont Avenue	AM	61.7
		PM	62.4
	Mission Street west of Freemont Avenue	AM	61.7
		PM	62.6
3	Fair Oaks Avenue north of Mission Street	AM	66.5
		PM	67.0
	Fair Oaks Avenue south of Mission Street	AM	66.0
		PM	66.7
	Mission Street east of Fair Oaks Avenue	AM	61.9
		PM	62.1
	Mission Street west of Fair Oaks Avenue	AM	61.2
		PM	62.3
4	Fair Oaks Avenue north of El Centro Street	AM	66.1
		PM	66.8
	Fair Oaks Avenue south of El Centro Street	AM	66.2
		PM	66.9
	El Centro Street east of Fair Oaks Avenue	AM	54.7
		PM	57.3
	El Centro Street west of Fair Oaks Avenue	AM	56.5
		PM	58.6

*Note: Refer to **Appendix B** for roadway noise worksheets*
Note: Roadway noise levels are modeled 75 feet from the center of the roadway.

NOISE ANALYSIS

On-Site Construction Noise

The potential noise impact generated during construction depends on the phase of construction and the percentage of time the equipment operates over the workday. However, construction noise estimates used for the analysis are representative of worst-case conditions because it is unlikely that all the equipment contained on site would operate simultaneously. As previously noted, the Project would be constructed using typical construction techniques; no blasting, impact pile driving, or jackhammers would be required. As would be the case for construction of most land use development projects, construction of the proposed Project would require the use of heavy-duty equipment with the potential to generate audible noise above the ambient background noise level. The noise levels at the multifamily residential uses adjacent to the site from construction activity are shown in **Table 6: Construction Maximum Noise Estimates.**

Table 6
Construction Maximum Noise Estimates

Use	Distance from Project Site (feet)	Max Leq	Ambient Noise Leq (dBA)	Maximum Noise Increase over Ambient (without Compliance)
Site 1	40	88.5	57.8	+30.7
Site 2	195	69.7	57.4	+12.3
Site 3*	--	--	--	--
Site 4	285	66.5	59.6	+6.9
Site 5	155	71.7	57.4	+14.3

Source: FHWA, RCNM, version. 1.1.
*Note: * = Located at the Project site.*
*Refer to **Appendix C** for Construction Noise Worksheets*

Construction equipment operates at its nosiest levels for certain percentages of time during operation. Equipment such as excavators, graders, and loaders would operate at different percentages over the course of an hour.[7] During a construction day, the highest noise levels would be generated when multiple pieces of construction equipment are operated concurrently. The Project's estimated construction noise levels were calculated for a scenario in which a reasonable number of construction equipment was assumed to be operating simultaneously, given the physical size of the site and logistical limitations, and with the noise equipment located at the construction area nearest to the affected receptors to present a conservative impact analysis. This is considered a worst-case evaluation because the Project would

7 Federal Highway Administration, *Traffic Noise Model* (2006).

typically use fewer overall equipment simultaneously at any given time and, as such, would likely generate lower noise levels than reported herein.

Implementation of mitigation measure **MM NOI-1** would include noise reduction techniques which include a construction management plan specifying that all construction equipment, fixed or mobile, will be equipped with properly operating and maintained mufflers and other state-required noise-attenuation devices; identify the maximum distance between construction equipment staging areas and occupied residential areas; and require the use of electric air compressors and similar power tools. Temporary noise barriers can reduce noise level at a minimum of 10 dBA, depending on the performance standard of achieving noise-level reductions. Optimal muffler systems for all equipment and the break in line of sight to a sensitive receptor would reduce construction noise levels by approximately 10 dB or more.[8] Limiting the number of noise-generating, heavy-duty off-road construction equipment (e.g., backhoes, dozers, excavators, loaders, rollers, etc.) simultaneously used on the Project site within 50 feet of off-site noise-sensitive receptors surrounding the site to no more than one or two pieces of heavy-duty, off-road equipment would further reduce construction noise levels by approximately 10 dBA. A sign, legible at a distance of 50 feet, will be posted at the Project construction site providing a contact name and a telephone number where residents can inquire about the construction process and register complaints. This sign will indicate the dates and duration of construction activities. In conjunction with this required posting, a noise disturbance coordinator will be identified to address construction noise concerns received. The contact name and the telephone number for the noise disturbance coordinator will be posted on the sign. The coordinator will be responsible for responding to any local complaints about construction noise and will notify the City to determine the cause and implement reasonable measures to the complaint, as deemed acceptable by the City. With implementation of **MM NOI-1**, construction noise levels would be reduced by a minimum 30 dBA, thus would not increase ambient noise levels by 3 dBA or noise in excess of 65 dBA in sensitive areas.

Off-Site Construction Noise

According to the City's Safety and Noise Element, truck routes are designated to direct large trucks onto roadways constructed for that purpose. In South Pasadena, the following roadways have been designated appropriate for truck travel:

- Pasadena Avenue (West City limits to Mission Street)
- Mission Street (Pasadena Avenue to Fair Oaks Avenue)

8 FHWA, *Special Report – Measurement, Prediction, and Mitigation*, updated June 2017, accessed December 2018, https://www.fhwa.dot.gov/Environment/noise/construction_noise/special_report/hcn04.cfm.

- Fair Oaks Avenue (North City limits to Huntington Drive)
- Huntington Drive (South City limits to Garfield Avenue)
- Fremont Avenue (Huntington Drive to South City limits)

Construction of the Project would require haul and vendor truck trips to and from the site to export soil and delivery supplies to the site. Trucks traveling to and from the Project site would be required to travel along a haul route approved by the City. Approximately 2963 total hauling trips would take place during grading, which total to approximately 50 haul truck trips per work day.

Noise associated with construction truck trips were estimated using the Caltrans FHWA Traffic Noise Model based on the maximum number of truck trips in a day. Project truck trips, which include medium- and heavy-duty trucks, would generate noise levels of approximately 54.2 to 59.1 dBA, respectively, measured at a distance of 25 feet along Mission Street. As shown in **Table 4,** existing noise levels along Mission Street is 66.1 dBA. The noise-level increases from truck trips would be below the existing ambient noise level and would be below the significance threshold of 3 dBA.

Construction Vibration

Table 7: Construction Vibration Levels Estimates lists the vibration source levels at varying distances of the assumed construction equipment to be used during construction. As shown in **Table 7**, air compressors are capable of producing approximately 0.193 ips PPV at 15 feet and would not generate vibration levels in excess of 0.5 ips PPV. As such, the multifamily residential units surrounding the Project site with regard to construction vibration activities would not be affected as a result of attenuation of ground-borne vibration. Furthermore, construction activities would be restricted to daytime hours, when people are the least sensitive to vibration intrusions.

Table 7
Construction Vibration Levels Estimates

	Inches per Second PPV at Adjusted Distance			
Equipment	**Site 1**	**Site 2**	**Site 4**	**Site 5**
Air compressor	0.044	0.004	0.002	0.006
Backhoe	0.020	0.002	0.001	0.003
Cement and mortar mixer	0.020	0.002	0.001	0.003
Concrete saw	0.009	0.002	0.001	0.003
Excavator	0.020	0.003	0.002	0.005
Loader	0.035	0.003	0.002	0.004
Paver	0.031	0.001	0.001	0.001
Roller	0.010	0.001	0.000	0.001

Source: *FHWA RCNM* (2006).

Roadway Noise

Existing plus Project

Table 8: Existing plus Project, illustrates the change in CNEL from existing traffic volumes and existing plus Project traffic volumes. The difference in traffic noise between existing conditions and Project conditions represents the increase in noise attributable to Project-related traffic. As shown in **Table 8,** an increase of 3 dBA or more would not occur along roadways adjacent to sensitive uses.

Table 8
Existing plus Project

Intersection	Roadway Segment	Time Period	Existing	Existing plus Project	Noise-Level Increase
			dBA CNEL		
1	Meridian Avenue north of Mission Street	AM	55.5	55.6	0.1
		PM	56.0	56.0	0.0
	Meridian Avenue south of Mission Street	AM	56.8	56.8	0.0
		PM	56.6	56.6	0.0
	Mission Street east of Meridian Avenue	AM	60.1	60.2	0.1
		PM	61.1	61.2	0.1
	Mission Street west of Meridian Avenue	AM	60.5	60.6	0.1
		PM	61.2	61.3	0.1
2	Freemont Avenue north of Mission Street	AM	64.5	64.5	0.0
		PM	64.9	64.9	0.0
	Freemont Avenue south of Mission Street	AM	64.4	64.4	0.0
		PM	64.9	64.9	0.0
	Mission Street east of Freemont Avenue	AM	61.7	61.9	0.2
		PM	62.4	62.5	0.1
	Mission Street west of Freemont Avenue	AM	61.7	61.8	0.1
		PM	62.6	62.7	0.1
3	Fair Oaks Avenue north of Mission Street	AM	66.5	66.5	0.0
		PM	67.0	67.0	0.0
	Fair Oaks Avenue south of Mission Street	AM	66.0	66.0	0.0
		PM	66.7	66.8	0.1
	Mission Street east of Fair Oaks Avenue	AM	61.9	61.9	0.0
		PM	62.1	62.1	0.0
	Mission Street west of Fair Oaks Avenue	AM	61.2	61.3	0.1
		PM	62.3	62.4	0.1

Intersection	Roadway Segment	Time Period	Existing	Existing plus Project	Noise-Level Increase
			dBA CNEL		
4	Fair Oaks Avenue north of El Centro Street	AM	66.1	66.1	0.0
		PM	66.8	66.9	0.1
	Fair Oaks Avenue south of El Centro Street	AM	66.2	66.3	0.1
		PM	66.9	66.9	0.0
	El Centro Street east of Fair Oaks Avenue	AM	54.7	54.7	0.0
		PM	57.3	57.3	0.0
	El Centro Street west of Fair Oaks Avenue	AM	56.5	56.7	0.2
		PM	58.6	58.7	0.1

*Note: Refer to **Appendix B** for roadway noise worksheets*
Note: Roadway noise levels are modeled 75 feet from the center of the roadway.

Future plus Project

Table 9: Future plus Project, illustrates the change in CNEL from future traffic volumes and future plus Project traffic volumes. The difference in traffic noise between future conditions and Project conditions represents the increase in noise attributable to Project-related traffic. As shown in **Table 9**, an increase of 3 dBA or more would not occur along roadways adjacent to sensitive uses.

Table 9
Future plus Project

Intersection	Roadway Segment	Time Period	Future	Future plus Project	Noise-Level Increase
			dBA CNEL		
1	Meridian Avenue north of Mission Street	AM	55.6	55.7	0.1
		PM	56.1	56.1	0.0
	Meridian Avenue south of Mission Street	AM	56.9	56.9	0.0
		PM	56.7	56.7	0.0
	Mission Street east of Meridian Avenue	AM	60.3	60.4	0.1
		PM	61.3	61.4	0.1
	Mission Street west of Meridian Avenue	AM	60.7	60.8	0.1
		PM	61.4	61.5	0.1
2	Freemont Avenue north of Mission Street	AM	64.6	64.7	0.1
		PM	65.1	65.1	0.0
	Freemont Avenue south of Mission Street	AM	64.6	64.6	0.0
		PM	65.1	65.1	0.0

Intersection	Roadway Segment	Time Period	Future	Future plus Project	Noise-Level Increase
			dBA CNEL		
	Mission Street east of Freemont Avenue	AM	62.0	62.1	0.1
		PM	62.7	62.8	0.1
	Mission Street west of Freemont Avenue	AM	61.9	62.0	0.1
		PM	62.8	62.9	0.1
3	Fair Oaks Avenue north of Mission Street	AM	66.6	66.6	0.0
		PM	67.1	67.1	0.0
	Fair Oaks Avenue south of Mission Street	AM	66.1	66.1	0.0
		PM	66.9	66.9	0.0
	Mission Street east of Fair Oaks Avenue	AM	62.1	62.1	0.0
		PM	62.4	62.4	0.0
	Mission Street west of Fair Oaks Avenue	AM	61.4	61.5	0.1
		PM	62.6	62.6	0.0
4	Fair Oaks Avenue north of El Centro Street	AM	66.2	66.2	0.0
		PM	66.9	66.9	0.0
	Fair Oaks Avenue south of El Centro Street	AM	66.4	66.4	0.0
		PM	67.1	67.1	0.0
	El Centro Street east of Fair Oaks Avenue	AM	55.3	55.3	0.0
		PM	58.0	58.0	0.0
	El Centro Street west of Fair Oaks Avenue	AM	57.0	57.2	0.2
		PM	59.1	59.2	0.1

*Note: Refer to **Appendix B** for roadway noise worksheets*
Note: Roadway noise levels are modeled 75 feet from the center of the roadway.

CUMULATIVE

For purposes of this analysis, development of the related projects will be considered to contribute to cumulative noise impacts. Noise, by definition, is a localized phenomenon and drastically reduces as distance from the source increases. As a result, only related projects and growth in the general area of the Project site would contribute to cumulative noise impacts. Cumulative construction noise impacts have the potential to occur when multiple construction projects in the local area generate noise within the same time frame and contribute to the local ambient noise environment. It is expected that, as with the Project, the related projects would implement best management practices, which would minimize any noise-related nuisances during construction. Therefore, the combined construction noise impacts of the related projects and the Project's contribution would not cause a significant cumulative impact.

With regard to stationary sources, cumulative significant noise impacts may result from cumulative development. Stationary sources of noise that could be introduced in the area by cumulative projects could include mechanical equipment, loading docks, and parking lots. Given that these projects would be required to adhere to the City's noise standards, all stationary sources would be required to have shielding or other noise-abatement measures so as not to cause a substantial increase in ambient noise levels. Moreover, due to distance, it is unlikely that noise from multiple cumulative projects would interact to create a significant combined noise impact. As such, it is not anticipated that a significant cumulative increase in permanent ambient noise levels would occur.

APPENDIX A

Noise Monitoring Worksheets

Monitoring Location: Site 1
Monitoring Date: 3/4/2019

Monitoring Period

Time	LAeq	LASmax	LASmin
13:40:22	55.7	62.3	49.0
13:41:22	54.4	62.0	49.9
13:42:22	54.1	57.8	50.5
13:43:22	58.4	68.7	49.3
13:44:22	59.8	70.9	50.1
13:45:22	58.7	70.2	48.9
13:46:22	61.1	70.2	51.5
13:47:22	55.1	60.2	48.7
13:48:22	61.1	68.9	51.3
13:49:22	55.6	62.4	50.9
13:50:22	56.9	63.2	51.3
13:51:22	59.6	66.8	50.5
13:52:22	53.0	60.8	47.9
13:53:22	58.3	66.4	47.4
13:54:22	52.1	58.2	47.8
13:55:22	57.6	67.6	48.7

15-minute LAeq **57.8**

Monitoring Location: Site 2
Monitoring Date: 3/4/2019

Monitoring Period

Time	LAeq	LASmax	LASmin
13:57:22	55.1	77.6	45.9
13:58:22	51.9	59.9	44.5
13:59:22	56.0	62.9	44.2
14:00:22	57.0	65.4	47.1
14:01:22	55.3	65.4	42.9
14:02:22	57.7	61.2	54.9
14:03:22	54.6	61.6	43.7
14:04:22	55.5	63.8	44.1
14:05:22	57.5	64.6	45.0
14:06:22	58.7	65.4	47.0
14:07:22	58.0	67.6	47.9
14:08:22	60.7	67.7	50.2
14:09:22	59.1	65.6	47.4
14:10:22	55.8	64.1	45.5
14:11:22	57.7	64.4	44.1
14:12:22	59.8	62.9	53.7

15-minute LAeq **57.4**

Monitoring Location: Site 3
Monitoring Date: 3/4/2019

Monitoring Period

Time	LAeq	LASmax	LASmin
14:18:46	66.1	73.7	55.7
14:19:46	67.2	74.7	54.1
14:20:46	60.7	68.9	49.2
14:21:46	66.1	73.5	55.1
14:22:46	63.6	70.4	58.8
14:23:46	64.8	72.2	57.5
14:24:46	66.8	72.0	54.3
14:25:46	65.4	71.7	51.8
14:26:46	57.8	66.7	48.5
14:27:46	66.4	72.9	53.3
14:28:46	66.3	73.0	52.5
14:29:46	66.2	71.8	51.9
14:30:46	63.2	73.0	52.3
14:31:46	67.4	73.9	56.7
14:32:46	66.6	76.9	51.9
14:33:46	70.4	69.0	67.7

15-minute LAeq **66.1**

Monitoring Location: Site 4
Monitoring Date: 3/4/2019

Monitoring Period

Time	LAeq	LASmax	LASmin
14:57:28	65.1	72.4	52.4
14:58:28	60.6	65.8	54.9
14:59:28	58.6	64.5	54.6
15:00:28	59.0	67.3	53.2
15:01:28	59.0	61.1	57.4
15:02:28	57.1	61.8	52.0
15:03:28	65.6	76.5	54.4
15:04:28	56.8	63.1	50.3
15:05:28	55.6	63.8	49.9
15:06:28	54.2	61.9	46.8
15:07:28	54.7	57.6	49.4
15:08:28	56.0	63.7	48.2
15:09:28	56.5	64.7	47.4
15:10:28	59.6	65.9	54.1
15:11:28	55.7	58.8	50.8
15:12:28	51.6	53.6	51.8

15-minute LAeq **59.6**

Monitoring Location: Site 5
Monitoring Date: 3/4/2019

Monitoring Period

Time	LAeq	LASmax	LASmin
14:35:33	55.4	69.2	52.1
14:36:33	61.5	73.9	52.5
14:37:33	57.3	69.5	50.9
14:38:33	54.3	61.6	49.9
14:39:33	59.4	68.9	49.3
14:40:33	57.3	64.9	48.4
14:41:33	57.0	65.3	49.6
14:42:33	58.7	68.7	49.9
14:43:33	56.6	65.6	49.0
14:44:33	56.6	65.3	49.9
14:45:33	54.9	60.5	49.3
14:46:33	57.5	68.1	48.9
14:47:33	58.5	69.8	48.0
14:48:33	55.6	61.8	49.0
14:49:33	56.0	63.7	49.7
14:50:33	53.5	56.7	53.4

15-minute LAeq **57.4**

APPENDIX B

Roadway Noise Modeling Worksheets

Project Name: Mission Bell Mixed-Use Project

Weekday AM Peak Hour Volumes

Intersection: 1

Meridian Avenue & Mission Street

Meridian Avenue

Southbound

	right	through	left
Existing	5	77	10
Existing+Proj	5	77	11
Future	5	79	10
Future+Proj	5	79	11

Eastbound

	left	through	right
Existing	6	298	53
Existing+Proj	6	308	55
Future	6	312	55
Future+Proj	6	322	57

Westbound

	right	through	left
Existing	41	280	6
Existing+Proj	42	292	6
Future	42	297	6
Future+Proj	43	309	6

Mission Street

N

W E

S

Northbound

	left	through	right
Existing	68	95	12
Existing+Proj	70	95	12
Future	70	98	12
Future+Proj	72	98	12

ADT

Road	Meridian Avenue		Mission Street	
Leg	North of	South of	East of	West of
Cross Street	Mission Street		Meridian Avenue	
Existing	1,872.0	2,488.0	5,176.0	5,680.0
Existing+Proj	1,888.0	2,520.0	5,368.0	5,888.0
Future	1,920.0	2,560.0	5,432.0	5,960.0
Future+Proj	1,936.0	2,592.0	5,624.0	6,168.0

2

NOISE LEVEL CONTOURS - Existing Plus Project Weekday Off-Site ADT Volumes

ROADWAY NAME / Segment	Land Use	Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center to Receptor	Alpha Factor (1	Barrier Attn. dB(A)	Vehicle Mix: Medium Trucks	Vehicle Mix: Heavy Trucks	dB(A) CNEL	Traffic Volumes: Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	Ref. Energy Levels: A	MT	HT	Dist Adj	Ld: A	MT	HT	Total	Le: A	MT	HT	Total	Ln: A	MT	HT	Total
Meridian Avenue n/o Mission																																				
Existing		1	15	1,872	40	75	0	0	1.8%	0.7%	55.5	####	238	180	29	12	2	0	3	1	67.4	76.3	81.2	-1.8	54.9	47.1	47.9	56.3	51.9	39.5	37.7	52.3	38.8	37.6	38.7	43.1
Existing+Proj		1	15	1,888	40	75	0	0	1.8%	0.7%	55.6	####	240	181	30	12	2	0	3	1	67.4	76.3	81.2	-1.8	55.0	47.1	47.9	56.3	52.0	39.5	37.8	52.4	38.8	37.7	38.7	43.2
Future		1	15	1,920	40	75	0	0	1.8%	0.7%	55.6	####	244	184	30	12	2	0	3	1	67.4	76.3	81.2	-1.8	55.0	47.2	48.0	56.4	52.1	39.6	37.8	52.5	38.9	37.7	38.8	43.3
Future+Proj		1	15	1,936	40	75	0	0	1.8%	0.7%	55.7	####	246	186	30	12	2	0	3	1	67.4	76.3	81.2	-1.8	55.1	47.2	48.0	56.4	52.1	39.6	37.9	52.5	38.9	37.8	38.8	43.3
Meridian Avenue s/o Mission																																				
Existing		1	15	2,488	40	75	0	0	1.8%	0.7%	56.8	####	316	239	39	16	2	0	3	1	67.4	76.3	81.2	-1.8	56.2	48.3	49.1	57.5	53.2	40.7	39.0	53.6	40.0	38.9	39.9	44.4
Existing+Proj		1	15	2,520	40	75	0	0	1.8%	0.7%	56.8	####	320	242	40	16	2	1	3	1	67.4	76.3	81.2	-1.8	56.2	48.4	49.2	57.6	53.2	40.8	39.0	53.6	40.0	38.9	40.0	44.4
Future		1	15	2,560	40	75	0	0	1.8%	0.7%	56.9	####	325	246	40	16	2	1	3	1	67.4	76.3	81.2	-1.8	56.3	48.4	49.3	57.6	53.3	40.8	39.1	53.7	40.1	39.0	40.0	44.5
Future+Proj		1	15	2,592	40	75	0	0	1.8%	0.7%	56.9	####	329	249	41	16	2	1	4	1	67.4	76.3	81.2	-1.8	56.3	48.5	49.3	57.7	53.4	40.9	39.1	53.8	40.2	39.0	40.1	44.6
Mission Street e/o Meridian																																				
Existing		3	15	5,176	40	75	0	0	1.8%	0.7%	60.1	####	657	497	81	32	5	1	7	3	67.4	76.3	81.2	-1.7	59.5	51.6	52.4	60.8	56.5	44.0	42.3	56.9	43.3	42.2	43.2	47.7
Existing+Proj		3	15	5,368	40	75	0	0	1.8%	0.7%	60.2	####	682	515	84	33	5	1	7	3	67.4	76.3	81.2	-1.7	59.6	51.8	52.6	61.0	56.7	44.2	42.4	57.0	43.5	42.3	43.4	47.9
Future		3	15	5,432	40	75	0	0	1.8%	0.7%	60.3	####	690	521	85	34	5	1	7	3	67.4	76.3	81.2	-1.7	59.7	51.8	52.7	61.0	56.7	44.2	42.5	57.1	43.5	42.4	43.4	47.9
Future+Proj		3	15	5,624	40	75	0	0	1.8%	0.7%	60.4	####	714	540	89	35	5	1	8	3	67.4	76.3	81.2	-1.7	59.8	52.0	52.8	61.2	56.9	44.4	42.6	57.2	43.7	42.5	43.6	48.1
Mission Street w/o Meridian																																				
Existing		3	15	5,680	40	75	0	0	1.8%	0.7%	60.5	####	721	545	89	35	5	1	8	3	67.4	76.3	81.2	-1.7	59.9	52.0	52.8	61.2	56.9	44.4	42.7	57.3	43.7	42.6	43.6	48.1
Existing+Proj		3	15	5,888	40	75	0	0	1.8%	0.7%	60.6	####	748	565	93	37	5	1	8	3	67.4	76.3	81.2	-1.7	60.0	52.2	53.0	61.4	57.1	44.6	42.8	57.4	43.9	42.7	43.8	48.3
Future		3	15	5,960	40	75	0	0	1.8%	0.7%	60.7	####	757	572	94	37	5	1	8	3	67.4	76.3	81.2	-1.7	60.1	52.2	53.1	61.4	57.1	44.6	42.9	57.5	43.9	42.8	43.8	48.3
Future+Proj		3	15	6,168	40	75	0	0	1.8%	0.7%	60.8	####	783	592	97	38	6	1	8	3	67.4	76.3	81.2	-1.7	60.2	52.4	53.2	61.6	57.3	44.8	43.0	57.7	44.1	42.9	44.0	48.5

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such as vegetative ground cover.

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Project Name: Mission Bell Mixed-Use Project
Weekday AM Peak Hour Volumes

Intersection: 2
Freemont Avenue & Mission Street

Freemont Avenue

Southbound

	right	through	left
Existing	24	454	61
Existing+Proj	26	454	61
Future	25	472	65
Future+Proj	27	472	65

Mission Street

Eastbound

	left	through	right
Existing	41	208	72
Existing+Proj	43	219	72
Future	42	219	74
Future+Proj	44	230	74

N
W E
S

Westbound

	right	through	left
Existing	95	291	36
Existing+Proj	95	300	36
Future	100	309	38
Future+Proj	100	318	38

Northbound

	left	through	right
Existing	71	670	24
Existing+Proj	71	670	24
Future	73	694	26
Future+Proj	73	694	26

ADT

Road	Freemont Avenue		Mission Street	
Leg	North of	South of	East of	West of
Cross Street	Mission Street		Freemont Avenue	
Existing	10,760.0	10,616.0	5,720.0	5,656.0
Existing+Proj	10,792.0	10,616.0	5,880.0	5,848.0
Future	11,184.0	11,016.0	6,056.0	5,936.0
Future+Proj	11,216.0	11,016.0	6,216.0	6,128.0

2

NOISE LEVEL CONTOURS - Existing Plus Project Weekday Off-Site ADT Volumes

ROADWAY NAME / Segment	Land Use	Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center to Receptor	Alpha Factor (1)	Barrier Attn. dB(A)	Vehicle Mix: Medium Trucks	Vehicle Mix: Heavy Trucks	dB(A) CNEL	Traffic Volumes: Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	Ref. Energy Levels: A	MT	HT	Dist Adj	Ld: A	MT	HT	Total	Le: A	MT	HT	Total	Ln: A	MT	HT	Total
Freemont Avenue n/o Mission																																				
Existing		3	15	10,760	45	75	0	0	1.8%	0.7%	64.5	8,361	1,367	1,033	169	67	10	2	15	6	69.3	77.6	82.1	-1.7	64.1	55.6	56.1	65.3	61.1	48.0	45.9	61.5	48.0	46.1	46.9	51.8
Existing+Proj		3	15	10,792	45	75	0	0	1.8%	0.7%	64.5	8,385	1,371	1,036	170	67	10	2	15	6	69.3	77.6	82.1	-1.7	64.1	55.6	56.1	65.3	61.2	48.0	45.9	61.5	48.0	46.2	46.9	51.8
Future		3	15	11,184	45	75	0	0	1.8%	0.7%	64.6	8,690	1,420	1,074	176	70	10	2	15	6	69.3	77.6	82.1	-1.7	64.3	55.8	56.3	65.4	61.3	48.2	46.1	61.6	48.1	46.3	47.0	52.0
Future+Proj		3	15	11,216	45	75	0	0	1.8%	0.7%	64.7	8,715	1,424	1,077	177	70	10	2	15	6	69.3	77.6	82.1	-1.7	64.3	55.8	56.3	65.4	61.3	48.2	46.1	61.7	48.1	46.3	47.0	52.0
Freemont Avenue s/o Mission																																				
Existing		3	15	10,616	45	75	0	0	1.8%	0.7%	64.4	8,249	1,348	1,019	167	66	10	2	14	6	69.3	77.6	82.1	-1.7	64.1	55.5	56.0	65.2	61.1	48.0	45.9	61.4	47.9	46.1	46.8	51.8
Existing+Proj		3	15	10,616	45	75	0	0	1.8%	0.7%	64.4	8,249	1,348	1,019	167	66	10	2	14	6	69.3	77.6	82.1	-1.7	64.1	55.5	56.0	65.2	61.1	48.0	45.9	61.4	47.9	46.1	46.8	51.8
Future		3	15	11,016	45	75	0	0	1.8%	0.7%	64.6	8,559	1,399	1,058	173	69	10	2	15	6	69.3	77.6	82.1	-1.7	64.2	55.7	56.2	65.4	61.3	48.1	46.0	61.6	48.1	46.2	47.0	51.9
Future+Proj		3	15	11,016	45	75	0	0	1.8%	0.7%	64.6	8,559	1,399	1,058	173	69	10	2	15	6	69.3	77.6	82.1	-1.7	64.2	55.7	56.2	65.4	61.3	48.1	46.0	61.6	48.1	46.2	47.0	51.9
Mission Street e/o Freemont																																				
Existing		3	15	5,720	45	75	0	0	1.8%	0.7%	61.7	4,444	726	549	90	36	5	1	8	3	69.3	77.6	82.1	-1.7	61.4	52.9	53.4	62.5	58.4	45.3	43.2	58.7	45.2	43.4	44.1	49.1
Existing+Proj		3	15	5,880	45	75	0	0	1.8%	0.7%	61.9	4,569	747	564	93	37	5	1	8	3	69.3	77.6	82.1	-1.7	61.5	53.0	53.5	62.6	58.5	45.4	43.3	58.9	45.3	43.5	44.2	49.2
Future		3	15	6,056	45	75	0	0	1.8%	0.7%	62.0	4,706	769	581	95	38	6	1	8	3	69.3	77.6	82.1	-1.7	61.6	53.1	53.6	62.8	58.7	45.5	43.4	59.0	45.5	43.6	44.4	49.3
Future+Proj		3	15	6,216	45	75	0	0	1.8%	0.7%	62.1	4,830	789	597	98	39	6	1	8	4	69.3	77.6	82.1	-1.7	61.7	53.2	53.7	62.9	58.8	45.6	43.5	59.1	45.6	43.8	44.5	49.4
Mission Street w/o Freemont																																				
Existing		3	15	5,656	45	75	0	0	1.8%	0.7%	61.7	4,395	718	543	89	35	5	1	8	3	69.3	77.6	82.1	-1.7	61.3	52.8	53.3	62.5	58.4	45.2	43.1	58.7	45.2	43.3	44.1	49.0
Existing+Proj		3	15	5,848	45	75	0	0	1.8%	0.7%	61.8	4,544	743	561	92	36	5	1	8	3	69.3	77.6	82.1	-1.7	61.5	52.9	53.4	62.6	58.5	45.4	43.3	58.8	45.3	43.5	44.2	49.2
Future		3	15	5,936	45	75	0	0	1.8%	0.7%	61.9	4,612	754	570	93	37	5	1	8	3	69.3	77.6	82.1	-1.7	61.5	53.0	53.5	62.7	58.6	45.4	43.3	58.9	45.4	43.6	44.3	49.2
Future+Proj		3	15	6,128	45	75	0	0	1.8%	0.7%	62.0	4,761	778	588	96	38	6	1	8	3	69.3	77.6	82.1	-1.7	61.7	53.2	53.7	62.8	58.7	45.6	43.5	59.0	45.5	43.7	44.4	49.4

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such as vegetative ground cover.

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Project Name: Mission Bell Mixed-Use Project
Weekday AM Peak Hour Volumes

Intersection: 3
Fair Oaks Avenue & Mission Street

Fair Oaks Avenue

Southbound

	right	through	left
Existing	43	870	86
Existing+Proj	51	870	86
Future	45	896	89
Future+Proj	53	896	89

Mission Street

Eastbound

	left	through	right
Existing	42	156	48
Existing+Proj	51	156	50
Future	43	168	49
Future+Proj	52	168	51

N
W E
S

Westbound

	right	through	left
Existing	190	280	13
Existing+Proj	190	280	13
Future	196	297	13
Future+Proj	196	297	13

Northbound

	left	through	right
Existing	56	901	13
Existing+Proj	58	901	13
Future	59	928	13
Future+Proj	61	928	13

ADT

Road	Fair Oaks Avenue		Mission Street	
Leg	North of	South of	East of	West of
Cross Street	Mission Street		Fair Oaks Avenue	
Existing	17,056.0	15,208.0	5,904.0	5,000.0
Existing+Proj	17,192.0	15,240.0	5,904.0	5,168.0
Future	17,576.0	15,664.0	6,208.0	5,288.0
Future+Proj	17,712.0	15,696.0	6,208.0	5,456.0

2

NOISE LEVEL CONTOURS - Existing Plus Project Weekday Off-Site ADT Volumes

ROADWAY NAME / Segment	Land Use	Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center to Receptor	Alpha Factor (1)	Barrier Attn. dB(A)	Vehicle Mix: Medium Trucks	Vehicle Mix: Heavy Trucks	dB(A) CNEL	Traffic Volumes: Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	Ref. Energy Levels: A	MT	HT	Dist Adj	Ld: A	MT	HT	Total	Le: A	MT	HT	Total	Ln: A	MT	HT	Total
Fair Oaks Avenue n/o Mission																																				
Existing		4	0	17,056	45	75	0	0	1.8%	0.7%	66.5	####	2,166	1,637	268	106	16	3	23	10	69.3	77.6	82.1	-1.7	66.1	57.6	58.1	67.2	63.1	50.0	47.9	63.5	49.9	48.1	48.8	53.8
Existing+Proj		4	0	17,192	45	75	0	0	1.8%	0.7%	66.5	####	2,183	1,650	271	107	16	3	23	10	69.3	77.6	82.1	-1.7	66.1	57.6	58.1	67.3	63.2	50.0	47.9	63.5	50.0	48.2	48.9	53.8
Future		4	0	17,576	45	75	0	0	1.8%	0.7%	66.6	####	2,232	1,687	277	110	16	3	24	10	69.3	77.6	82.1	-1.7	66.2	57.7	58.2	67.4	63.3	50.1	48.0	63.6	50.1	48.2	49.0	53.9
Future+Proj		4	0	17,712	45	75	0	0	1.8%	0.7%	66.6	####	2,249	1,700	279	110	16	4	24	10	69.3	77.6	82.1	-1.7	66.3	57.7	58.2	67.4	63.3	50.2	48.1	63.6	50.1	48.3	49.0	54.0
Fair Oaks Avenue s/o Mission																																				
Existing		4	5	15,208	45	75	0	0	1.8%	0.7%	66.0	####	1,931	1,460	239	95	14	3	21	9	69.3	77.6	82.1	-1.7	65.6	57.1	57.6	66.8	62.7	49.5	47.4	63.0	49.5	47.7	48.4	53.3
Existing+Proj		4	5	15,240	45	75	0	0	1.8%	0.7%	66.0	####	1,935	1,463	240	95	14	3	21	9	69.3	77.6	82.1	-1.7	65.7	57.1	57.6	66.8	62.7	49.5	47.5	63.0	49.5	47.7	48.4	53.3
Future		4	5	15,664	45	75	0	0	1.8%	0.7%	66.1	####	1,989	1,504	247	98	14	3	21	9	69.3	77.6	82.1	-1.7	65.8	57.2	57.7	66.9	62.8	49.7	47.6	63.1	49.6	47.8	48.5	53.5
Future+Proj		4	5	15,696	45	75	0	0	1.8%	0.7%	66.1	####	1,993	1,507	247	98	14	3	21	9	69.3	77.6	82.1	-1.7	65.8	57.3	57.8	66.9	62.8	49.7	47.6	63.1	49.6	47.8	48.5	53.5
Mission Street e/o Fair Oaks																																				
Existing		4	5	5,904	45	75	0	0	1.8%	0.7%	61.9	4,587	750	567	93	37	5	1	8	3	69.3	77.6	82.1	-1.7	61.5	53.0	53.5	62.7	58.6	45.4	43.3	58.9	45.4	43.6	44.3	49.2
Existing+Proj		4	5	5,904	45	75	0	0	1.8%	0.7%	61.9	4,587	750	567	93	37	5	1	8	3	69.3	77.6	82.1	-1.7	61.5	53.0	53.5	62.7	58.6	45.4	43.3	58.9	45.4	43.6	44.3	49.2
Future		4	5	6,208	45	75	0	0	1.8%	0.7%	62.1	4,824	788	596	98	39	6	1	8	4	69.3	77.6	82.1	-1.7	61.8	53.2	53.7	62.9	58.8	45.6	43.6	59.1	45.6	43.8	44.5	49.4
Future+Proj		4	5	6,208	45	75	0	0	1.8%	0.7%	62.1	4,824	788	596	98	39	6	1	8	4	69.3	77.6	82.1	-1.7	61.8	53.2	53.7	62.9	58.8	45.6	43.6	59.1	45.6	43.8	44.5	49.4
Mission Street w/o Fair Oaks																																				
Existing 2017		4	5	5,000	45	75	0	0	1.8%	0.7%	61.2	3,885	635	480	79	31	5	1	7	3	69.3	77.6	82.1	-1.7	60.8	52.3	52.8	61.9	57.8	44.7	42.6	58.2	44.6	42.8	43.5	48.5
Existing+Proj		4	5	5,168	45	75	0	0	1.8%	0.7%	61.3	4,016	656	496	81	32	5	1	7	3	69.3	77.6	82.1	-1.7	61.0	52.4	52.9	62.1	58.0	44.8	42.8	58.3	44.8	43.0	43.7	48.7
Future 2023		4	5	5,288	45	75	0	0	1.8%	0.7%	61.4	4,109	672	508	83	33	5	1	7	3	69.3	77.6	82.1	-1.7	61.1	52.5	53.0	62.2	58.1	44.9	42.9	58.4	44.9	43.1	43.8	48.8
Future+Proj		4	5	5,456	45	75	0	0	1.8%	0.7%	61.5	4,239	693	524	86	34	5	1	7	3	69.3	77.6	82.1	-1.7	61.2	52.7	53.2	62.3	58.2	45.1	43.0	58.5	45.0	43.2	43.9	48.9

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such as vegetative ground cover.

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Project Name: Mission Bell Mixed-Use Project
Weekday AM Peak Hour Volumes

Intersection: 4
Fair Oaks Avenue & El Centro Street

Fair Oaks Avenue

Southbound

	right	through	left
Existing	17	903	12
Existing+Proj	17	905	12
Future	18	930	12
Future+Proj	18	932	12

El Centro Street

Eastbound

	left	through	right
Existing	13	36	44
Existing+Proj	13	36	49
Future	13	47	45
Future+Proj	13	47	50

N
W E
S

Westbound

	right	through	left
Existing	11	52	10
Existing+Proj	11	52	10
Future	11	64	10
Future+Proj	11	64	10

Northbound

	left	through	right
Existing	51	945	16
Existing+Proj	56	947	16
Future	53	975	16
Future+Proj	58	977	16

ADT

Road	Fair Oaks Avenue		El Centro Street	
Leg	North of	South of	East of	West of
Cross Street	El Centro Street		Fair Oaks Avenue	
Existing	15,208.0	15,752.0	1,096.0	1,704.0
Existing+Proj	15,240.0	15,864.0	1,096.0	1,784.0
Future	15,672.0	16,232.0	1,280.0	1,920.0
Future+Proj	15,704.0	16,344.0	1,280.0	2,000.0

2

NOISE LEVEL CONTOURS - Existing Plus Project Weekday Off-Site ADT Volumes

ROADWAY NAME / Segment	Land Use	Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center to Receptor	Alpha Factor (1)	Barrier Attn. dB(A)	Vehicle Mix: Medium Trucks	Vehicle Mix: Heavy Trucks	dB(A) CNEL	Traffic Volumes: Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	Ref. Energy Levels: A	MT	HT	Dist Adj	Ld: A	MT	HT	Total	Le: A	MT	HT	Total	Ln: A	MT	HT	Total
Fair Oaks Avenue n/o El																																				
Existing		4	15	15,208	45	75	0	0	1.8%	0.7%	66.1	####	1,931	1,460	239	95	14	3	21	9	69.3	77.6	82.1	-1.6	65.7	57.2	57.7	66.9	62.8	49.6	47.5	63.1	49.6	47.8	48.5	53.4
Existing+Proj		4	15	15,240	45	75	0	0	1.8%	0.7%	66.1	####	1,935	1,463	240	95	14	3	21	9	69.3	77.6	82.1	-1.6	65.8	57.2	57.7	66.9	62.8	49.6	47.6	63.1	49.6	47.8	48.5	53.4
Future		4	15	15,672	45	75	0	0	1.8%	0.7%	66.2	####	1,990	1,505	247	98	14	3	21	9	69.3	77.6	82.1	-1.6	65.9	57.3	57.8	67.0	62.9	49.8	47.7	63.2	49.7	47.9	48.6	53.6
Future+Proj		4	15	15,704	45	75	0	0	1.8%	0.7%	66.2	####	1,994	1,508	247	98	14	3	21	9	69.3	77.6	82.1	-1.6	65.9	57.4	57.9	67.0	62.9	49.8	47.7	63.2	49.7	47.9	48.6	53.6
Fair Oaks Avenue s/o El																																				
Existing		4	15	15,752	45	75	0	0	1.8%	0.7%	66.2	####	2,001	1,512	248	98	14	3	21	9	69.3	77.6	82.1	-1.6	65.9	57.4	57.9	67.0	62.9	49.8	47.7	63.2	49.7	47.9	48.6	53.6
Existing+Proj		4	15	15,864	45	75	0	0	1.8%	0.7%	66.3	####	2,015	1,523	250	99	14	3	21	9	69.3	77.6	82.1	-1.6	65.9	57.4	57.9	67.1	62.9	49.8	47.7	63.3	49.8	47.9	48.7	53.6
Future		4	15	16,232	45	75	0	0	1.8%	0.7%	66.4	####	2,061	1,558	255	101	15	3	22	9	69.3	77.6	82.1	-1.6	66.0	57.5	58.0	67.2	63.0	49.9	47.8	63.4	49.9	48.0	48.8	53.7
Future+Proj		4	15	16,344	45	75	0	0	1.8%	0.7%	66.4	####	2,076	1,569	257	102	15	3	22	9	69.3	77.6	82.1	-1.6	66.1	57.5	58.0	67.2	63.1	49.9	47.9	63.4	49.9	48.1	48.8	53.8
El Centro Street e/o Fair																																				
Existing		4	15	1,096	45	75	0	0	1.8%	0.7%	54.7	852	139	105	17	7	1	0	1	1	69.3	77.6	82.1	-1.6	54.3	45.8	46.3	55.5	51.3	38.2	36.1	51.7	38.1	36.3	37.1	42.0
Existing+Proj		4	15	1,096	45	75	0	0	1.8%	0.7%	54.7	852	139	105	17	7	1	0	1	1	69.3	77.6	82.1	-1.6	54.3	45.8	46.3	55.5	51.3	38.2	36.1	51.7	38.1	36.3	37.1	42.0
Future		4	15	1,280	45	75	0	0	1.8%	0.7%	55.3	995	163	123	20	8	1	0	2	1	69.3	77.6	82.1	-1.6	55.0	46.5	47.0	56.1	52.0	38.9	36.8	52.3	38.8	37.0	37.7	42.7
Future+Proj		4	15	1,280	45	75	0	0	1.8%	0.7%	55.3	995	163	123	20	8	1	0	2	1	69.3	77.6	82.1	-1.6	55.0	46.5	47.0	56.1	52.0	38.9	36.8	52.3	38.8	37.0	37.7	42.7
El Centro Street w/o Fair																																				
Existing 2017		3	15	1,704	45	75	0	0	1.8%	0.7%	56.5	1,324	216	164	27	11	2	0	2	1	69.3	77.6	82.1	-1.7	56.1	47.6	48.1	57.3	53.1	40.0	37.9	53.5	39.9	38.1	38.9	43.8
Existing+Proj		3	15	1,784	45	75	0	0	1.8%	0.7%	56.7	1,386	227	171	28	11	2	0	2	1	69.3	77.6	82.1	-1.7	56.3	47.8	48.3	57.5	53.3	40.2	38.1	53.7	40.1	38.3	39.1	44.0
Future 2023		3	15	1,920	45	75	0	0	1.8%	0.7%	57.0	1,492	244	184	30	12	2	0	3	1	69.3	77.6	82.1	-1.7	56.6	48.1	48.6	57.8	53.7	40.5	38.4	54.0	40.5	38.7	39.4	44.3
Future+Proj		3	15	2,000	45	75	0	0	1.8%	0.7%	57.2	1,554	254	192	31	12	2	0	3	1	69.3	77.6	82.1	-1.7	56.8	48.3	48.8	58.0	53.8	40.7	38.6	54.2	40.6	38.8	39.6	44.5

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such as vegetative ground cover.

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Project Name: Mission Bell Mixed-Use Project

Weekday AM Peak Hour Volumes

Intersection: 1

Meridian Avenue & Mission Street

Meridian Avenue

Southbound

	right	through	left
Existing	10	107	30
Existing+Proj	10	107	31
Future	10	110	31
Future+Proj	10	110	32

Eastbound

	left	through	right
Existing	1	433	50
Existing+Proj	1	443	52
Future	1	458	52
Future+Proj	1	468	54

Westbound

	right	through	left
Existing	28	309	5
Existing+Proj	28	316	5
Future	29	328	5
Future+Proj	29	335	5

Mission Street

N

W E

S

Northbound

	left	through	right
Existing	37	82	16
Existing+Proj	38	82	16
Future	38	84	16
Future+Proj	39	84	16

ADT

Road	Meridian Avenue		Mission Street	
Leg	North of	South of	East of	West of
Cross Street	Mission Street		Meridian Avenue	
Existing	2,064.0	2,376.0	6,568.0	6,720.0
Existing+Proj	2,072.0	2,400.0	6,712.0	6,880.0
Future	2,120.0	2,440.0	6,936.0	7,096.0
Future+Proj	2,128.0	2,464.0	7,080.0	7,256.0

2
NOISE LEVEL CONTOURS - Existing Plus Project Weekday Off-Site ADT Volumes

ROADWAY NAME / Segment	Land Use	Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center to Receptor	Alpha Factor (1	Barrier Attn. dB(A)	Vehicle Mix: Medium Trucks	Vehicle Mix: Heavy Trucks	dB(A) CNEL	Traffic Volumes: Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	Ref. Energy Levels: Dist	A	MT	HT	Adj	Ld: A	MT	HT	Total	Le: A	MT	HT	Total	Ln: A	MT	HT	Total
Meridian Avenue n/o Mission																																					
Existing		1	15	2,064	40	75	0	0	1.8%	0.7%	56.0	####	262	198	32	13	2	0	3	1		67.4	76.3	81.2	-1.8	55.4	47.5	48.3	56.7	52.4	39.9	38.2	52.8	39.2	38.0	39.1	43.6
Existing+Proj		1	15	2,072	40	75	0	0	1.8%	0.7%	56.0	####	263	199	33	13	2	0	3	1		67.4	76.3	81.2	-1.8	55.4	47.5	48.3	56.7	52.4	39.9	38.2	52.8	39.2	38.1	39.1	43.6
Future		1	15	2,120	40	75	0	0	1.8%	0.7%	56.1	####	269	204	33	13	2	0	3	1		67.4	76.3	81.2	-1.8	55.5	47.6	48.4	56.8	52.5	40.0	38.3	52.9	39.3	38.2	39.2	43.7
Future+Proj		1	15	2,128	40	75	0	0	1.8%	0.7%	56.1	####	270	204	33	13	2	0	3	1		67.4	76.3	81.2	-1.8	55.5	47.6	48.5	56.8	52.5	40.0	38.3	52.9	39.3	38.2	39.2	43.7
Meridian Avenue s/o Mission																																					
Existing		1	15	2,376	40	75	0	0	1.8%	0.7%	56.6	####	302	228	37	15	2	0	3	1		67.4	76.3	81.2	-1.8	56.0	48.1	48.9	57.3	53.0	40.5	38.8	53.4	39.8	38.7	39.7	44.2
Existing+Proj		1	15	2,400	40	75	0	0	1.8%	0.7%	56.6	####	305	230	38	15	2	0	3	1		67.4	76.3	81.2	-1.8	56.0	48.2	49.0	57.3	53.0	40.6	38.8	53.4	39.8	38.7	39.7	44.2
Future		1	15	2,440	40	75	0	0	1.8%	0.7%	56.7	####	310	234	38	15	2	0	3	1		67.4	76.3	81.2	-1.8	56.1	48.2	49.0	57.4	53.1	40.6	38.9	53.5	39.9	38.8	39.8	44.3
Future+Proj		1	15	2,464	40	75	0	0	1.8%	0.7%	56.7	####	313	237	39	15	2	0	3	1		67.4	76.3	81.2	-1.8	56.1	48.3	49.1	57.5	53.1	40.7	38.9	53.5	39.9	38.8	39.9	44.3
Mission Street e/o Meridian																																					
Existing		3	15	6,568	40	75	0	0	1.8%	0.7%	61.1	####	834	631	103	41	6	1	9	4		67.4	76.3	81.2	-1.7	60.5	52.7	53.5	61.9	57.5	45.1	43.3	57.9	44.3	43.2	44.2	48.7
Existing+Proj		3	15	6,712	40	75	0	0	1.8%	0.7%	61.2	####	852	644	106	42	6	1	9	4		67.4	76.3	81.2	-1.7	60.6	52.7	53.6	61.9	57.6	45.2	43.4	58.0	44.4	43.3	44.3	48.8
Future		3	15	6,936	40	75	0	0	1.8%	0.7%	61.3	####	881	666	109	43	6	1	9	4		67.4	76.3	81.2	-1.7	60.7	52.9	53.7	62.1	57.8	45.3	43.6	58.2	44.6	43.4	44.5	49.0
Future+Proj		3	15	7,080	40	75	0	0	1.8%	0.7%	61.4	####	899	680	111	44	6	1	10	4		67.4	76.3	81.2	-1.7	60.8	53.0	53.8	62.2	57.9	45.4	43.6	58.2	44.7	43.5	44.6	49.1
Mission Street w/o Meridian																																					
Existing		3	15	6,720	40	75	0	0	1.8%	0.7%	61.2	####	853	645	106	42	6	1	9	4		67.4	76.3	81.2	-1.7	60.6	52.8	53.6	62.0	57.6	45.2	43.4	58.0	44.4	43.3	44.3	48.8
Existing+Proj		3	15	6,880	40	75	0	0	1.8%	0.7%	61.3	####	874	660	108	43	6	1	9	4		67.4	76.3	81.2	-1.7	60.7	52.9	53.7	62.1	57.7	45.3	43.5	58.1	44.5	43.4	44.4	48.9
Future		3	15	7,096	40	75	0	0	1.8%	0.7%	61.4	####	901	681	112	44	6	1	10	4		67.4	76.3	81.2	-1.7	60.8	53.0	53.8	62.2	57.9	45.4	43.7	58.3	44.7	43.5	44.6	49.1
Future+Proj		3	15	7,256	40	75	0	0	1.8%	0.7%	61.5	####	922	697	114	45	7	1	10	4		67.4	76.3	81.2	-1.7	60.9	53.1	53.9	62.3	58.0	45.5	43.7	58.4	44.8	43.6	44.7	49.2

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such as vegetative ground cover.

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Project Name: Mission Bell Mixed-Use Project
Weekday AM Peak Hour Volumes

Intersection: 2
Freemont Avenue & Mission Street

Freemont Avenue

Southbound

	right	through	left
Existing	33	589	117
Existing+Proj	35	589	117
Future	34	615	124
Future+Proj	36	615	124

Mission Street

Eastbound

	left	through	right
Existing	53	305	111
Existing+Proj	54	312	111
Future	55	326	114
Future+Proj	56	333	114

N
W E
S

Westbound

	right	through	left
Existing	67	273	48
Existing+Proj	67	282	48
Future	72	291	50
Future+Proj	72	300	50

Northbound

	left	through	right
Existing	93	631	23
Existing+Proj	93	631	23
Future	96	657	26
Future+Proj	96	657	26

ADT

Road	Freemont Avenue		Mission Street	
Leg	North of	South of	East of	West of
Cross Street	Mission Street		Freemont Avenue	
Existing	11,920.0	11,960.0	6,664.0	6,944.0
Existing+Proj	11,944.0	11,960.0	6,792.0	7,096.0
Future	12,456.0	12,464.0	7,112.0	7,328.0
Future+Proj	12,480.0	12,464.0	7,240.0	7,480.0

2

NOISE LEVEL CONTOURS - Existing Plus Project Weekday Off-Site ADT Volumes

ROADWAY NAME Segment	Land Use	Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center to Receptor	Alpha Factor (1)	Barrier Attn. dB(A)	Vehicle Mix: Medium Trucks	Vehicle Mix: Heavy Trucks	dB(A) CNEL	Traffic Volumes: Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	Ref. Energy Levels: A	MT	HT	Dist Adj	Ld: A	MT	HT	Total	Le: A	MT	HT	Total	Ln: A	MT	HT	Total
Freemont Avenue n/o Mission																																				
Existing		3	15	11,920	45	75	0	0	1.8%	0.7%	64.9	9,262	1,514	1,144	188	74	11	2	16	7	69.3	77.6	82.1	-1.7	64.6	56.0	56.5	65.7	61.6	48.5	46.4	61.9	48.4	46.6	47.3	52.3
Existing+Proj		3	15	11,944	45	75	0	0	1.8%	0.7%	64.9	9,280	1,517	1,147	188	74	11	2	16	7	69.3	77.6	82.1	-1.7	64.6	56.0	56.5	65.7	61.6	48.5	46.4	61.9	48.4	46.6	47.3	52.3
Future		3	15	12,456	45	75	0	0	1.8%	0.7%	65.1	9,678	1,582	1,196	196	78	11	2	17	7	69.3	77.6	82.1	-1.7	64.8	56.2	56.7	65.9	61.8	48.6	46.6	62.1	48.6	46.8	47.5	52.5
Future+Proj		3	15	12,480	45	75	0	0	1.8%	0.7%	65.1	9,697	1,585	1,198	196	78	11	2	17	7	69.3	77.6	82.1	-1.7	64.8	56.2	56.7	65.9	61.8	48.7	46.6	62.1	48.6	46.8	47.5	52.5
Freemont Avenue s/o Mission																																				
Existing		3	15	11,960	45	75	0	0	1.8%	0.7%	64.9	9,293	1,519	1,148	188	75	11	2	16	7	69.3	77.6	82.1	-1.7	64.6	56.1	56.6	65.7	61.6	48.5	46.4	61.9	48.4	46.6	47.3	52.3
Existing+Proj		3	15	11,960	45	75	0	0	1.8%	0.7%	64.9	9,293	1,519	1,148	188	75	11	2	16	7	69.3	77.6	82.1	-1.7	64.6	56.1	56.6	65.7	61.6	48.5	46.4	61.9	48.4	46.6	47.3	52.3
Future		3	15	12,464	45	75	0	0	1.8%	0.7%	65.1	9,685	1,583	1,197	196	78	11	2	17	7	69.3	77.6	82.1	-1.7	64.8	56.2	56.7	65.9	61.8	48.6	46.6	62.1	48.6	46.8	47.5	52.5
Future+Proj		3	15	12,464	45	75	0	0	1.8%	0.7%	65.1	9,685	1,583	1,197	196	78	11	2	17	7	69.3	77.6	82.1	-1.7	64.8	56.2	56.7	65.9	61.8	48.6	46.6	62.1	48.6	46.8	47.5	52.5
Mission Street e/o Freemont																																				
Existing		3	15	6,664	45	75	0	0	1.8%	0.7%	62.4	5,178	846	640	105	42	6	1	9	4	69.3	77.6	82.1	-1.7	62.0	53.5	54.0	63.2	59.1	45.9	43.8	59.4	45.9	44.1	44.8	49.7
Existing+Proj		3	15	6,792	45	75	0	0	1.8%	0.7%	62.5	5,277	863	652	107	42	6	1	9	4	69.3	77.6	82.1	-1.7	62.1	53.6	54.1	63.3	59.2	46.0	43.9	59.5	46.0	44.1	44.9	49.8
Future		3	15	7,112	45	75	0	0	1.8%	0.7%	62.7	5,526	903	683	112	44	6	1	10	4	69.3	77.6	82.1	-1.7	62.3	53.8	54.3	63.5	59.4	46.2	44.1	59.7	46.2	44.3	45.1	50.0
Future+Proj		3	15	7,240	45	75	0	0	1.8%	0.7%	62.8	5,625	919	695	114	45	7	1	10	4	69.3	77.6	82.1	-1.7	62.4	53.9	54.4	63.5	59.4	46.3	44.2	59.8	46.2	44.4	45.1	50.1
Mission Street w/o Freemont																																				
Existing		3	15	6,944	45	75	0	0	1.8%	0.7%	62.6	5,395	882	667	109	43	6	1	9	4	69.3	77.6	82.1	-1.7	62.2	53.7	54.2	63.4	59.2	46.1	44.0	59.6	46.1	44.2	45.0	49.9
Existing+Proj		3	15	7,096	45	75	0	0	1.8%	0.7%	62.7	5,514	901	681	112	44	6	1	10	4	69.3	77.6	82.1	-1.7	62.3	53.8	54.3	63.5	59.3	46.2	44.1	59.7	46.1	44.3	45.1	50.0
Future		3	15	7,328	45	75	0	0	1.8%	0.7%	62.8	5,694	931	703	115	46	7	1	10	4	69.3	77.6	82.1	-1.7	62.5	53.9	54.4	63.6	59.5	46.3	44.3	59.8	46.3	44.5	45.2	50.2
Future+Proj		3	15	7,480	45	75	0	0	1.8%	0.7%	62.9	5,812	950	718	118	47	7	1	10	4	69.3	77.6	82.1	-1.7	62.5	54.0	54.5	63.7	59.6	46.4	44.4	59.9	46.4	44.6	45.3	50.2

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such as vegetative ground cover.

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Project Name: Mission Bell Mixed-Use Project
Weekday AM Peak Hour Volumes

Intersection: 3
Fair Oaks Avenue & Mission Street

Fair Oaks Avenue

Southbound

	right	through	left
Existing	69	1,183	127
Existing+Proj	77	1,183	127
Future	72	1,219	131
Future+Proj	80	1,219	131

Mission Street

Eastbound

	left	through	right
Existing	111	242	95
Existing+Proj	117	242	96
Future	115	263	99
Future+Proj	121	263	100

N
W E
S

Westbound

	right	through	left
Existing	113	203	46
Existing+Proj	113	203	46
Future	116	222	47
Future+Proj	116	222	47

Northbound

	left	through	right
Existing	85	807	42
Existing+Proj	87	807	42
Future	89	831	43
Future+Proj	91	831	43

ADT

Road	Fair Oaks Avenue		Mission Street	
Leg	North of	South of	East of	West of
Cross Street	Mission Street		Fair Oaks Avenue	
Existing	19,280.0	18,064.0	6,184.0	6,440.0
Existing+Proj	19,392.0	18,088.0	6,184.0	6,576.0
Future	19,872.0	18,624.0	6,576.0	6,880.0
Future+Proj	19,984.0	18,648.0	6,576.0	7,016.0

2

NOISE LEVEL CONTOURS - Existing Plus Project Weekday Off-Site ADT Volumes

ROADWAY NAME / Segment	Land Use	Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center to Receptor	Alpha Factor (1)	Barrier Attn. dB(A)	Vehicle Mix: Medium Trucks	Vehicle Mix: Heavy Trucks	dB(A) CNEL	Traffic Volumes: Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	Ref. Energy Levels: A	MT	HT	Dist Adj	Ld: A	MT	HT	Le: Total	A	MT	HT	Ln: Total	A	MT	HT	Total
Fair Oaks Avenue n/o Mission																																				
Existing		4	0	19,280	45	75	0	0	1.8%	0.7%	67.0	####	2,449	1,851	303	120	18	4	26	11	69.3	77.6	82.1	-1.7	66.6	58.1	58.6	67.8	63.7	50.5	48.4	64.0	50.5	48.7	49.4	54.3
Existing+Proj		4	0	19,392	45	75	0	0	1.8%	0.7%	67.0	####	2,463	1,862	305	121	18	4	26	11	69.3	77.6	82.1	-1.7	66.7	58.1	58.6	67.8	63.7	50.5	48.5	64.0	50.5	48.7	49.4	54.4
Future		4	0	19,872	45	75	0	0	1.8%	0.7%	67.1	####	2,524	1,908	313	124	18	4	27	11	69.3	77.6	82.1	-1.7	66.8	58.2	58.7	67.9	63.8	50.7	48.6	64.1	50.6	48.8	49.5	54.5
Future+Proj		4	0	19,984	45	75	0	0	1.8%	0.7%	67.1	####	2,538	1,918	314	125	18	4	27	11	69.3	77.6	82.1	-1.7	66.8	58.3	58.8	67.9	63.8	50.7	48.6	64.1	50.6	48.8	49.5	54.5
Fair Oaks Avenue s/o Mission																																				
Existing		4	5	18,064	45	75	0	0	1.8%	0.7%	66.7	####	2,294	1,734	284	113	16	4	24	10	69.3	77.6	82.1	-1.7	66.4	57.9	58.4	67.5	63.4	50.3	48.2	63.7	50.2	48.4	49.1	54.1
Existing+Proj		4	5	18,088	45	75	0	0	1.8%	0.7%	66.8	####	2,297	1,736	285	113	16	4	24	10	69.3	77.6	82.1	-1.7	66.4	57.9	58.4	67.5	63.4	50.3	48.2	63.7	50.2	48.4	49.1	54.1
Future		4	5	18,624	45	75	0	0	1.8%	0.7%	66.9	####	2,365	1,788	293	116	17	4	25	11	69.3	77.6	82.1	-1.7	66.5	58.0	58.5	67.7	63.5	50.4	48.3	63.9	50.4	48.5	49.3	54.2
Future+Proj		4	5	18,648	45	75	0	0	1.8%	0.7%	66.9	####	2,368	1,790	293	116	17	4	25	11	69.3	77.6	82.1	-1.7	66.5	58.0	58.5	67.7	63.6	50.4	48.3	63.9	50.4	48.5	49.3	54.2
Mission Street e/o Fair Oaks																																				
Existing		4	5	6,184	45	75	0	0	1.8%	0.7%	62.1	4,805	785	594	97	39	6	1	8	3	69.3	77.6	82.1	-1.7	61.7	53.2	53.7	62.9	58.8	45.6	43.5	59.1	45.6	43.8	44.5	49.4
Existing+Proj		4	5	6,184	45	75	0	0	1.8%	0.7%	62.1	4,805	785	594	97	39	6	1	8	3	69.3	77.6	82.1	-1.7	61.7	53.2	53.7	62.9	58.8	45.6	43.5	59.1	45.6	43.8	44.5	49.4
Future		4	5	6,576	45	75	0	0	1.8%	0.7%	62.4	5,110	835	631	103	41	6	1	9	4	69.3	77.6	82.1	-1.7	62.0	53.5	54.0	63.1	59.0	45.9	43.8	59.4	45.8	44.0	44.7	49.7
Future+Proj		4	5	6,576	45	75	0	0	1.8%	0.7%	62.4	5,110	835	631	103	41	6	1	9	4	69.3	77.6	82.1	-1.7	62.0	53.5	54.0	63.1	59.0	45.9	43.8	59.4	45.8	44.0	44.7	49.7
Mission Street w/o Fair Oaks																																				
Existing 2017		4	5	6,440	45	75	0	0	1.8%	0.7%	62.3	5,004	818	618	101	40	6	1	9	4	69.3	77.6	82.1	-1.7	61.9	53.4	53.9	63.0	58.9	45.8	43.7	59.3	45.7	43.9	44.6	49.6
Existing+Proj		4	5	6,576	45	75	0	0	1.8%	0.7%	62.4	5,110	835	631	103	41	6	1	9	4	69.3	77.6	82.1	-1.7	62.0	53.5	54.0	63.1	59.0	45.9	43.8	59.4	45.8	44.0	44.7	49.7
Future 2023		4	5	6,880	45	75	0	0	1.8%	0.7%	62.6	5,346	874	660	108	43	6	1	9	4	69.3	77.6	82.1	-1.7	62.2	53.7	54.2	63.3	59.2	46.1	44.0	59.6	46.0	44.2	44.9	49.9
Future+Proj		4	5	7,016	45	75	0	0	1.8%	0.7%	62.6	5,451	891	674	110	44	6	1	9	4	69.3	77.6	82.1	-1.7	62.3	53.8	54.3	63.4	59.3	46.2	44.1	59.6	46.1	44.3	45.0	50.0

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such as vegetative ground cover.

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Project Name: Mission Bell Mixed-Use Project
Weekday AM Peak Hour Volumes

Intersection: 4
Fair Oaks Avenue & El Centro Street

Fair Oaks Avenue

Southbound

	right	through	left
Existing	41	1,196	40
Existing+Proj	41	1,197	40
Future	42	1,233	41
Future+Proj	42	1,234	41

El Centro Street

Eastbound

	left	through	right
Existing	44	88	72
Existing+Proj	44	88	75
Future	45	109	74
Future+Proj	45	109	77

N
W E
S

Westbound

	right	through	left
Existing	18	38	23
Existing+Proj	18	38	23
Future	19	56	24
Future+Proj	19	56	24

Northbound

	left	through	right
Existing	62	902	45
Existing+Proj	67	904	45
Future	64	930	46
Future+Proj	69	932	46

ADT

Road	Fair Oaks Avenue		El Centro Street	
Leg	North of	South of	East of	West of
Cross Street	El Centro Street		Fair Oaks Avenue	
Existing	17,928.0	18,400.0	2,016.0	2,760.0
Existing+Proj	17,952.0	18,488.0	2,016.0	2,824.0
Future	18,480.0	18,968.0	2,360.0	3,120.0
Future+Proj	18,504.0	19,056.0	2,360.0	3,184.0

2

NOISE LEVEL CONTOURS - Existing Plus Project Weekday Off-Site ADT Volumes

ROADWAY NAME / Segment	Land Use	Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center to Receptor	Alpha Factor (1)	Barrier Attn. dB(A)	Vehicle Mix: Medium Trucks	Vehicle Mix: Heavy Trucks	dB(A) CNEL	Traffic Volumes: Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	Ref. Energy Levels: A	MT	HT	Dist Adj	Ld: A	MT	HT	Le: Total	A	MT	HT	Ln: Total	A	MT	HT	Total
Fair Oaks Avenue n/o El																																				
Existing		4	15	17,928	45	75	0	0	1.8%	0.7%	66.8	####	2,277	1,721	282	112	16	4	24	10	69.3	77.6	82.1	-1.6	66.5	57.9	58.4	67.6	63.5	50.3	48.3	63.8	50.3	48.5	49.2	54.2
Existing+Proj		4	15	17,952	45	75	0	0	1.8%	0.7%	66.8	####	2,280	1,723	283	112	16	4	24	10	69.3	77.6	82.1	-1.6	66.5	57.9	58.4	67.6	63.5	50.3	48.3	63.8	50.3	48.5	49.2	54.2
Future		4	15	18,480	45	75	0	0	1.8%	0.7%	66.9	####	2,347	1,774	291	115	17	4	25	10	69.3	77.6	82.1	-1.6	66.6	58.1	58.6	67.7	63.6	50.5	48.4	63.9	50.4	48.6	49.3	54.3
Future+Proj		4	15	18,504	45	75	0	0	1.8%	0.7%	66.9	####	2,350	1,776	291	115	17	4	25	10	69.3	77.6	82.1	-1.6	66.6	58.1	58.6	67.7	63.6	50.5	48.4	63.9	50.4	48.6	49.3	54.3
Fair Oaks Avenue s/o El																																				
Existing		4	15	18,400	45	75	0	0	1.8%	0.7%	66.9	####	2,337	1,766	290	115	17	4	25	10	69.3	77.6	82.1	-1.6	66.6	58.0	58.5	67.7	63.6	50.5	48.4	63.9	50.4	48.6	49.3	54.3
Existing+Proj		4	15	18,488	45	75	0	0	1.8%	0.7%	66.9	####	2,348	1,775	291	115	17	4	25	10	69.3	77.6	82.1	-1.6	66.6	58.1	58.6	67.7	63.6	50.5	48.4	63.9	50.4	48.6	49.3	54.3
Future		4	15	18,968	45	75	0	0	1.8%	0.7%	67.1	####	2,409	1,821	299	118	17	4	26	11	69.3	77.6	82.1	-1.6	66.7	58.2	58.7	67.8	63.7	50.6	48.5	64.1	50.5	48.7	49.4	54.4
Future+Proj		4	15	19,056	45	75	0	0	1.8%	0.7%	67.1	####	2,420	1,829	300	119	17	4	26	11	69.3	77.6	82.1	-1.6	66.7	58.2	58.7	67.9	63.7	50.6	48.5	64.1	50.6	48.7	49.5	54.4
El Centro Street e/o Fair																																				
Existing		4	15	2,016	45	75	0	0	1.8%	0.7%	57.3	1,566	256	194	32	13	2	0	3	1	69.3	77.6	82.1	-1.6	57.0	48.4	48.9	58.1	54.0	40.9	38.8	54.3	40.8	39.0	39.7	44.7
Existing+Proj		4	15	2,016	45	75	0	0	1.8%	0.7%	57.3	1,566	256	194	32	13	2	0	3	1	69.3	77.6	82.1	-1.6	57.0	48.4	48.9	58.1	54.0	40.9	38.8	54.3	40.8	39.0	39.7	44.7
Future		4	15	2,360	45	75	0	0	1.8%	0.7%	58.0	1,834	300	227	37	15	2	0	3	1	69.3	77.6	82.1	-1.6	57.7	49.1	49.6	58.8	54.7	41.5	39.5	55.0	41.5	39.7	40.4	45.3
Future+Proj		4	15	2,360	45	75	0	0	1.8%	0.7%	58.0	1,834	300	227	37	15	2	0	3	1	69.3	77.6	82.1	-1.6	57.7	49.1	49.6	58.8	54.7	41.5	39.5	55.0	41.5	39.7	40.4	45.3
El Centro Street w/o Fair																																				
Existing 2017		3	15	2,760	45	75	0	0	1.8%	0.7%	58.6	2,145	351	265	43	17	3	1	4	2	69.3	77.6	82.1	-1.7	58.2	49.7	50.2	59.3	55.2	42.1	40.0	55.6	42.0	40.2	41.0	45.9
Existing+Proj		3	15	2,824	45	75	0	0	1.8%	0.7%	58.7	2,194	359	271	44	18	3	1	4	2	69.3	77.6	82.1	-1.7	58.3	49.8	50.3	59.4	55.3	42.2	40.1	55.7	42.1	40.3	41.1	46.0
Future 2023		3	15	3,120	45	75	0	0	1.8%	0.7%	59.1	2,424	396	300	49	19	3	1	4	2	69.3	77.6	82.1	-1.7	58.8	50.2	50.7	59.9	55.8	42.6	40.6	56.1	42.6	40.8	41.5	46.4
Future+Proj		3	15	3,184	45	75	0	0	1.8%	0.7%	59.2	2,474	404	306	50	20	3	1	4	2	69.3	77.6	82.1	-1.7	58.8	50.3	50.8	60.0	55.9	42.7	40.6	56.2	42.7	40.9	41.6	46.5

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such as vegetative ground cover.

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

APPENDIX C

Construction Noise Worksheets

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 3/7/2019
Case Description: MissionBellMixedUse_Demolition

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Site 1	Commerci	57.8	57.8	57.8

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	40	0
Dozer	No	40		81.7	40	0
Tractor	No	40	84		40	0
Tractor	No	40	84		40	0

Results

Equipment		Calculated (dBA) *Lmax	Leq	Noise Limits (dBA) Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq	Noise Limit Exceedance (dBA) Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq
Concrete Saw		91.5	84.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer		83.6	79.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor		85.9	82	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor		85.9	82	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	91.5	88.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Site 2	Residential	57.4	57.4	57.4

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	195	5
Dozer	No	40		81.7	195	5
Tractor	No	40	84		195	5
Tractor	No	40	84		195	5

Results

Equipment		Calculated (dBA) *Lmax	Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Concrete Saw		72.8	65.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer		64.8	60.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor		67.2	63.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor		67.2	63.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	72.8	69.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Site 4	Commercia	59.6	59.6	59.6

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	285	5
Dozer	No	40		81.7	285	5
Tractor	No	40	84		285	5
Tractor	No	40	84		285	5

Results

Equipment		Calculated (dBA) *Lmax	Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Concrete Saw		69.5	62.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer		61.6	57.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor		63.9	59.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor		63.9	59.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	69.5	66.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Site 5	Residential	57.4	57.4	57.4

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	155	5
Dozer	No	40		81.7	155	5
Tractor	No	40	84		155	5
Tractor	No	40	84		155	5

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw	74.8	67.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	66.8	62.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	69.2	65.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	69.2	65.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	74.8	71.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 3/7/2019
Case Description: MissionBellMixedUse_Paving

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Site 1	Commercial	57.8	57.8	57.8

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	40	5
Dozer	No	40		81.7	40	5

		Calculated (dBA)		Results Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator		77.6	73.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer		78.6	74.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	78.6	77.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Site 2	Residential	57.4	57.4	57.4

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	195	5
Dozer	No	40		81.7	195	5

		Calculated (dBA)		Results Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator		63.9	59.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer		64.8	60.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	64.8	63.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Site 4	Commercial	59.6	59.6	59.6

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	285	5
Dozer	No	40		81.7	285	5

		Calculated (dBA)		Results Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator		60.6	56.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer		61.6	57.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	61.6	60.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

Roadway Construction Noise Model (RCNM),Version 1.1

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Site 5	Residential	57.4	57.4	57.4

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	155	5
Dozer	No	40		81.7	155	5

	Calculated (dBA)		Results	Noise Limits (dBA)						Noise Limit Exceedance (dBA)				
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator	65.9	61.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	66.8	62.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	66.8	65.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 3/7/2019
Case Description: MissionBellMixedUse_BuildingConstruction

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Site 1	Commercial	57.8	57.8	57.8

Equipment Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Tractor	No		40	84	40	0
Tractor	No		40	84	40	0
Forklift	No		40	85	40	0
Forklift	No		40	85	40	0

		Calculated (dBA)		Results						Noise Limits (dBA)						Noise Limit Exceedance (dBA)							
				Day		Evening		Night		Day				Evening		Night							
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Tractor		85.9	82	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor		85.9	82	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Forklift		86.9	83	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Forklift		86.9	83	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	86.9	88.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Site 2	Residential	57.4	57.4	57.4

Equipment Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Tractor	No		40	84	195	5
Tractor	No		40	84	195	5
Forklift	No		40	85	195	5
Forklift	No		40	85	195	5

		Calculated (dBA)		Results						Noise Limits (dBA)						Noise Limit Exceedance (dBA)							
				Day		Evening		Night		Day				Evening		Night							
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Tractor		67.2	63.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor		67.2	63.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Forklift		68.2	64.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Forklift		68.2	64.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	68.2	69.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Site 4	Commercial	59.6	59.6	59.6

Equipment Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Tractor	No		40	84	285	5
Tractor	No		40	84	285	5
Forklift	No		40	85	285	5
Forklift	No		40	85	285	5

	Calculated (dBA)		Results						Noise Limits (dBA)						Noise Limit Exceedance (dBA)							
			Day		Evening		Night		Day				Evening		Night							
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Tractor	63.9	59.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Tractor		63.9	59.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Forklift		64.9	60.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Forklift		64.9	60.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	64.9	66.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Site 5	Residential	57.4	57.4	57.4

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Tractor	No	40	84		155	5
Tractor	No	40	84		155	5
Forklift	No	40	85		155	5
Forklift	No	40	85		155	5

	Calculated (dBA)		Results											
			Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Tractor	69.2	65.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	69.2	65.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Forklift	70.2	66.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Forklift	70.2	66.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	70.2	71.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 3/7/2019
Case Description: MissionBellMixedUse_Paving

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Site 1	Commercial	57.8	57.8	57.8

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Mixer Truck	No	40		78.8	40	0
Paver	No	50		77.2	40	0
Roller	No	20		80	40	0
Tractor	No	40	84		40	0
Concrete Mixer Truck	No	40		78.8	40	0
Concrete Mixer Truck	No	40		78.8	40	0
Concrete Mixer Truck	No	40		78.8	40	0

		Calculated (dBA)		Results	Noise Limits (dBA)				Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Mixer Truck		80.7	76.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver		79.2	76.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller		81.9	74.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor		85.9	82	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck		80.7	76.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck		80.7	76.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck		80.7	76.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	85.9	86.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Site 2	Residential	57.4	57.4	57.4

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Mixer Truck	No	40		78.8	195	5
Paver	No	50		77.2	195	5
Roller	No	20		80	195	5
Tractor	No	40	84		195	5
Concrete Mixer Truck	No	40		78.8	195	5
Concrete Mixer Truck	No	40		78.8	195	5
Concrete Mixer Truck	No	40		78.8	195	5

		Calculated (dBA)		Results	Noise Limits (dBA)				Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Mixer Truck		62	58	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver		60.4	57.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller		63.2	56.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor		67.2	63.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck		62	58	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck		62	58	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck		62	58	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	67.2	67.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Site 4	Commercial	59.6	59.6	59.6

Roadway Construction Noise Model (RCNM),Version 1.1

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Mixer Truck	No	40		78.8	285	5
Paver	No	50		77.2	285	5
Roller	No	20		80	285	5
Tractor	No	40	84		285	5
Concrete Mixer Truck	No	40		78.8	285	5
Concrete Mixer Truck	No	40		78.8	285	5
Concrete Mixer Truck	No	40		78.8	285	5

Results

	Calculated (dBA)			Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Mixer Truck	58.7	54.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	57.1	54.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	59.9	52.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	63.9	59.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck	58.7	54.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck	58.7	54.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck	58.7	54.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	63.9	64.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Site 5	Residential	57.4	57.4	57.4

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Mixer Truck	No	40		78.8	155	5
Paver	No	50		77.2	155	5
Roller	No	20		80	155	5
Tractor	No	40	84		155	5
Concrete Mixer Truck	No	40		78.8	155	5
Concrete Mixer Truck	No	40		78.8	155	5
Concrete Mixer Truck	No	40		78.8	155	5

Results

	Calculated (dBA)			Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Mixer Truck	64	60	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	62.4	59.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	65.2	58.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	69.2	65.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck	64	60	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck	64	60	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck	64	60	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	69.2	69.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 3/7/2019
Case Description: MissionBellMixedUse_Grading

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Site 1	Commercial	57.8	57.8	57.8

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

Results

Equipment	Calculated (dBA) *Lmax	Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Compressor (air)	79.6	75.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	79.6	75.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Site 2	Residential	57.4	57.4	57.4

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	195	5

Results

Equipment	Calculated (dBA) *Lmax	Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Compressor (air)	60.8	56.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	60.8	56.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Site 4	Commercial	59.6	59.6	59.6

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	285	5

Results

Equipment	Calculated (dBA) *Lmax	Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Compressor (air)	57.6	53.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	57.6	53.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Site 5	Residential	57.4	57.4	57.4

Equipment

Spec	Actual	Receptor	Estimated

Roadway Construction Noise Model (RCNM),Version 1.1

Description	Impact Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Compressor (air)	No	40		77.7	155	5

Equipment	Calculated (dBA) *Lmax	Calculated (dBA) Leq	Results Day Lmax	Results Day Leq	Noise Limits (dBA) Evening Lmax	Noise Limits (dBA) Evening Leq	Noise Limits (dBA) Night Lmax	Noise Limits (dBA) Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Noise Limit Exceedance (dBA) Day Leq	Noise Limit Exceedance (dBA) Evening Lmax	Noise Limit Exceedance (dBA) Evening Leq	Noise Limit Exceedance (dBA) Night Lmax	Noise Limit Exceedance (dBA) Night Leq
Compressor (air)	62.8	58.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	62.8	58.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat 3/1/2019
Case Desci Mission Bell Mixed

---- Receptor #1 ----

	Baselines (dBA)		
Descriptio	Land Use	Daytime	Evening	Night
Amy's Play	Commerci	68.7	68.7	68.7

			Equipment			
	Impact		Spec Lmax	Actual Lmax	Receptor Distance	Estimated Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Compressor (air)	No	40		77.7	25	0

			Results											
	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10
Compressor (air)	83.7	82.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	83.7	82.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

	Baselines (dBA)		
Descriptio	Land Use	Daytime	Evening	Night
South Pas	Commerci	68.7	68.7	68.7

			Equipment			
	Impact		Spec Lmax	Actual Lmax	Receptor Distance	Estimated Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Compressor (air)	No	40		77.7	30	0

			Results											
	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10
Compressor (air)	82.1	81.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	82.1	81.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat 3/1/2019
Case Descr Mission Bell Mixed

---- Receptor #1 ----

		Baselines (dBA)		
Descriptio	Land Use	Daytime	Evening	Night
Amy's Play	Commerci	68.7	68.7	68.7

			Equipment			
	Impact		Spec Lmax	Actual Lmax	Receptor Distance	Estimated Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Man Lift	No	20		74.7	25	0
Man Lift	No	20		74.7	25	0
Backhoe	No	40		77.6	25	0
Backhoe	No	40		77.6	25	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10
Man Lift	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	83.6	82.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	83.6	82.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	83.6	86.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

		Baselines (dBA)		
Descriptio	Land Use	Daytime	Evening	Night
South Pasa	Commerci	68.7	68.7	68.7

			Equipment			
	Impact		Spec Lmax	Actual Lmax	Receptor Distance	Estimated Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Man Lift	No	20		74.7	30	0
Man Lift	No	20		74.7	30	0
Backhoe	No	40		77.6	30	0
Backhoe	No	40		77.6	30	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10
Man Lift	79.1	75.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	79.1	75.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	82	81	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	82	81	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	82	85	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat 3/1/2019
Case Desci Mission Bell Mixed

---- Receptor #1 ----

	Baselines (dBA)		
Descriptio	Land Use	Daytime	Evening	Night
Amy's Play	Commerci	68.7	68.7	68.7

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		77.6	25	0
Backhoe	No	40		77.6	25	0
Dozer	No	40		81.7	25	0
Concrete Saw	No	20		89.6	25	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10
Backhoe	83.6	82.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	83.6	82.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	87.7	86.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Saw	95.6	91.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	95.6	93.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

	Baselines (dBA)		
Descriptio	Land Use	Daytime	Evening	Night
South Pasa	Commerci	68.7	68.7	68.7

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		77.6	30	0
Backhoe	No	40		77.6	30	0
Dozer	No	40		81.7	30	0
Concrete Saw	No	20		89.6	30	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10
Backhoe	82	81	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	82	81	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	86.1	85.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Saw	94	90	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	94	92	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat 3/1/2019
Case Desc Mission Bell Mixed

---- Receptor #1 ----

Descriptio	Land Use	Baselines (dBA) Daytime	Evening	Night
Amy's Play	Commerci	68.7	68.7	68.7

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	25	0
Excavator	No	40		80.7	25	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10
Dozer	87.7	86.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	86.7	85.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	87.7	89.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Descriptio	Land Use	Baselines (dBA) Daytime	Evening	Night
South Pas	Commerci	68.7	68.7	68.7

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	30	0
Excavator	No	40		80.7	30	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10
Dozer	86.1	85.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	85.1	84.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	86.1	87.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat 3/1/2019
Case Desc Mission Bell Mixed

---- Receptor #1 ----

	Baselines (dBA)		
Descriptio	Land Use	Daytime	Evening	Night
Amy's Play	Commerci	68.7	68.7	68.7

Equipment Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Mixer Truck	No	40		78.8	25	0
Concrete Mixer Truck	No	40		78.8	25	0
Concrete Mixer Truck	No	40		78.8	25	0
Concrete Mixer Truck	No	40		78.8	25	0
Paver	No	50		77.2	25	0
Roller	No	20		80	25	0
Backhoe	No	40		77.6	25	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10
Concrete Mixer Truck	84.8	83.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck	84.8	83.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck	84.8	83.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck	84.8	83.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	83.2	83.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	86	82	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	83.6	82.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	86	91.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

	Baselines (dBA)		
Descriptio	Land Use	Daytime	Evening	Night
South Pas	Commerci	68.7	68.7	68.7

Equipment Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Mixer Truck	No	40		78.8	30	0
Concrete Mixer Truck	No	40		78.8	30	0
Concrete Mixer Truck	No	40		78.8	30	0
Concrete Mixer Truck	No	40		78.8	30	0
Paver	No	50		77.2	30	0
Roller	No	20		80	30	0
Backhoe	No	40		77.6	30	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10
Concrete Mixer Truck	83.2	82.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck	83.2	82.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck	83.2	82.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck	83.2	82.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	81.7	81.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	84.4	80.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	82	81	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	84.4	90.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Project Name: Mission Bell Mixed-Use Project

Weekday AM Peak Hour Volumes

Intersection: 1

Meridian Avenue & Mission Street

Meridian Avenue

Southbound

	right	through	left
Existing	5	77	10
Existing+Proj	5	77	11
Future	5	79	10
Future+Proj	5	79	11

Northbound

	left	through	right
Existing	68	95	12
Existing+Proj	70	95	12
Future	70	98	12
Future+Proj	72	98	12

Mission Street

Eastbound

	left	through	right
Existing	6	298	53
Existing+Proj	6	308	55
Future	6	312	55
Future+Proj	6	322	57

Westbound

	right	through	left
Existing	41	280	6
Existing+Proj	42	292	6
Future	42	297	6
Future+Proj	43	309	6

N

W E

S

ADT

Road	Meridian Avenue		Mission Street	
Leg	North of	South of	East of	West of
Cross Street	Mission Street		Meridian Avenue	
Existing	1,872.0	2,488.0	5,176.0	5,680.0
Existing+Proj	1,888.0	2,520.0	5,368.0	5,888.0
Future	1,920.0	2,560.0	5,432.0	5,960.0
Future+Proj	1,936.0	2,592.0	5,624.0	6,168.0
	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0

2

NOISE LEVEL CONTOURS - Existing Plus Project Weekday Off-Site ADT Volumes

ROADWAY NAME Segment	Land Use	Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center to Receptor	Alpha Factor (1)	Barrier Attn. dB(A)	Vehicle Mix Medium Trucks	Vehicle Mix Heavy Trucks	dB(A) CNEL	Traffic Volumes Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	Ref. Energy Levels A	MT	HT	Dist Adj	Ld A	MT	HT	Total	Le A	MT	HT	Total	Ln A	MT	HT	Total
Meridian Avenue n/o Mission																																				
Existing		1	15	1,872	40	75	0	0	1.8%	0.7%	55.5	1,455	238	180	29	12	2	0	3	1	67.4	76.3	81.2	-1.8	54.9	47.1	47.9	56.3	51.9	39.5	37.7	52.3	38.8	37.6	38.7	43.1
Existing+Proj		1	15	1,888	40	75	0	0	1.8%	0.7%	55.6	1,467	240	181	30	12	2	0	3	1	67.4	76.3	81.2	-1.8	55.0	47.1	47.9	56.3	52.0	39.5	37.8	52.4	38.8	37.7	38.7	43.2
Future		1	15	1,920	40	75	0	0	1.8%	0.7%	55.6	1,492	244	184	30	12	2	0	3	1	67.4	76.3	81.2	-1.8	55.0	47.2	48.0	56.4	52.1	39.6	37.8	52.5	38.9	37.7	38.8	43.3
Future+Proj		1	15	1,936	40	75	0	0	1.8%	0.7%	55.7	1,504	246	186	30	12	2	0	3	1	67.4	76.3	81.2	-1.8	55.1	47.2	48.0	56.4	52.1	39.6	37.9	52.5	38.9	37.8	38.8	43.3
		1	15	0	40	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	67.4	76.3	81.2	-1.8	####	####	####	####	####	####	####	####	####	####	####	####
		1	15	0	40	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	67.4	76.3	81.2	-1.8	####	####	####	####	####	####	####	####	####	####	####	####
		1	15	0	40	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	67.4	76.3	81.2	-1.8	####	####	####	####	####	####	####	####	####	####	####	####
Meridian Avenue s/o Mission																																				
Existing		1	15	2,488	40	75	0	0	1.8%	0.7%	56.8	1,933	316	239	39	16	2	0	3	1	67.4	76.3	81.2	-1.8	56.2	48.3	49.1	57.5	53.2	40.7	39.0	53.6	40.0	38.9	39.9	44.4
Existing+Proj		1	15	2,520	40	75	0	0	1.8%	0.7%	56.8	1,958	320	242	40	16	2	1	3	1	67.4	76.3	81.2	-1.8	56.2	48.4	49.2	57.6	53.2	40.8	39.0	53.6	40.0	38.9	40.0	44.4
Future		1	15	2,560	40	75	0	0	1.8%	0.7%	56.9	1,989	325	246	40	16	2	1	3	1	67.4	76.3	81.2	-1.8	56.3	48.4	49.3	57.6	53.3	40.8	39.1	53.7	40.1	39.0	40.0	44.5
Future+Proj		1	15	2,592	40	75	0	0	1.8%	0.7%	56.9	2,014	329	249	41	16	2	1	4	1	67.4	76.3	81.2	-1.8	56.3	48.5	49.3	57.7	53.4	40.9	39.1	53.8	40.2	39.0	40.1	44.6
		1	15	0	40	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	67.4	76.3	81.2	-1.8	####	####	####	####	####	####	####	####	####	####	####	####
		1	15	0	40	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	67.4	76.3	81.2	-1.8	####	####	####	####	####	####	####	####	####	####	####	####
		1	15	0	40	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	67.4	76.3	81.2	-1.8	####	####	####	####	####	####	####	####	####	####	####	####
Mission Street e/o Meridian																																				
Existing		3	15	5,176	40	75	0	0	1.8%	0.7%	60.1	4,022	657	497	81	32	5	1	7	3	67.4	76.3	81.2	-1.7	59.5	51.6	52.4	60.8	56.5	44.0	42.3	56.9	43.3	42.2	43.2	47.7
Existing+Proj		3	15	5,368	40	75	0	0	1.8%	0.7%	60.2	4,171	682	515	84	33	5	1	7	3	67.4	76.3	81.2	-1.7	59.6	51.8	52.6	61.0	56.7	44.2	42.4	57.0	43.5	42.3	43.4	47.9
Future		3	15	5,432	40	75	0	0	1.8%	0.7%	60.3	4,221	690	521	85	34	5	1	7	3	67.4	76.3	81.2	-1.7	59.7	51.8	52.7	61.0	56.7	44.2	42.5	57.1	43.5	42.4	43.4	47.9
Future+Proj		3	15	5,624	40	75	0	0	1.8%	0.7%	60.4	4,370	714	540	89	35	5	1	8	3	67.4	76.3	81.2	-1.7	59.8	52.0	52.8	61.2	56.9	44.4	42.6	57.2	43.7	42.5	43.6	48.1
		3	15	0	40	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	67.4	76.3	81.2	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
		3	15	0	40	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	67.4	76.3	81.2	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
		3	15	0	40	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	67.4	76.3	81.2	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
Mission Street w/o Meridian																																				
Existing		3	15	5,680	40	75	0	0	1.8%	0.7%	60.5	4,413	721	545	89	35	5	1	8	3	67.4	76.3	81.2	-1.7	59.9	52.0	52.8	61.2	56.9	44.4	42.7	57.3	43.7	42.6	43.6	48.1
Existing+Proj		3	15	5,888	40	75	0	0	1.8%	0.7%	60.6	4,575	748	565	93	37	5	1	8	3	67.4	76.3	81.2	-1.7	60.0	52.2	53.0	61.4	57.1	44.6	42.8	57.4	43.9	42.7	43.8	48.3
Future		3	15	5,960	40	75	0	0	1.8%	0.7%	60.7	4,631	757	572	94	37	5	1	8	3	67.4	76.3	81.2	-1.7	60.1	52.2	53.1	61.4	57.1	44.6	42.9	57.5	43.9	42.8	43.8	48.3
Future+Proj		3	15	6,168	40	75	0	0	1.8%	0.7%	60.8	4,793	783	592	97	38	6	1	8	3	67.4	76.3	81.2	-1.7	60.2	52.4	53.2	61.6	57.3	44.8	43.0	57.7	44.1	42.9	44.0	48.5
		3	15	0	40	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	67.4	76.3	81.2	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
		3	15	0	40	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	67.4	76.3	81.2	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
		3	15	0	40	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	67.4	76.3	81.2	-1.7	####	####	####	####	####	####	####	####	####	####	####	####

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such as vegetative ground cover.

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Project Name: Mission Bell Mixed-Use Project
Weekday AM Peak Hour Volumes

Intersection: 2
Freemont Avenue & Mission Street

Freemont Avenue

Southbound

	right	through	left
Existing	24	454	61
Existing+Proj	26	454	61
Future	25	472	65
Future+Proj	27	472	65

Mission Street

Eastbound

	left	through	right
Existing	41	208	72
Existing+Proj	43	219	72
Future	42	219	74
Future+Proj	44	230	74

N
W E
S

Westbound

	right	through	left
Existing	95	291	36
Existing+Proj	95	300	36
Future	100	309	38
Future+Proj	100	318	38

Northbound

	left	through	right
Existing	71	670	24
Existing+Proj	71	670	24
Future	73	694	26
Future+Proj	73	694	26

ADT

Road	Freemont Avenue		Mission Street	
Leg	North of	South of	East of	West of
Cross Street	Mission Street		Freemont Avenue	
Existing	10,760.0	10,616.0	5,720.0	5,656.0
Existing+Proj	10,792.0	10,616.0	5,880.0	5,848.0
Future	11,184.0	11,016.0	6,056.0	5,936.0
Future+Proj	11,216.0	11,016.0	6,216.0	6,128.0
	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0

2

NOISE LEVEL CONTOURS - Existing Plus Project Weekday Off-Site ADT Volumes

ROADWAY NAME Segment	Land Use	Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center to Receptor	Alpha Factor (1	Barrier Attn. dB(A)	Vehicle Mix Medium Trucks	Vehicle Mix Heavy Trucks	dB(A) CNEL	Traffic Volumes Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	Ref. Energy Levels A	MT	HT	Dist Adj	Ld A	MT	HT	Total	Le A	MT	HT	Total	Ln A	MT	HT	Total
Freemont Avenue n/o																																				
Existing		3	15	10,760	45	75	0	0	1.8%	0.7%	64.5	####	####	####	169	67	10	2	15	6	69.3	77.6	82.1	-1.7	64.1	55.6	56.1	65.3	61.1	48.0	45.9	61.5	48.0	46.1	46.9	51.8
Existing+Proj		3	15	10,792	45	75	0	0	1.8%	0.7%	64.5	####	####	####	170	67	10	2	15	6	69.3	77.6	82.1	-1.7	64.1	55.6	56.1	65.3	61.2	48.0	45.9	61.5	48.0	46.2	46.9	51.8
Future		3	15	11,184	45	75	0	0	1.8%	0.7%	64.6	####	####	####	176	70	10	2	15	6	69.3	77.6	82.1	-1.7	64.3	55.8	56.3	65.4	61.3	48.2	46.1	61.6	48.1	46.3	47.0	52.0
Future+Proj		3	15	11,216	45	75	0	0	1.8%	0.7%	64.7	####	####	####	177	70	10	2	15	6	69.3	77.6	82.1	-1.7	64.3	55.8	56.3	65.4	61.3	48.2	46.1	61.7	48.1	46.3	47.0	52.0
		3	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
		3	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
		3	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
Freemont Avenue s/o Mission																																				
Existing		3	15	10,616	45	75	0	0	1.8%	0.7%	64.4	####	####	####	167	66	10	2	14	6	69.3	77.6	82.1	-1.7	64.1	55.5	56.0	65.2	61.1	48.0	45.9	61.4	47.9	46.1	46.8	51.8
Existing+Proj		3	15	10,616	45	75	0	0	1.8%	0.7%	64.4	####	####	####	167	66	10	2	14	6	69.3	77.6	82.1	-1.7	64.1	55.5	56.0	65.2	61.1	48.0	45.9	61.4	47.9	46.1	46.8	51.8
Future		3	15	11,016	45	75	0	0	1.8%	0.7%	64.6	####	####	####	173	69	10	2	15	6	69.3	77.6	82.1	-1.7	64.2	55.7	56.2	65.4	61.3	48.1	46.0	61.6	48.1	46.2	47.0	51.9
Future+Proj		3	15	11,016	45	75	0	0	1.8%	0.7%	64.6	####	####	####	173	69	10	2	15	6	69.3	77.6	82.1	-1.7	64.2	55.7	56.2	65.4	61.3	48.1	46.0	61.6	48.1	46.2	47.0	51.9
		3	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
		3	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
		3	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
Mission Street e/o Freemont																																				
Existing		3	15	5,720	45	75	0	0	1.8%	0.7%	61.7	####	726	549	90	36	5	1	8	3	69.3	77.6	82.1	-1.7	61.4	52.9	53.4	62.5	58.4	45.3	43.2	58.7	45.2	43.4	44.1	49.1
Existing+Proj		3	15	5,880	45	75	0	0	1.8%	0.7%	61.9	####	747	564	93	37	5	1	8	3	69.3	77.6	82.1	-1.7	61.5	53.0	53.5	62.6	58.5	45.4	43.3	58.9	45.3	43.5	44.2	49.2
Future		3	15	6,056	45	75	0	0	1.8%	0.7%	62.0	####	769	581	95	38	6	1	8	3	69.3	77.6	82.1	-1.7	61.6	53.1	53.6	62.8	58.7	45.5	43.4	59.0	45.5	43.6	44.4	49.3
Future+Proj		3	15	6,216	45	75	0	0	1.8%	0.7%	62.1	####	789	597	98	39	6	1	8	4	69.3	77.6	82.1	-1.7	61.7	53.2	53.7	62.9	58.8	45.6	43.5	59.1	45.6	43.8	44.5	49.4
		3	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
		3	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
		3	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
Mission Street w/o Freemont																																				
Existing		3	15	5,656	45	75	0	0	1.8%	0.7%	61.7	####	718	543	89	35	5	1	8	3	69.3	77.6	82.1	-1.7	61.3	52.8	53.3	62.5	58.4	45.2	43.1	58.7	45.2	43.3	44.1	49.0
Existing+Proj		3	15	5,848	45	75	0	0	1.8%	0.7%	61.8	####	743	561	92	36	5	1	8	3	69.3	77.6	82.1	-1.7	61.5	52.9	53.4	62.6	58.5	45.4	43.3	58.8	45.3	43.5	44.2	49.2
Future		3	15	5,936	45	75	0	0	1.8%	0.7%	61.9	####	754	570	93	37	5	1	8	3	69.3	77.6	82.1	-1.7	61.5	53.0	53.5	62.7	58.6	45.4	43.3	58.9	45.4	43.6	44.3	49.2
Future+Proj		3	15	6,128	45	75	0	0	1.8%	0.7%	62.0	####	778	588	96	38	6	1	8	3	69.3	77.6	82.1	-1.7	61.7	53.2	53.7	62.8	58.7	45.6	43.5	59.0	45.5	43.7	44.4	49.4
		3	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
		3	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
		3	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such as vegetative ground cover.

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Project Name: Mission Bell Mixed-Use Project
Weekday AM Peak Hour Volumes

Intersection: 3
Fair Oaks Avenue & Mission Street

Fair Oaks Avenue

Southbound

	right	through	left
Existing	43	870	86
Existing+Proj	51	870	86
Future	45	896	89
Future+Proj	53	896	89

Mission Street

Eastbound

	left	through	right
Existing	42	156	48
Existing+Proj	51	156	50
Future	43	168	49
Future+Proj	52	168	51

N
W E
S

Westbound

	right	through	left
Existing	190	280	13
Existing+Proj	190	280	13
Future	196	297	13
Future+Proj	196	297	13

Northbound

	left	through	right
Existing	56	901	13
Existing+Proj	58	901	13
Future	59	928	13
Future+Proj	61	928	13

ADT

Road	Fair Oaks Avenue		Mission Street	
Leg	North of	South of	East of	West of
Cross Street	Mission Street		Fair Oaks Avenue	
Existing	17,056.0	15,208.0	5,904.0	5,000.0
Existing+Proj	17,192.0	15,240.0	5,904.0	5,168.0
Future	17,576.0	15,664.0	6,208.0	5,288.0
Future+Proj	17,712.0	15,696.0	6,208.0	5,456.0
	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0

2

NOISE LEVEL CONTOURS - Existing Plus Project Weekday Off-Site ADT Volumes

ROADWAY NAME Segment	Land Use	Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center tc Receptor	Alpha Factor (1	Barrier Attn. dB(A)	Vehicle Mix Medium Trucks	Vehicle Mix Heavy Trucks	dB(A) CNEL	Traffic Volumes Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	Ref. Energy Levels A	MT	HT	Dist Adj	Ld A	MT	HT	Total	Le A	MT	HT	Total	Ln A	MT	HT	Total
Fair Oaks Avenue n/o																																				
Existing		4	0	17,056	45	75	0	0	1.8%	0.7%	66.5	####	####	####	268	106	16	3	23	10	69.3	77.6	82.1	-1.7	66.1	57.6	58.1	67.2	63.1	50.0	47.9	63.5	49.9	48.1	48.8	53.8
Existing+Proj		4	0	17,192	45	75	0	0	1.8%	0.7%	66.5	####	####	####	271	107	16	3	23	10	69.3	77.6	82.1	-1.7	66.1	57.6	58.1	67.3	63.2	50.0	47.9	63.5	50.0	48.2	48.9	53.8
Future		4	0	17,576	45	75	0	0	1.8%	0.7%	66.6	####	####	####	277	110	16	3	24	10	69.3	77.6	82.1	-1.7	66.2	57.7	58.2	67.4	63.3	50.1	48.0	63.6	50.1	48.2	49.0	53.9
Future+Proj		4	0	17,712	45	75	0	0	1.8%	0.7%	66.6	####	####	####	279	110	16	4	24	10	69.3	77.6	82.1	-1.7	66.3	57.7	58.2	67.4	63.3	50.2	48.1	63.6	50.1	48.3	49.0	54.0
		4	0	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
		4	0	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
		4	0	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
Fair Oaks Avenue s/o Mission																																				
Existing		4	5	15,208	45	75	0	0	1.8%	0.7%	66.0	####	####	####	239	95	14	3	21	9	69.3	77.6	82.1	-1.7	65.6	57.1	57.6	66.8	62.7	49.5	47.4	63.0	49.5	47.7	48.4	53.3
Existing+Proj		4	5	15,240	45	75	0	0	1.8%	0.7%	66.0	####	####	####	240	95	14	3	21	9	69.3	77.6	82.1	-1.7	65.7	57.1	57.6	66.8	62.7	49.5	47.5	63.0	49.5	47.7	48.4	53.3
Future		4	5	15,664	45	75	0	0	1.8%	0.7%	66.1	####	####	####	247	98	14	3	21	9	69.3	77.6	82.1	-1.7	65.8	57.2	57.7	66.9	62.8	49.7	47.6	63.1	49.6	47.8	48.5	53.5
Future+Proj		4	5	15,696	45	75	0	0	1.8%	0.7%	66.1	####	####	####	247	98	14	3	21	9	69.3	77.6	82.1	-1.7	65.8	57.3	57.8	66.9	62.8	49.7	47.6	63.1	49.6	47.8	48.5	53.5
		4	5	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
		4	5	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
		4	5	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
Mission Street e/o Fair Oaks																																				
Existing		4	5	5,904	45	75	0	0	1.8%	0.7%	61.9	####	750	567	93	37	5	1	8	3	69.3	77.6	82.1	-1.7	61.5	53.0	53.5	62.7	58.6	45.4	43.3	58.9	45.4	43.6	44.3	49.2
Existing+Proj		4	5	5,904	45	75	0	0	1.8%	0.7%	61.9	####	750	567	93	37	5	1	8	3	69.3	77.6	82.1	-1.7	61.5	53.0	53.5	62.7	58.6	45.4	43.3	58.9	45.4	43.6	44.3	49.2
Future		4	5	6,208	45	75	0	0	1.8%	0.7%	62.1	####	788	596	98	39	6	1	8	4	69.3	77.6	82.1	-1.7	61.8	53.2	53.7	62.9	58.8	45.6	43.6	59.1	45.6	43.8	44.5	49.4
Future+Proj		4	5	6,208	45	75	0	0	1.8%	0.7%	62.1	####	788	596	98	39	6	1	8	4	69.3	77.6	82.1	-1.7	61.8	53.2	53.7	62.9	58.8	45.6	43.6	59.1	45.6	43.8	44.5	49.4
		4	5	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
		4	5	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
		4	5	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
Mission Street w/o Fair Oaks																																				
Existing 2017		4	5	5,000	45	75	0	0	1.8%	0.7%	61.2	####	635	480	79	31	5	1	7	3	69.3	77.6	82.1	-1.7	60.8	52.3	52.8	61.9	57.8	44.7	42.6	58.2	44.6	42.8	43.5	48.5
Existing+Proj		4	5	5,168	45	75	0	0	1.8%	0.7%	61.3	####	656	496	81	32	5	1	7	3	69.3	77.6	82.1	-1.7	61.0	52.4	52.9	62.1	58.0	44.8	42.8	58.3	44.8	43.0	43.7	48.7
Future 2023		4	5	5,288	45	75	0	0	1.8%	0.7%	61.4	####	672	508	83	33	5	1	7	3	69.3	77.6	82.1	-1.7	61.1	52.5	53.0	62.2	58.1	44.9	42.9	58.4	44.9	43.1	43.8	48.8
Future+Proj		4	5	5,456	45	75	0	0	1.8%	0.7%	61.5	####	693	524	86	34	5	1	7	3	69.3	77.6	82.1	-1.7	61.2	52.7	53.2	62.3	58.2	45.1	43.0	58.5	45.0	43.2	43.9	48.9
		4	5	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
		4	5	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
		4	5	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such as vegetative ground cover.

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Project Name: Mission Bell Mixed-Use Project
Weekday AM Peak Hour Volumes

Intersection: 4
Fair Oaks Avenue & El Centro Street

Fair Oaks Avenue

Southbound

	right	through	left
Existing	17	903	12
Existing+Proj	17	905	12
Future	18	930	12
Future+Proj	18	932	12

El Centro Street

Eastbound

	left	through	right
Existing	13	36	44
Existing+Proj	13	36	49
Future	13	47	45
Future+Proj	13	47	50

N
W E
S

Westbound

	right	through	left
Existing	11	52	10
Existing+Proj	11	52	10
Future	11	64	10
Future+Proj	11	64	10

Northbound

	left	through	right
Existing	51	945	16
Existing+Proj	56	947	16
Future	53	975	16
Future+Proj	58	977	16

ADT

Road	Fair Oaks Avenue		El Centro Street	
Leg	North of	South of	East of	West of
Cross Street	El Centro Street		Fair Oaks Avenue	
Existing	15,208.0	15,752.0	1,096.0	1,704.0
Existing+Proj	15,240.0	15,864.0	1,096.0	1,784.0
Future	15,672.0	16,232.0	1,280.0	1,920.0
Future+Proj	15,704.0	16,344.0	1,280.0	2,000.0
	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0

2

NOISE LEVEL CONTOURS - Existing Plus Project Weekday Off-Site ADT Volumes

ROADWAY NAME Segment	Land Use	Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center to Receptor	Alpha Factor (1)	Barrier Attn. dB(A)	Vehicle Mix Medium Trucks	Heavy Trucks	dB(A) CNEL	Traffic Volumes Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	Ref. Energy Levels A	MT	HT	Dist Adj	Ld A	MT	HT	Total	Le A	MT	HT	Total	Ln A	MT	HT	Total
Fair Oaks Avenue n/o El																																				
Existing		4	15	15,208	45	75	0	0	1.8%	0.7%	66.1	####	####	####	239	95	14	3	21	9	69.3	77.6	82.1	-1.6	65.7	57.2	57.7	66.9	62.8	49.6	47.5	63.1	49.6	47.8	48.5	53.4
Existing+Proj		4	15	15,240	45	75	0	0	1.8%	0.7%	66.1	####	####	####	240	95	14	3	21	9	69.3	77.6	82.1	-1.6	65.8	57.2	57.7	66.9	62.8	49.6	47.6	63.1	49.6	47.8	48.5	53.4
Future		4	15	15,672	45	75	0	0	1.8%	0.7%	66.2	####	####	####	247	98	14	3	21	9	69.3	77.6	82.1	-1.6	65.9	57.3	57.8	67.0	62.9	49.8	47.7	63.2	49.7	47.9	48.6	53.6
Future+Proj		4	15	15,704	45	75	0	0	1.8%	0.7%	66.2	####	####	####	247	98	14	3	21	9	69.3	77.6	82.1	-1.6	65.9	57.4	57.9	67.0	62.9	49.8	47.7	63.2	49.7	47.9	48.6	53.6
		4	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.6	####	####	####	####	####	####	####	####	####	####	####	####
		4	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.6	####	####	####	####	####	####	####	####	####	####	####	####
		4	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.6	####	####	####	####	####	####	####	####	####	####	####	####
Fair Oaks Avenue s/o El																																				
Existing		4	15	15,752	45	75	0	0	1.8%	0.7%	66.2	####	####	####	248	98	14	3	21	9	69.3	77.6	82.1	-1.6	65.9	57.4	57.9	67.0	62.9	49.8	47.7	63.2	49.7	47.9	48.6	53.6
Existing+Proj		4	15	15,864	45	75	0	0	1.8%	0.7%	66.3	####	####	####	250	99	14	3	21	9	69.3	77.6	82.1	-1.6	65.9	57.4	57.9	67.1	62.9	49.8	47.7	63.3	49.8	47.9	48.7	53.6
Future		4	15	16,232	45	75	0	0	1.8%	0.7%	66.4	####	####	####	255	101	15	3	22	9	69.3	77.6	82.1	-1.6	66.0	57.5	58.0	67.2	63.0	49.9	47.8	63.4	49.9	48.0	48.8	53.7
Future+Proj		4	15	16,344	45	75	0	0	1.8%	0.7%	66.4	####	####	####	257	102	15	3	22	9	69.3	77.6	82.1	-1.6	66.1	57.5	58.0	67.2	63.1	49.9	47.9	63.4	49.9	48.1	48.8	53.8
		4	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.6	####	####	####	####	####	####	####	####	####	####	####	####
		4	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.6	####	####	####	####	####	####	####	####	####	####	####	####
		4	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.6	####	####	####	####	####	####	####	####	####	####	####	####
El Centro Street e/o Fair																																				
Existing		4	15	1,096	45	75	0	0	1.8%	0.7%	54.7	852	139	105	17	7	1	0	1	1	69.3	77.6	82.1	-1.6	54.3	45.8	46.3	55.5	51.3	38.2	36.1	51.7	38.1	36.3	37.1	42.0
Existing+Proj		4	15	1,096	45	75	0	0	1.8%	0.7%	54.7	852	139	105	17	7	1	0	1	1	69.3	77.6	82.1	-1.6	54.3	45.8	46.3	55.5	51.3	38.2	36.1	51.7	38.1	36.3	37.1	42.0
Future		4	15	1,280	45	75	0	0	1.8%	0.7%	55.3	995	163	123	20	8	1	0	2	1	69.3	77.6	82.1	-1.6	55.0	46.5	47.0	56.1	52.0	38.9	36.8	52.3	38.8	37.0	37.7	42.7
Future+Proj		4	15	1,280	45	75	0	0	1.8%	0.7%	55.3	995	163	123	20	8	1	0	2	1	69.3	77.6	82.1	-1.6	55.0	46.5	47.0	56.1	52.0	38.9	36.8	52.3	38.8	37.0	37.7	42.7
		4	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.6	####	####	####	####	####	####	####	####	####	####	####	####
		4	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.6	####	####	####	####	####	####	####	####	####	####	####	####
		4	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.6	####	####	####	####	####	####	####	####	####	####	####	####
El Centro Street w/o Fair																																				
Existing 2017		3	15	1,704	45	75	0	0	1.8%	0.7%	56.5	####	216	164	27	11	2	0	2	1	69.3	77.6	82.1	-1.7	56.1	47.6	48.1	57.3	53.1	40.0	37.9	53.5	39.9	38.1	38.9	43.8
Existing+Proj		3	15	1,784	45	75	0	0	1.8%	0.7%	56.7	####	227	171	28	11	2	0	2	1	69.3	77.6	82.1	-1.7	56.3	47.8	48.3	57.5	53.3	40.2	38.1	53.7	40.1	38.3	39.1	44.0
Future 2023		3	15	1,920	45	75	0	0	1.8%	0.7%	57.0	####	244	184	30	12	2	0	3	1	69.3	77.6	82.1	-1.7	56.6	48.1	48.6	57.8	53.7	40.5	38.4	54.0	40.5	38.7	39.4	44.3
Future+Proj		3	15	2,000	45	75	0	0	1.8%	0.7%	57.2	####	254	192	31	12	2	0	3	1	69.3	77.6	82.1	-1.7	56.8	48.3	48.8	58.0	53.8	40.7	38.6	54.2	40.6	38.8	39.6	44.5
		3	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
		3	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
		3	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such as vegetative ground cover.

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Project Name: Mission Bell Mixed-Use Project

Weekday AM Peak Hour Volumes

Intersection: 1

Meridian Avenue & Mission Street

Meridian Avenue

Southbound

	right	through	left
Existing	10	107	30
Existing+Proj	10	107	31
Future	10	110	31
Future+Proj	10	110	32

Northbound

	left	through	right
Existing	37	82	16
Existing+Proj	38	82	16
Future	38	84	16
Future+Proj	39	84	16

Mission Street

Eastbound

	left	through	right
Existing	1	433	50
Existing+Proj	1	443	52
Future	1	458	52
Future+Proj	1	468	54

Westbound

	right	through	left
Existing	28	309	5
Existing+Proj	28	316	5
Future	29	328	5
Future+Proj	29	335	5

N

W E

S

ADT

Road	Meridian Avenue		Mission Street	
Leg	North of	South of	East of	West of
Cross Street	Mission Street		Meridian Avenue	
Existing	2,064.0	2,376.0	6,568.0	6,720.0
Existing+Proj	2,072.0	2,400.0	6,712.0	6,880.0
Future	2,120.0	2,440.0	6,936.0	7,096.0
Future+Proj	2,128.0	2,464.0	7,080.0	7,256.0
	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0

2

NOISE LEVEL CONTOURS - Existing Plus Project Weekday Off-Site ADT Volumes

ROADWAY NAME Segment	Land Use	Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center tc Receptor	Alpha Factor (1	Barrier Attn. dB(A)	Vehicle Mix Medium Trucks	Vehicle Mix Heavy Trucks	dB(A) CNEL	Traffic Volumes Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	Ref. Energy Levels A	MT	HT	Dist Adj	Ld A	MT	HT	Total	Le A	MT	HT	Total	Ln A	MT	HT	Total
Meridian Avenue n/o Mission																																				
Existing		1	15	2,064	40	75	0	0	1.8%	0.7%	56.0	1,604	262	198	32	13	2	0	3	1	67.4	76.3	81.2	-1.8	55.4	47.5	48.3	56.7	52.4	39.9	38.2	52.8	39.2	38.0	39.1	43.6
Existing+Proj		1	15	2,072	40	75	0	0	1.8%	0.7%	56.0	1,610	263	199	33	13	2	0	3	1	67.4	76.3	81.2	-1.8	55.4	47.5	48.3	56.7	52.4	39.9	38.2	52.8	39.2	38.1	39.1	43.6
Future		1	15	2,120	40	75	0	0	1.8%	0.7%	56.1	1,647	269	204	33	13	2	0	3	1	67.4	76.3	81.2	-1.8	55.5	47.6	48.4	56.8	52.5	40.0	38.3	52.9	39.3	38.2	39.2	43.7
Future+Proj		1	15	2,128	40	75	0	0	1.8%	0.7%	56.1	1,653	270	204	33	13	2	0	3	1	67.4	76.3	81.2	-1.8	55.5	47.6	48.5	56.8	52.5	40.0	38.3	52.9	39.3	38.2	39.2	43.7
		1	15	0	40	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	67.4	76.3	81.2	-1.8	####	####	####	####	####	####	####	####	####	####	####	####
		1	15	0	40	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	67.4	76.3	81.2	-1.8	####	####	####	####	####	####	####	####	####	####	####	####
		1	15	0	40	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	67.4	76.3	81.2	-1.8	####	####	####	####	####	####	####	####	####	####	####	####
Meridian Avenue s/o Mission																																				
Existing		1	15	2,376	40	75	0	0	1.8%	0.7%	56.6	1,846	302	228	37	15	2	0	3	1	67.4	76.3	81.2	-1.8	56.0	48.1	48.9	57.3	53.0	40.5	38.8	53.4	39.8	38.7	39.7	44.2
Existing+Proj		1	15	2,400	40	75	0	0	1.8%	0.7%	56.6	1,865	305	230	38	15	2	0	3	1	67.4	76.3	81.2	-1.8	56.0	48.2	49.0	57.3	53.0	40.6	38.8	53.4	39.8	38.7	39.7	44.2
Future		1	15	2,440	40	75	0	0	1.8%	0.7%	56.7	1,896	310	234	38	15	2	0	3	1	67.4	76.3	81.2	-1.8	56.1	48.2	49.0	57.4	53.1	40.6	38.9	53.5	39.9	38.8	39.8	44.3
Future+Proj		1	15	2,464	40	75	0	0	1.8%	0.7%	56.7	1,915	313	237	39	15	2	0	3	1	67.4	76.3	81.2	-1.8	56.1	48.3	49.1	57.5	53.1	40.7	38.9	53.5	39.9	38.8	39.9	44.3
		1	15	0	40	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	67.4	76.3	81.2	-1.8	####	####	####	####	####	####	####	####	####	####	####	####
		1	15	0	40	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	67.4	76.3	81.2	-1.8	####	####	####	####	####	####	####	####	####	####	####	####
		1	15	0	40	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	67.4	76.3	81.2	-1.8	####	####	####	####	####	####	####	####	####	####	####	####
Mission Street e/o Meridian																																				
Existing		3	15	6,568	40	75	0	0	1.8%	0.7%	61.1	5,103	834	631	103	41	6	1	9	4	67.4	76.3	81.2	-1.7	60.5	52.7	53.5	61.9	57.5	45.1	43.3	57.9	44.3	43.2	44.2	48.7
Existing+Proj		3	15	6,712	40	75	0	0	1.8%	0.7%	61.2	5,215	852	644	106	42	6	1	9	4	67.4	76.3	81.2	-1.7	60.6	52.7	53.6	61.9	57.6	45.2	43.4	58.0	44.4	43.3	44.3	48.8
Future		3	15	6,936	40	75	0	0	1.8%	0.7%	61.3	5,389	881	666	109	43	6	1	9	4	67.4	76.3	81.2	-1.7	60.7	52.9	53.7	62.1	57.8	45.3	43.6	58.2	44.6	43.4	44.5	49.0
Future+Proj		3	15	7,080	40	75	0	0	1.8%	0.7%	61.4	5,501	899	680	111	44	6	1	10	4	67.4	76.3	81.2	-1.7	60.8	53.0	53.8	62.2	57.9	45.4	43.6	58.2	44.7	43.5	44.6	49.1
		3	15	0	40	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	67.4	76.3	81.2	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
		3	15	0	40	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	67.4	76.3	81.2	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
		3	15	0	40	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	67.4	76.3	81.2	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
Mission Street w/o Meridian																																				
Existing		3	15	6,720	40	75	0	0	1.8%	0.7%	61.2	5,221	853	645	106	42	6	1	9	4	67.4	76.3	81.2	-1.7	60.6	52.8	53.6	62.0	57.6	45.2	43.4	58.0	44.4	43.3	44.3	48.8
Existing+Proj		3	15	6,880	40	75	0	0	1.8%	0.7%	61.3	5,346	874	660	108	43	6	1	9	4	67.4	76.3	81.2	-1.7	60.7	52.9	53.7	62.1	57.7	45.3	43.5	58.1	44.5	43.4	44.4	48.9
Future		3	15	7,096	40	75	0	0	1.8%	0.7%	61.4	5,514	901	681	112	44	6	1	10	4	67.4	76.3	81.2	-1.7	60.8	53.0	53.8	62.2	57.9	45.4	43.7	58.3	44.7	43.5	44.6	49.1
Future+Proj		3	15	7,256	40	75	0	0	1.8%	0.7%	61.5	5,638	922	697	114	45	7	1	10	4	67.4	76.3	81.2	-1.7	60.9	53.1	53.9	62.3	58.0	45.5	43.7	58.4	44.8	43.6	44.7	49.2
		3	15	0	40	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	67.4	76.3	81.2	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
		3	15	0	40	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	67.4	76.3	81.2	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
		3	15	0	40	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	67.4	76.3	81.2	-1.7	####	####	####	####	####	####	####	####	####	####	####	####

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such as vegetative ground cover.

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Project Name: Mission Bell Mixed-Use Project
Weekday AM Peak Hour Volumes

Intersection: 2
Freemont Avenue & Mission Street

Freemont Avenue

Southbound

	right	through	left
Existing	33	589	117
Existing+Proj	35	589	117
Future	34	615	124
Future+Proj	36	615	124

Mission Street

Eastbound

	left	through	right
Existing	53	305	111
Existing+Proj	54	312	111
Future	55	326	114
Future+Proj	56	333	114

N
W E
S

Westbound

	right	through	left
Existing	67	273	48
Existing+Proj	67	282	48
Future	72	291	50
Future+Proj	72	300	50

Northbound

	left	through	right
Existing	93	631	23
Existing+Proj	93	631	23
Future	96	657	26
Future+Proj	96	657	26

ADT

Road	Freemont Avenue		Mission Street	
Leg	North of	South of	East of	West of
Cross Street	Mission Street		Freemont Avenue	
Existing	11,920.0	11,960.0	6,664.0	6,944.0
Existing+Proj	11,944.0	11,960.0	6,792.0	7,096.0
Future	12,456.0	12,464.0	7,112.0	7,328.0
Future+Proj	12,480.0	12,464.0	7,240.0	7,480.0
	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0

2

NOISE LEVEL CONTOURS - Existing Plus Project Weekday Off-Site ADT Volumes

ROADWAY NAME Segment	Land Use	Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center tc Receptor	Alpha Factor (1	Barrier Attn. dB(A)	Vehicle Mix Medium Trucks	Vehicle Mix Heavy Trucks	dB(A) CNEL	Traffic Volumes Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	Ref. Energy Levels A	MT	HT	Dist Adj	Ld A	MT	HT	Total	Le A	MT	HT	Total	Ln A	MT	HT	Total
Freemont Avenue n/o																																				
Existing		3	15	11,920	45	75	0	0	1.8%	0.7%	64.9	####	####	####	188	74	11	2	16	7	69.3	77.6	82.1	-1.7	64.6	56.0	56.5	65.7	61.6	48.5	46.4	61.9	48.4	46.6	47.3	52.3
Existing+Proj		3	15	11,944	45	75	0	0	1.8%	0.7%	64.9	####	####	####	188	74	11	2	16	7	69.3	77.6	82.1	-1.7	64.6	56.0	56.5	65.7	61.6	48.5	46.4	61.9	48.4	46.6	47.3	52.3
Future		3	15	12,456	45	75	0	0	1.8%	0.7%	65.1	####	####	####	196	78	11	2	17	7	69.3	77.6	82.1	-1.7	64.8	56.2	56.7	65.9	61.8	48.6	46.6	62.1	48.6	46.8	47.5	52.5
Future+Proj		3	15	12,480	45	75	0	0	1.8%	0.7%	65.1	####	####	####	196	78	11	2	17	7	69.3	77.6	82.1	-1.7	64.8	56.2	56.7	65.9	61.8	48.7	46.6	62.1	48.6	46.8	47.5	52.5
		3	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
		3	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
		3	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
Freemont Avenue s/o Mission																																				
Existing		3	15	11,960	45	75	0	0	1.8%	0.7%	64.9	####	####	####	188	75	11	2	16	7	69.3	77.6	82.1	-1.7	64.6	56.1	56.6	65.7	61.6	48.5	46.4	61.9	48.4	46.6	47.3	52.3
Existing+Proj		3	15	11,960	45	75	0	0	1.8%	0.7%	64.9	####	####	####	188	75	11	2	16	7	69.3	77.6	82.1	-1.7	64.6	56.1	56.6	65.7	61.6	48.5	46.4	61.9	48.4	46.6	47.3	52.3
Future		3	15	12,464	45	75	0	0	1.8%	0.7%	65.1	####	####	####	196	78	11	2	17	7	69.3	77.6	82.1	-1.7	64.8	56.2	56.7	65.9	61.8	48.6	46.6	62.1	48.6	46.8	47.5	52.5
Future+Proj		3	15	12,464	45	75	0	0	1.8%	0.7%	65.1	####	####	####	196	78	11	2	17	7	69.3	77.6	82.1	-1.7	64.8	56.2	56.7	65.9	61.8	48.6	46.6	62.1	48.6	46.8	47.5	52.5
		3	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
		3	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
		3	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
Mission Street e/o Freemont																																				
Existing		3	15	6,664	45	75	0	0	1.8%	0.7%	62.4	####	846	640	105	42	6	1	9	4	69.3	77.6	82.1	-1.7	62.0	53.5	54.0	63.2	59.1	45.9	43.8	59.4	45.9	44.1	44.8	49.7
Existing+Proj		3	15	6,792	45	75	0	0	1.8%	0.7%	62.5	####	863	652	107	42	6	1	9	4	69.3	77.6	82.1	-1.7	62.1	53.6	54.1	63.3	59.2	46.0	43.9	59.5	46.0	44.1	44.9	49.8
Future		3	15	7,112	45	75	0	0	1.8%	0.7%	62.7	####	903	683	112	44	6	1	10	4	69.3	77.6	82.1	-1.7	62.3	53.8	54.3	63.5	59.4	46.2	44.1	59.7	46.2	44.3	45.1	50.0
Future+Proj		3	15	7,240	45	75	0	0	1.8%	0.7%	62.8	####	919	695	114	45	7	1	10	4	69.3	77.6	82.1	-1.7	62.4	53.9	54.4	63.5	59.4	46.3	44.2	59.8	46.2	44.4	45.1	50.1
		3	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
		3	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
		3	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
Mission Street w/o Freemont																																				
Existing		3	15	6,944	45	75	0	0	1.8%	0.7%	62.6	####	882	667	109	43	6	1	9	4	69.3	77.6	82.1	-1.7	62.2	53.7	54.2	63.4	59.2	46.1	44.0	59.6	46.1	44.2	45.0	49.9
Existing+Proj		3	15	7,096	45	75	0	0	1.8%	0.7%	62.7	####	901	681	112	44	6	1	10	4	69.3	77.6	82.1	-1.7	62.3	53.8	54.3	63.5	59.3	46.2	44.1	59.7	46.1	44.3	45.1	50.0
Future		3	15	7,328	45	75	0	0	1.8%	0.7%	62.8	####	931	703	115	46	7	1	10	4	69.3	77.6	82.1	-1.7	62.5	53.9	54.4	63.6	59.5	46.3	44.3	59.8	46.3	44.5	45.2	50.2
Future+Proj		3	15	7,480	45	75	0	0	1.8%	0.7%	62.9	####	950	718	118	47	7	1	10	4	69.3	77.6	82.1	-1.7	62.5	54.0	54.5	63.7	59.6	46.4	44.4	59.9	46.4	44.6	45.3	50.2
		3	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
		3	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
		3	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such as vegetative ground cover.

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Project Name: Mission Bell Mixed-Use Project
Weekday AM Peak Hour Volumes

Intersection: 3
Fair Oaks Avenue & Mission Street

Fair Oaks Avenue

Southbound

	right	through	left
Existing	69	1,183	127
Existing+Proj	77	1,183	127
Future	72	1,219	131
Future+Proj	80	1,219	131

Mission Street

Eastbound

	left	through	right
Existing	111	242	95
Existing+Proj	117	242	96
Future	115	263	99
Future+Proj	121	263	100

N
W E
S

Westbound

	right	through	left
Existing	113	203	46
Existing+Proj	113	203	46
Future	116	222	47
Future+Proj	116	222	47

Northbound

	left	through	right
Existing	85	807	42
Existing+Proj	87	807	42
Future	89	831	43
Future+Proj	91	831	43

ADT

Road	Fair Oaks Avenue		Mission Street	
Leg	North of	South of	East of	West of
Cross Street	Mission Street		Fair Oaks Avenue	
Existing	19,280.0	18,064.0	6,184.0	6,440.0
Existing+Proj	19,392.0	18,088.0	6,184.0	6,576.0
Future	19,872.0	18,624.0	6,576.0	6,880.0
Future+Proj	19,984.0	18,648.0	6,576.0	7,016.0
	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0

2

NOISE LEVEL CONTOURS - Existing Plus Project Weekday Off-Site ADT Volumes

ROADWAY NAME Segment	Land Use	Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center to Receptor	Alpha Factor (1)	Barrier Attn. dB(A)	Vehicle Mix Medium Trucks	Vehicle Mix Heavy Trucks	dB(A) CNEL
Fair Oaks Avenue n/o											
Existing		4	0	19,280	45	75	0	0	1.8%	0.7%	67.0
Existing+Proj		4	0	19,392	45	75	0	0	1.8%	0.7%	67.0
Future		4	0	19,872	45	75	0	0	1.8%	0.7%	67.1
Future+Proj		4	0	19,984	45	75	0	0	1.8%	0.7%	67.1
		4	0	0	45	75	0	0	1.8%	0.7%	#NUM!
		4	0	0	45	75	0	0	1.8%	0.7%	#NUM!
		4	0	0	45	75	0	0	1.8%	0.7%	#NUM!
Fair Oaks Avenue s/o Mission											
Existing		4	5	18,064	45	75	0	0	1.8%	0.7%	66.7
Existing+Proj		4	5	18,088	45	75	0	0	1.8%	0.7%	66.8
Future		4	5	18,624	45	75	0	0	1.8%	0.7%	66.9
Future+Proj		4	5	18,648	45	75	0	0	1.8%	0.7%	66.9
		4	5	0	45	75	0	0	1.8%	0.7%	#NUM!
		4	5	0	45	75	0	0	1.8%	0.7%	#NUM!
		4	5	0	45	75	0	0	1.8%	0.7%	#NUM!
Mission Street e/o Fair Oaks											
Existing		4	5	6,184	45	75	0	0	1.8%	0.7%	62.1
Existing+Proj		4	5	6,184	45	75	0	0	1.8%	0.7%	62.1
Future		4	5	6,576	45	75	0	0	1.8%	0.7%	62.4
Future+Proj		4	5	6,576	45	75	0	0	1.8%	0.7%	62.4
		4	5	0	45	75	0	0	1.8%	0.7%	#NUM!
		4	5	0	45	75	0	0	1.8%	0.7%	#NUM!
		4	5	0	45	75	0	0	1.8%	0.7%	#NUM!
Mission Street w/o Fair Oaks											
Existing 2017		4	5	6,440	45	75	0	0	1.8%	0.7%	62.3
Existing+Proj		4	5	6,576	45	75	0	0	1.8%	0.7%	62.4
Future 2023		4	5	6,880	45	75	0	0	1.8%	0.7%	62.6
Future+Proj		4	5	7,016	45	75	0	0	1.8%	0.7%	62.6
		4	5	0	45	75	0	0	1.8%	0.7%	#NUM!
		4	5	0	45	75	0	0	1.8%	0.7%	#NUM!
		4	5	0	45	75	0	0	1.8%	0.7%	#NUM!

Segment	Traffic Volumes Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	Ref. Energy Levels A	MT	HT	Dist Adj	Ld A	MT	HT	Total	Le A	MT	HT	Total	Ln A	MT	HT	Total
Fair Oaks Avenue n/o																									
Existing	####	####	####	303	120	18	4	26	11	69.3	77.6	82.1	-1.7	66.6	58.1	58.6	67.8	63.7	50.5	48.4	64.0	50.5	48.7	49.4	54.3
Existing+Proj	####	####	####	305	121	18	4	26	11	69.3	77.6	82.1	-1.7	66.7	58.1	58.6	67.8	63.7	50.5	48.5	64.0	50.5	48.7	49.4	54.4
Future	####	####	####	313	124	18	4	27	11	69.3	77.6	82.1	-1.7	66.8	58.2	58.7	67.9	63.8	50.7	48.6	64.1	50.6	48.8	49.5	54.5
Future+Proj	####	####	####	314	125	18	4	27	11	69.3	77.6	82.1	-1.7	66.8	58.3	58.8	67.9	63.8	50.7	48.6	64.1	50.6	48.8	49.5	54.5
	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
Fair Oaks Avenue s/o Mission																									
Existing	####	####	####	284	113	16	4	24	10	69.3	77.6	82.1	-1.7	66.4	57.9	58.4	67.5	63.4	50.3	48.2	63.7	50.2	48.4	49.1	54.1
Existing+Proj	####	####	####	285	113	16	4	24	10	69.3	77.6	82.1	-1.7	66.4	57.9	58.4	67.5	63.4	50.3	48.2	63.7	50.2	48.4	49.1	54.1
Future	####	####	####	293	116	17	4	25	11	69.3	77.6	82.1	-1.7	66.5	58.0	58.5	67.7	63.5	50.4	48.3	63.9	50.4	48.5	49.3	54.2
Future+Proj	####	####	####	293	116	17	4	25	11	69.3	77.6	82.1	-1.7	66.5	58.0	58.5	67.7	63.6	50.4	48.3	63.9	50.4	48.5	49.3	54.2
	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
Mission Street e/o Fair Oaks																									
Existing	####	785	594	97	39	6	1	8	3	69.3	77.6	82.1	-1.7	61.7	53.2	53.7	62.9	58.8	45.6	43.5	59.1	45.6	43.8	44.5	49.4
Existing+Proj	####	785	594	97	39	6	1	8	3	69.3	77.6	82.1	-1.7	61.7	53.2	53.7	62.9	58.8	45.6	43.5	59.1	45.6	43.8	44.5	49.4
Future	####	835	631	103	41	6	1	9	4	69.3	77.6	82.1	-1.7	62.0	53.5	54.0	63.1	59.0	45.9	43.8	59.4	45.8	44.0	44.7	49.7
Future+Proj	####	835	631	103	41	6	1	9	4	69.3	77.6	82.1	-1.7	62.0	53.5	54.0	63.1	59.0	45.9	43.8	59.4	45.8	44.0	44.7	49.7
	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
Mission Street w/o Fair Oaks																									
Existing 2017	####	818	618	101	40	6	1	9	4	69.3	77.6	82.1	-1.7	61.9	53.4	53.9	63.0	58.9	45.8	43.7	59.3	45.7	43.9	44.6	49.6
Existing+Proj	####	835	631	103	41	6	1	9	4	69.3	77.6	82.1	-1.7	62.0	53.5	54.0	63.1	59.0	45.9	43.8	59.4	45.8	44.0	44.7	49.7
Future 2023	####	874	660	108	43	6	1	9	4	69.3	77.6	82.1	-1.7	62.2	53.7	54.2	63.3	59.2	46.1	44.0	59.6	46.0	44.2	44.9	49.9
Future+Proj	####	891	674	110	44	6	1	9	4	69.3	77.6	82.1	-1.7	62.3	53.8	54.3	63.4	59.3	46.2	44.1	59.6	46.1	44.3	45.0	50.0
	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such as vegetative ground cover.

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Project Name: Mission Bell Mixed-Use Project
Weekday AM Peak Hour Volumes

Intersection: 4
Fair Oaks Avenue & El Centro Street

Fair Oaks Avenue

Southbound

	right	through	left
Existing	41	1,196	40
Existing+Proj	41	1,197	40
Future	42	1,233	41
Future+Proj	42	1,234	41

El Centro Street

Eastbound

	left	through	right
Existing	44	88	72
Existing+Proj	44	88	75
Future	45	109	74
Future+Proj	45	109	77

N
W E
S

Westbound

	right	through	left
Existing	18	38	23
Existing+Proj	18	38	23
Future	19	56	24
Future+Proj	19	56	24

Northbound

	left	through	right
Existing	62	902	45
Existing+Proj	67	904	45
Future	64	930	46
Future+Proj	69	932	46

ADT

Road	Fair Oaks Avenue		El Centro Street	
Leg	North of	South of	East of	West of
Cross Street	El Centro Street		Fair Oaks Avenue	
Existing	17,928.0	18,400.0	2,016.0	2,760.0
Existing+Proj	17,952.0	18,488.0	2,016.0	2,824.0
Future	18,480.0	18,968.0	2,360.0	3,120.0
Future+Proj	18,504.0	19,056.0	2,360.0	3,184.0
	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0

2

NOISE LEVEL CONTOURS - Existing Plus Project Weekday Off-Site ADT Volumes

ROADWAY NAME Segment	Land Use	Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center tc Receptor	Alpha Factor (1	Barrier Attn. dB(A)	Vehicle Mix Medium Trucks	Vehicle Mix Heavy Trucks	dB(A) CNEL	Traffic Volumes Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	Ref. Energy Levels A	MT	HT	Dist Adj	Ld A	MT	HT	Total	Le A	MT	HT	Total	Ln A	MT	HT	Total
Fair Oaks Avenue n/o El																																				
Existing		4	15	17,928	45	75	0	0	1.8%	0.7%	66.8	####	####	####	282	112	16	4	24	10	69.3	77.6	82.1	-1.6	66.5	57.9	58.4	67.6	63.5	50.3	48.3	63.8	50.3	48.5	49.2	54.2
Existing+Proj		4	15	17,952	45	75	0	0	1.8%	0.7%	66.8	####	####	####	283	112	16	4	24	10	69.3	77.6	82.1	-1.6	66.5	57.9	58.4	67.6	63.5	50.3	48.3	63.8	50.3	48.5	49.2	54.2
Future		4	15	18,480	45	75	0	0	1.8%	0.7%	66.9	####	####	####	291	115	17	4	25	10	69.3	77.6	82.1	-1.6	66.6	58.1	58.6	67.7	63.6	50.5	48.4	63.9	50.4	48.6	49.3	54.3
Future+Proj		4	15	18,504	45	75	0	0	1.8%	0.7%	66.9	####	####	####	291	115	17	4	25	10	69.3	77.6	82.1	-1.6	66.6	58.1	58.6	67.7	63.6	50.5	48.4	63.9	50.4	48.6	49.3	54.3
		4	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.6	####	####	####	####	####	####	####	####	####	####	####	####
		4	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.6	####	####	####	####	####	####	####	####	####	####	####	####
		4	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.6	####	####	####	####	####	####	####	####	####	####	####	####
Fair Oaks Avenue s/o El																																				
Existing		4	15	18,400	45	75	0	0	1.8%	0.7%	66.9	####	####	####	290	115	17	4	25	10	69.3	77.6	82.1	-1.6	66.6	58.0	58.5	67.7	63.6	50.5	48.4	63.9	50.4	48.6	49.3	54.3
Existing+Proj		4	15	18,488	45	75	0	0	1.8%	0.7%	66.9	####	####	####	291	115	17	4	25	10	69.3	77.6	82.1	-1.6	66.6	58.1	58.6	67.7	63.6	50.5	48.4	63.9	50.4	48.6	49.3	54.3
Future		4	15	18,968	45	75	0	0	1.8%	0.7%	67.1	####	####	####	299	118	17	4	26	11	69.3	77.6	82.1	-1.6	66.7	58.2	58.7	67.8	63.7	50.6	48.5	64.1	50.5	48.7	49.4	54.4
Future+Proj		4	15	19,056	45	75	0	0	1.8%	0.7%	67.1	####	####	####	300	119	17	4	26	11	69.3	77.6	82.1	-1.6	66.7	58.2	58.7	67.9	63.7	50.6	48.5	64.1	50.6	48.7	49.5	54.4
		4	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.6	####	####	####	####	####	####	####	####	####	####	####	####
		4	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.6	####	####	####	####	####	####	####	####	####	####	####	####
		4	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.6	####	####	####	####	####	####	####	####	####	####	####	####
El Centro Street e/o Fair																																				
Existing		4	15	2,016	45	75	0	0	1.8%	0.7%	57.3	####	256	194	32	13	2	0	3	1	69.3	77.6	82.1	-1.6	57.0	48.4	48.9	58.1	54.0	40.9	38.8	54.3	40.8	39.0	39.7	44.7
Existing+Proj		4	15	2,016	45	75	0	0	1.8%	0.7%	57.3	####	256	194	32	13	2	0	3	1	69.3	77.6	82.1	-1.6	57.0	48.4	48.9	58.1	54.0	40.9	38.8	54.3	40.8	39.0	39.7	44.7
Future		4	15	2,360	45	75	0	0	1.8%	0.7%	58.0	####	300	227	37	15	2	0	3	1	69.3	77.6	82.1	-1.6	57.7	49.1	49.6	58.8	54.7	41.5	39.5	55.0	41.5	39.7	40.4	45.3
Future+Proj		4	15	2,360	45	75	0	0	1.8%	0.7%	58.0	####	300	227	37	15	2	0	3	1	69.3	77.6	82.1	-1.6	57.7	49.1	49.6	58.8	54.7	41.5	39.5	55.0	41.5	39.7	40.4	45.3
		4	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.6	####	####	####	####	####	####	####	####	####	####	####	####
		4	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.6	####	####	####	####	####	####	####	####	####	####	####	####
		4	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.6	####	####	####	####	####	####	####	####	####	####	####	####
El Centro Street w/o Fair																																				
Existing 2017		3	15	2,760	45	75	0	0	1.8%	0.7%	58.6	####	351	265	43	17	3	1	4	2	69.3	77.6	82.1	-1.7	58.2	49.7	50.2	59.3	55.2	42.1	40.0	55.6	42.0	40.2	41.0	45.9
Existing+Proj		3	15	2,824	45	75	0	0	1.8%	0.7%	58.7	####	359	271	44	18	3	1	4	2	69.3	77.6	82.1	-1.7	58.3	49.8	50.3	59.4	55.3	42.2	40.1	55.7	42.1	40.3	41.1	46.0
Future 2023		3	15	3,120	45	75	0	0	1.8%	0.7%	59.1	####	396	300	49	19	3	1	4	2	69.3	77.6	82.1	-1.7	58.8	50.2	50.7	59.9	55.8	42.6	40.6	56.1	42.6	40.8	41.5	46.4
Future+Proj		3	15	3,184	45	75	0	0	1.8%	0.7%	59.2	####	404	306	50	20	3	1	4	2	69.3	77.6	82.1	-1.7	58.8	50.3	50.8	60.0	55.9	42.7	40.6	56.2	42.7	40.9	41.6	46.5
		3	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
		3	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####
		3	15	0	45	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	69.3	77.6	82.1	-1.7	####	####	####	####	####	####	####	####	####	####	####	####

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such as vegetative ground cover.

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%