APPENDIX T

Environmental Noise Assessment,
Mariposa Lakes EIR Technical Noise Analysis

Environmental Noise Assessment

Mariposa Lakes EIR

Stockton, California

Project # 2005-075

Prepared For:

InSite Environmental

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NOISE

INTRODUCTION

This report has been prepared to address the noise impacts due to and upon the proposed Mariposa Lakes development located southeast of the City of Stockton in San Joaquin County. The proposed project is located generally within the area north of East Mariposa Road, south of Farmington Road and west of Kaiser Road. The proposed project covers an area of approximately 3,810 acres.

Mariposa Lakes will be a new residential and mixed-use village community for approximately 32,000 people. The future planned community will provide a broad range of housing types and business developments that will enhance the immediate area as well as the city of Stockton as a whole. The proposed project consists of approximately 4,520 Low Density Residential dwelling units, 3,805 Medium Density Residential dwelling units and 1,876 High Density Residential dwelling units for a total of approximately 10,201 dwelling units. In addition, the non-residential developments will include approximately 1.2 million square feet of commercial development, 19.2 million square feet of industrial development, six elementary schools, a high school and a campus of Sam Joaquin Delta College. The estimated total employment is approximately 36,000 jobs.

This section discusses the existing noise environment in the immediate project vicinity, and identifies potential impacts and mitigation measures related to the project.

ENVIRONMENTAL SETTING

Acoustical Terminology

Noise is often described as unwanted sound. Sound is defined as any pressure variation in air that the human ear can detect. If the pressure variations occur frequently enough (at least 20 times per second), they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second, called Hertz (Hz).

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals) as a point of reference, defined as 0 dB. Other sound pressures are then compared to the reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by the A-weighting network. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives noise. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels. Table 1 provides the descriptions of the various acoustical terminologies.

Table 1
Acoustical Terminology

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of noise.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz.
L_{dn}	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
L_{eq}	Equivalent or energy-averaged sound level.
L_{max}	The highest root-mean-square (RMS) sound level measured over a given period of time.
Loudness	A subjective term for the sensation of the magnitude of sound.
Noise	Unwanted sound.
Threshold of Hearing	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.
Threshold of Pain	Approximately 120 dB above the threshold of hearing.

Community noise is commonly described in terms of the "ambient" noise level, which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (Leq), which corresponds to a steady-state A-weighted sound level containing the same total energy as a time-varying signal over a given time period (usually one hour). The Leq is the foundation of the composite noise descriptors such as Ldn and CNEL, and shows very good correlation with community response to noise.

The Day-Night Average Level (Ldn) is based upon the average noise level over a 24-hour day, with a +10 decibel weighting applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because Ldn represents a 24-hour average, it tends to disguise short-term variations in the noise environment.

Vibration Terminology

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

Major Noise Sources in the Project Vicinity

Transportation:

Motor vehicle traffic and railroad operations are the major contributors to the existing noise environment in the project vicinity. Vehicular noise within the project vicinity occurs primarily along SR 99, Farmington Road, and East Mariposa Road. Railroad noise from the Burlington Northern Santa Fe Railroad (BNSF) operations occur along the western boundary of the proposed project. The project site is located approximately ½ to 2 miles east of the SR 99 freeway and is not a substantial source of noise on the project site. The project site is located more than two miles northeast of the Stockton Metropolitan Airport and is not a substantial source of noise on the project site.

Non-Transportation:

There are a number of existing industrial uses located adjacent to the project site along Mariposa Road. However, during site observations, the industrial uses were not observed to be significant noise sources at the proposed noise-sensitive areas on the project site. Transient noise generation from agricultural equipment also occurs on the project site on a seasonal basis.

Major Vibration Sources in the Project Vicinity

The BNSF railroad is considered to be a source of ground borne vibrations in the immediate vicinity of the railroad tracks.

Noise-Sensitive Land Uses in the Project Vicinity

Noise sensitive land uses in the immediate project vicinity consist of single-family residential uses at the locations shown on the project site plan. Noise sensitive land uses in the project vicinity consist of residential uses fronting many of the project-area roadways, a school, and a church. Future noise sensitive uses associated with the project include residential uses, schools, and a church.

Existing Noise Environment in the Project Vicinity

Existing Traffic Noise Levels

To determine the existing traffic noise levels at the identified sensitive receivers within the project vicinity, the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA-RD-77-108) was used with the California Vehicle Noise Emission Levels. The FHWA Model is based upon the Calveno reference noise factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. Traffic volumes were obtained from TJKM Transportation Consultants (December 8, 2006). Truck usage and vehicle speeds on the project roadways were estimated from field observations and Caltrans data where available.

Table 2 shows the predicted existing traffic noise levels in terms of the Day/Night Average Level descriptor (Ldn) at a standard distance of 100 feet from the centerlines of the existing immediate project-area roadways for existing conditions, as well as distances to existing traffic noise contours. The extent of which existing land uses in the project vicinity are affected by existing traffic noise depends on their respective proximity to the roadways and their individual sensitivity to noise. Appendix A provides the complete inputs and results to the FHWA model.

Table 2
Existing Traffic Noise Levels and Distances to Contours

Roadway	Segment	Ldn @ 100 Feet	Distance to Contours (feet) *		
			70 dB Ldn	65 dB Ldn	60 dB Ldn
East Charter Way	East of Mariposa Rd.	62.4 dB	31	67	145
East Main St.	West of E. Charter	62.2 dB	30	65	141
East Main St.	E. Charter to E. South Walker Ln	59.8 dB	21	45	98
East Main St.	S. Walker to Gillis	59.6 dB	20	44	94
E. 8th St.	W. of East Mariposa Rd.	59.6 dB	20	44	94
Farmington Rd.	SR 99 NB to S. Walker	64.4 dB	43	92	197
Farmington Rd.	S. Walker to Gillis	61.6 dB	28	59	128
Farmington Rd.	Gillis to Kaiser Rd.	61.5 dB	27	58	125
Farmington Rd.	Kaiser Rd. to Jack Tone Rd.	61.2 dB	26	56	120
Carpenter Rd	West of E. Mariposa	49.0 dB	4	9	18
Carpenter Rd	East of E. Mariposa	52.0 dB	6	14	29
Arch Rd	SR99 to Newcastle Rd.	56.8 dB	13	28	61
Arch Rd	Newcastle Rd to Austin Rd	54.7 dB	10	20	44
E. Mariposa Rd	E Charter Way to E 8th St	63.4 dB	36	78	168
E. Mariposa Rd	E. 8th St to SR 99 SB Ramps	61.9 dB	29	62	133
E. Mariposa Rd	SR 99 SB Ramps to SR 99 NB Ramps	62.4 dB	31	67	145
E. Mariposa Rd	SR 99 NB off Ramp to Stagecoach Rd	62.2 dB	30	65	139
E. Mariposa Rd	Stagecoach Rd to Carpenter Rd	63.3 dB	36	77	167
E. Mariposa Rd	Carpenter Rd to Austin Rd	62.3 dB	31	66	143
E. Mariposa Rd	Austin Rd to Kaiser Rd	61.7 dB	28	60	130
S Walker Ln	Farmington Rd to E Charter Way	52.4 dB	7	14	31
Gillis Rd	Farmington Rd to E Charter Way	48.2 dB	4	8	16
Austin Rd	S. of Arch Rd.	54.6 dB	9	20	43
Kaiser Rd	Farmington Rd to E. Mariposa Rd	47.3 dB	3	7	14
Jack Tone Rd	N. of Farmington Rd	57.0 dB	14	29	63
Jack Tone Rd	S. of E Mariposa Rd	56.9 dB	13	29	62

Source: FHWA-RD-77-108 with inputs from TJKM Transportation Consultants, Caltrans and j.c. brennan & associates, Inc.
*Distances to traffic noise contours are measured in feet from the centerlines of the roadways.

Existing Railroad Noise Levels

Railroad activity within the project vicinity occurs along the Burlington Northern Santa Fe Railroad (BNSF) line located along the western boundary of the project area. j.c. brennan & associates, Inc. staff conducted continuous hourly noise measurements adjacent to the railroad tracks from February 8th to 13th, 2006. The sound level meter was programmed to collect single event noise level data due to train pass bys on the project site, as well as overall hourly noise level data. The noise level measurements were conducted at a distance 100 feet east of the centerline of the BNSF railroad tracks. Figure 1 shows the location of the noise measurement site (Site #5).

Instrumentation consisted of a LDL Model 820 precision integrating sound level meter. The system was calibrated before use with a LDL CAL200 acoustical calibrator to ensure accuracy of the measurements.

The purpose of the noise level measurements was to determine typical sound exposure levels (SEL) for railroad line operations on this main line, accounting for the effects of travel speed and other factors that affect noise generation. In addition, the noise measurement equipment was programmed to identify individual train operations, so that the typical number of train operations could be determined. Based upon noise measurement results, the mean sound exposure level associated with a freight train operation was 105 dB SEL at a distance of 100 feet from the railroad centerline. The results of the data collected indicate that an average of 30 freight train events occurred during each day of noise monitoring. Approximately 15 Amtrak trains were noted to operate each day; however, the SEL for an Amtrak was measured to be 10 dB less than the SEL for a freight train. Therefore, Amtrak trains do not have an affect on the overall day/night (Ldn) sound level.

To determine the distances to the railroad noise contours, it is first necessary to calculate the day/night average (Ldn) at the noise measurement site. This was done using the collected SEL values, daily number of trains, and the distribution of daily freight train operations. The Ldn may be calculated as follows:

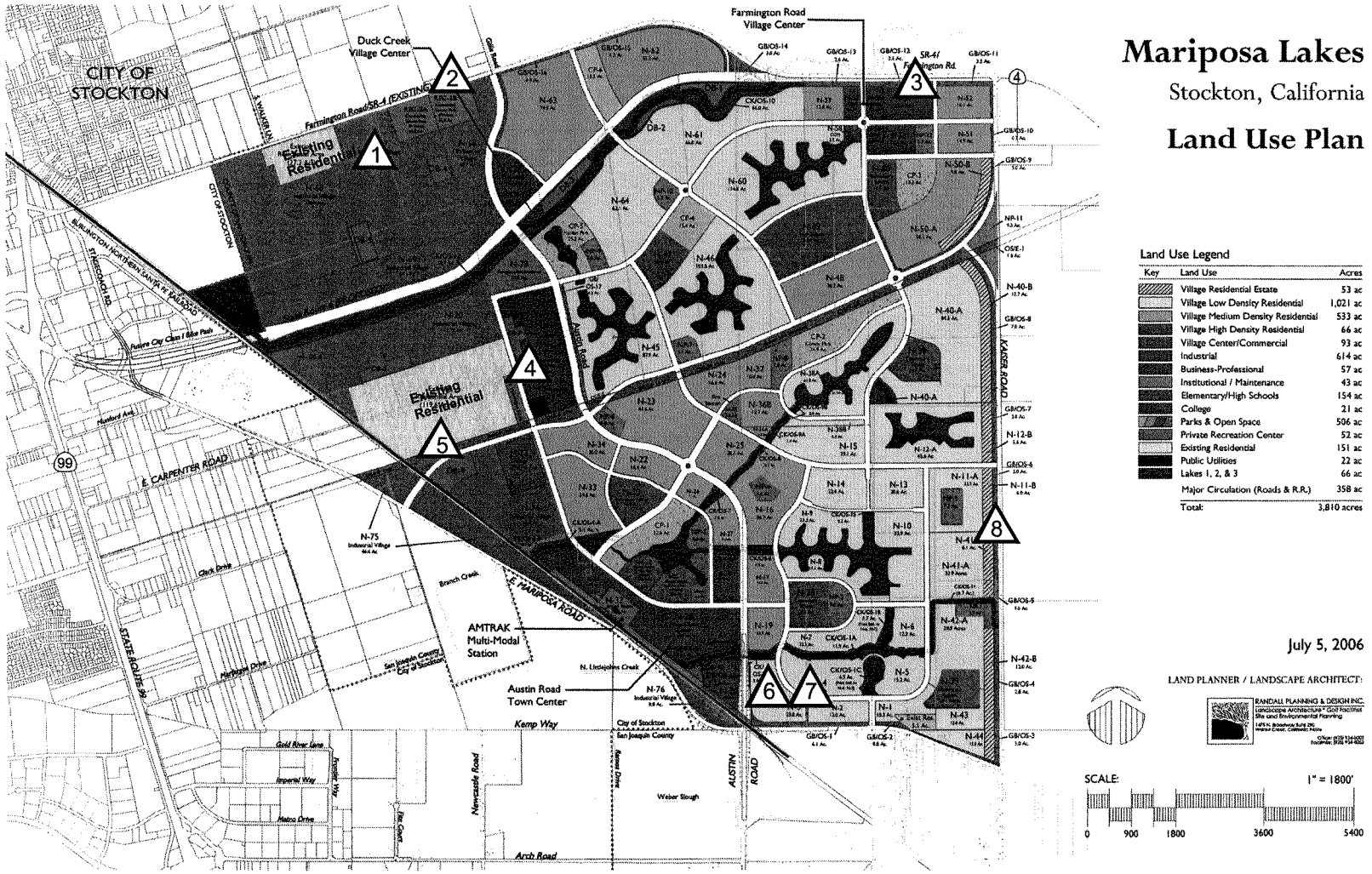
$$Ldn = SEL + 10 \log N_{eq} - 49.4 \text{ dB, where:}$$

SEL is the mean SEL of the event, N_{eq} is the sum of the number of daytime events (7 a.m. to 10 p.m.) per day plus ten times the number of nighttime events (10 p.m. to 7 a.m.) per day, and 49.4 is ten times the logarithm of the number of seconds per day. The predicted railroad noise levels and distances to noise contours are shown in Table 3.

Existing Railroad Vibration Levels

Based upon vibration measurements recently conducted by j.c. brennan & associates, Inc., a freight train passage is expected to result in vibration levels of approximately 0.06 to 0.1 in/sec peak particle velocity (p.p.v.) at a distance of 50 feet from the railroad centerline. This distance corresponds to the approximate location of the railroad right-of-way line. Actual vibration levels at the project site would be less due to the increased distance from the railroad right of way. A separate discussion of the impact of railroad vibrations is included later in this analysis.

Figure 1
Mariposa Lakes EIR - City of Stockton, California
Site Plan and Noise Measurement Locations



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: Noise Measurement Site

Table 3
Predicted BNSF Railroad Noise Contours

Ldn at 100 feet	*Distance to Railroad Noise Contours, Ldn		
	60 dB	65 dB	70 dB
77 dB	1316 feet	611 feet	284 feet

Source: j.c. brennan & associates, Inc.

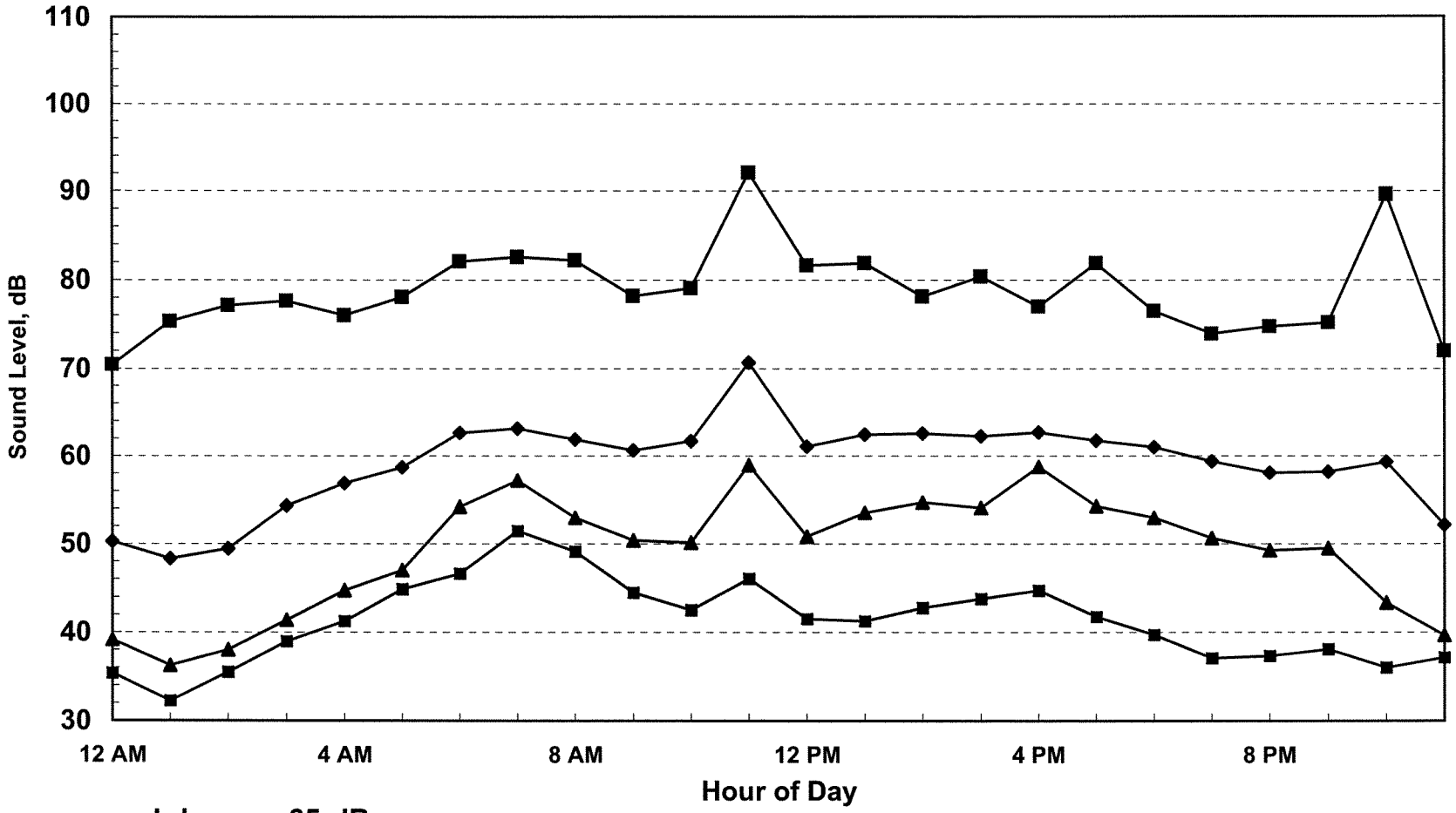
*Distances to noise contours are measured in feet from the centerline of the railroad tracks.

Existing Ambient Noise Levels:

To quantify existing ambient noise levels in the vicinity of the project site, j.c. brennan & associates, Inc. staff conducted short-term and continuous noise level measurements at various locations on the project site. See Figure 1 for noise measurement locations. The noise level measurements were conducted between February 8th and 13th, 2006. The noise level measurements were conducted to determine typical background noise levels and for comparison to the project related noise levels. Table 4 shows a summary of the noise measurement results. Figure 2 graphically shows the results of the continuous hourly noise level measurements.

Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meters were used for the noise level measurement survey. The meters were calibrated before and after use with an LDL Model CAL200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

Figure 2A
Continous Measured Hourly Noise Levels - Site #2
Mariposal Lakes EIR
February 10, 2006



Ldn = 65 dB

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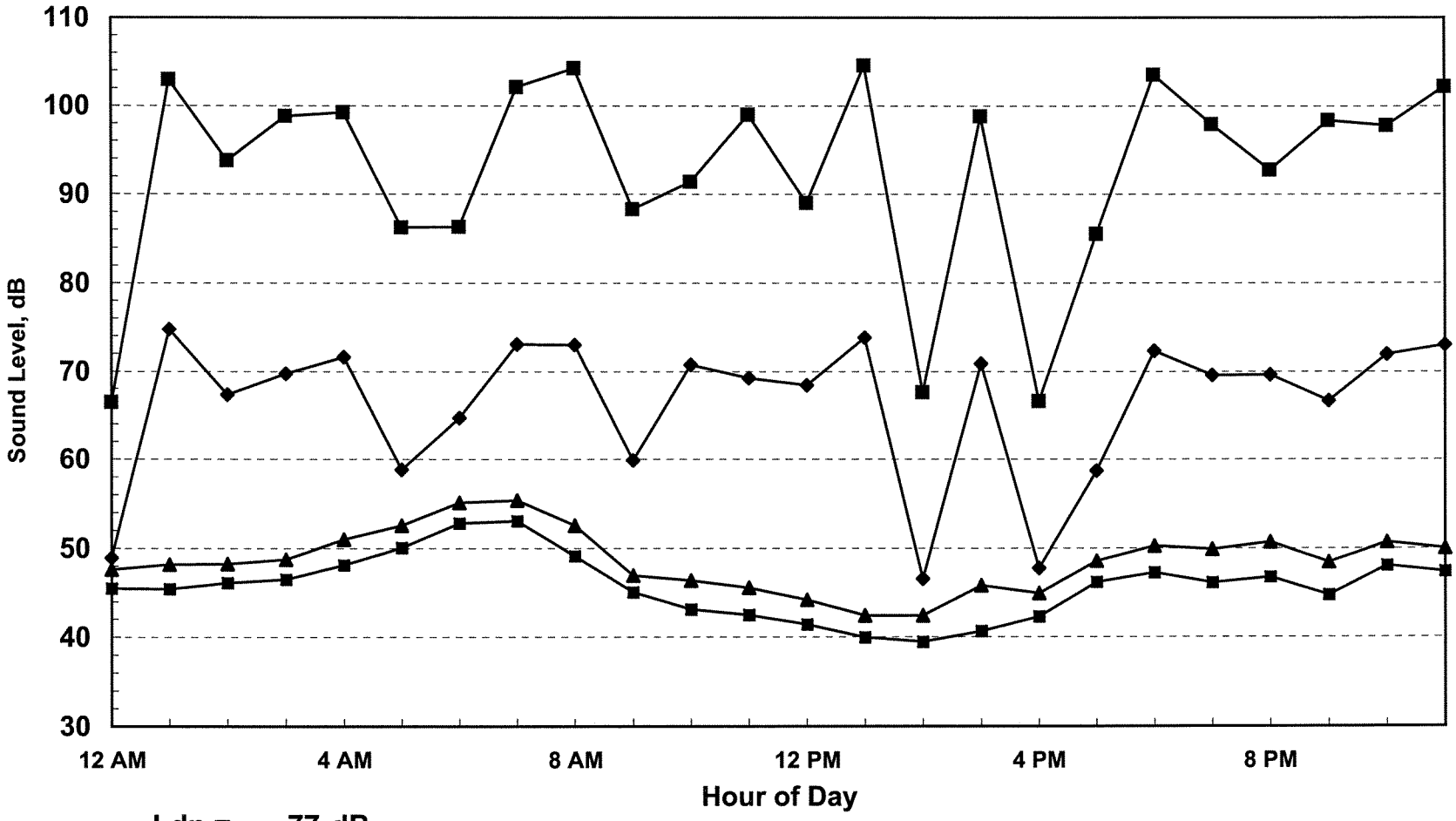
Figure 2B
Continous Measured Hourly Noise Levels - Site #5
Mariposal Lakes EIR
February 10, 2006



Ldn = 77 dB

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Table 4
Existing Ambient Noise Monitoring Results

Site	Location	Date - Time	Average Measured Hourly Noise Levels, dBA							
			24-hour Ldn	Daytime (7:00 am - 10:00 pm)			Nighttime (10:00 pm - 7 am)			
				Leq	L50	Lmax	Leq	L50	Lmax	
1	South of SR 4, southeast corner of existing residential.	2/13/06 – 3:20 pm	NA	46 dB	46 dB	50 dB	NA			
2	6645 E. SR 4, Residential front yard	2/8/06-2/13/06	65 dB	63 dB	53 dB	92 dB	57 dB	43 dB	90 dB	
3	100' south of SR 4 C.L., Area N-54	2/13/06 – 11:40 am	NA	60 dB	48 dB	78 dB	NA			
4	East end of Carpenter Rd	2/13/06 – 1:49 pm	NA	39 dB	39 dB	45 dB	NA			
5	Backyard of 5332 Carpenter Rd.	2/8/06-2/13/06	77 dB	70 dB	48 dB	105 dB	70 dB	50 dB	103 dB	
6	100' N of Mariposa Road C.L., Area N-3	2/13/06 – 1:10 pm	NA	53 dB	49 dB	65 dB	NA			
7	100' N of Mariposa Road C.L., Area N-2	2/13/06 – 12:45 pm	NA	65 dB	61 dB	77 dB	NA			
8	75' west of Kaiser Road C.L., Area N-41	2/13/06 – 12:10 pm	NA	47 dB	41 dB	67 dB	NA			

Source - j.c. brennan & associates, Inc.

REGULATORY SETTING

City of Stockton General Plan Noise Element:

The City of Stockton General Plan Noise Element establishes goals, policies and criteria for determining land use compatibility with major noise sources within the community. The following provides the applicable goals, policies and criteria for evaluating the feasibility and potential noise impacts associated with the proposed Bear Creek East project.

Goal 1 – Protect the citizens of the Stockton Planning Area from the harmful and annoying effects of exposure to excessive noise.

Goal 2 – Protect the economic base of the Stockton Planning Area by preventing incompatible land uses from encroaching upon areas with existing noise-producing uses.

> *Policy 2 –The compatibility of proposed projects with existing and future noise levels due to traffic on public roadways, railroad line operations and aircraft shall be evaluated by comparison to Figure 1.*
>
> *Policy 3A – For noise due to traffic on public roadways, railroad line operations and aircraft in flight: 60 dB Ldn/CNEL or less in outdoor activity areas, and 45 dB Ldn/CNEL or less in indoor areas. Where it is not possible to reduce exterior noise to 60 dB Ldn/CNEL of less by incorporating a practical application of the best available noise-reduction technology, an exterior noise level up to 65 dB Ldn/CNEL will be allowed. Under no circumstances will interior noise levels be permitted to exceed 45 dB Ldn/CNEL with the windows and doors closed.*
>
> *Policy 4 – Before approving proposed development of new residential land uses in areas exposed to existing or projected exterior noise levels exceeding 60 dB Ldn/CNEL, an acoustical analysis shall be required. The acoustical analysis shall be required in the environmental review process so that noise mitigation may be included in the project design.*

Table 5
Exterior Hourly Noise Level Standards for Stationary Noise Sources
City of Stockton General Plan

Noise Level Descriptor	Maximum Acceptable Noise Level	
	Daytime (7 am - 10 pm)	Nighttime (10 pm - 7 am)
Hourly Leq, dBA	55	45
Maximum Level (Lmax), dBA	75	65

** Each of the noise level standards specified above shall be reduced by five dBA for simple tone, noise consisting primarily of speech or music, or recurring impulsive noises.*
Source: City of Stockton General Plan Noise Element, Table 1

For transportation noise sources, such as roadway traffic or railroad line operations, the City of Stockton General Plan establishes a "Normally Acceptable" exterior noise level standard for residential uses of 60 dBA Ldn, which is applied in the outdoor activity areas. A "Conditionally Acceptable exterior noise level standard of 70 dBA Ldn is applied only after careful study and inclusion of protective measures as needed for intended use. However, based upon previous experience within the City of Stockton, 65 dB Ldn is generally considered to upper limit of allowable transportation-related noise at residential uses.

City of Stockton Municipal Code

The City of Stockton Municipal Code Chapter 16, Development Code contains noise standards for new developments. The Code has been adopted since the General Plan. Therefore, for the purposes of this report, they will be used for evaluating noise impacts. The noise standards contained within the Code generally replicate the noise criteria contained within the General Plan Noise Element. However, there is one exception, in that the Code establishes a 65 dB Ldn exterior noise level standard for residential uses.

There are also exemptions to the standards and activities which are considered to be violations that are outlined in the Code. The following provides a list of the pertinent Code exemptions and violations:

16-340.020 - Activities Exempt from Noise Regulations

16-340.020(C) – Outdoor play/school ground activities. *Activities conducted on parks and playgrounds and school grounds, between 7:00 a.m. and 10:00 p.m., except for additional hours that may be granted by the City Manager. Otherwise, outdoor activities shall meet standards in Table 3-7* (of the Code).

16-340.030 – Activities Deemed Violations of this Division

16-340.030(A) – Construction Noise. *Operations or causing the operation of tools or equipment on private property used in alteration, construction, demolition, drilling, or repair work between the hours of 10:00 p.m. and 7:00 a.m., so that the sound creates a noise disturbance across a residential property line, except for emergency work of public service utilities.*

16-340.030(B) – Loading and unloading operations. *Loading, unloading, opening, closing or other handling of boxes, crates, containers, building materials, garbage cans, or similar objects on private property between the hours of 10:00 p.m. and 7:00 a.m. in a manner to cause a noise disturbance.*

16-340.030(F) – Sweepers and associated equipment. *Operating or allowing the operation of sweepers or associated sweeping equipment (e.g., blowers) on private property between the hours of 10:00 p.m. and 7:00 a.m. the following day in, or adjacent to, a residential zoning district.*

16-340.040 – Standards

16-340.040(B)(2)(c) – Adjacent to other uses. *If commercial, industrial, or public facilities land uses are adjacent to any noise-sensitive land uses or vacant residential(RE,RL,RM, or RH) or open space (OS) zoning districts, these uses shall comply with the performance standards contained in Table 3-7, Part II.*

Proposed General Plan Update

It should be noted that the City of Stockton is currently in the process of developing and adopting a new general plan. The new general plan noise policies are similar to the existing policies with one notable exception. The new noise element policies would eliminate the existing performance standards, as contained in Table 5 of this document. The new policy applicable to stationary noise sources would require compliance with an exterior noise level of 65 Ldn/CNEL for noise generating uses adjacent to residential uses. This new standard would be less restrictive than the current standards because the Ldn/CENL level is calculated based upon a 24-hour average which tends to disguise short-term variations in the noise environment. Because the new general plan has not been adopted, this analysis will address the existing City of Stockton Noise Element policies.

Determination of a Significant Increase in Noise Levels

Another means of determining a potential noise impact is to assess a person's reaction to changes in noise levels due to a project. Table 6 is commonly used to show expected public reaction to changes in environmental noise levels. This table was developed on the basis of test subjects' reactions to changes in the levels of steady-state pure tones or broad-band noise and to changes in levels of a given noise source. It is probably most applicable to noise levels in the range of 50 to 70 dBA, as this is the usual range of voice and interior noise levels.

Table 6
Subjective Reaction to Changes in Noise Levels of Similar Sources

Change in Level, dBA	Subjective Reaction	Factor Change in Acoustical Energy
1	Imperceptible (Except for Tones)	1.3
3	Just Barely Perceptible	2.0
6	Clearly Noticeable	4.0
10	About Twice (or Half) as Loud	10.0

Source: Architectural Acoustics, M. David Egan, 1988.

Criteria for Acceptable Vibration

The City of Stockton General Plan Noise Element does not contain specific policies pertaining to vibration levels. Because the project site is located adjacent to railroad tracks, the effects of railroad-induced vibration are considered in this analysis.

Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 7, which was developed by Caltrans, shows the vibration levels which would normally be required to result in damage to structures. The vibration levels are presented in terms of peak particle velocity in inches per second.

Table 7
Effects of Various Vibration Levels on People and Buildings

Peak Particle Velocity inches/second	Peak Particle Velocity mm/second	Human Reaction	Effect on Buildings
0-.006	0.15	Imperceptible by people	Vibrations unlikely to cause damage of any type
.006-.02	0.5	Range of Threshold of perception	Vibrations unlikely to cause damage of any type
.08	2.0	Vibrations clearly perceptible	Recommended upper level of which ruins and ancient monuments should be subjected
0.1	2.54	Level at which continuous vibrations begin to annoy people	Virtually no risk of architectural damage to normal buildings
0.2	5.0	Vibrations annoying to people in buildings	Threshold at which there is a risk of architectural damage to normal dwellings
1.0	25.4		Architectural Damage
2.0	50.4		Structural Damage to Residential Buildings
6.0	151.0		Structural Damage to Commercial Buildings

Source: Survey of Earth-borne Vibrations due to Highway Construction and Highway Traffic, Caltrans 1976.

Table 7 indicates that the threshold for damage to structures ranges from 2 to 6 in/sec. One-half this minimum threshold or 1 in/sec p.p.v. is considered a safe criterion that would protect against architectural or structural damage. The general threshold at which human annoyance could occur is noted as 0.1 in/sec p.p.v.

IMPACTS AND MITIGATION MEASURES

Generally, a project may have a significant effect on the environment if it will substantially increase the ambient noise levels for adjoining areas or expose people to severe noise levels. In practice, more specific professional standards have been developed. These standards state that a noise impact may be considered significant if it would generate noise that would conflict with local planning criteria or ordinances, or substantially increase noise levels at noise-sensitive land uses.

STANDARDS OF SIGNIFICANCE

CEQA guidelines state that implementation of the project would result in significant noise impacts if the project would result in either of the following:

a. Exposure of persons to or generation of noise levels in excess of standards established in the City of Stockton General Plan. Specifically, exterior and interior noise levels of 60-65 dB Ldn and 45 dB Ldn, respectively, for residential uses exposed to transportation noise sources and the Table 5 standards for residential uses exposed to non-transportation noise sources.

b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels. Specifically, a threshold of 1 in/sec p.p.v. is considered a safe criterion that would protect against architectural or structural damage.

c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project, typically defined as 3 dB or greater.

d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project, typically defined as 3 dB or greater.

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

f. For a project within the vicinity of a private airstrip, where the project would expose people residing or working in the project area to excessive noise levels.

For this project, the significance of anticipated noise effects are based on a comparison between predicted noise levels and noise criteria defined by the City. For this project, noise impacts are considered significant if the proposed noise sensitive land uses would be exposed to noise levels in excess of the City of Stockton's Noise Element and Development Code standards as described earlier in this report, or if the project results in a traffic noise level increase of 3 dB, or more. A small portion of the western part of the project site is located within the Area of Influence of the Stockton Metropolitan Airport. However, the airport is not a significant noise source at the project site; therefore items "e" and "f" would also not apply.

Traffic Noise Impact Assessment Methodology

To assess noise impacts due to project-related traffic increases on the existing local roadway network, traffic noise levels are predicted at a representative distance for both existing and cumulative without and with project conditions.

The FHWA traffic noise prediction model was used to predict existing plus project traffic noise levels at a representative distance of 100 feet from the roadway centerline. Table 8 shows the predicted traffic noise level increases on the local roadway network for existing conditions. Table 9 shows the predicted traffic noise level increases on the local roadway network for cumulative (1990 GP) conditions. Table 10 shows the predicted traffic noise level increases on the local roadway network for cumulative (2035 GP) conditions. Appendices B-G provides the complete inputs and results to the FHWA model for each of the traffic scenarios.

Table 8
Existing Traffic Noise Levels With & Without Project

Roadway	Segment	Adjacent Uses[1]	Noise Levels (Ldn, dB) 100 Feet From Centerline[2]						
			Existing +Approved (dB)	Existing + Approved + Phase 1	Change (dB)	Traffic Noise Levels Less Than 60 dB Ldn, Yes or No[3]	Existing + Approved + Project (dB)	Change (dB)	Traffic Noise Levels Less Than 60 dB Ldn, Yes or No[3]
East Charter Way	East of Mariposa Rd.	I, V, RR	63.1	61.9	-1.2	No	62.9	-0.3	No
East Main St.	West of E. Charter	C, R	63.0	63.2	0.2	No	63.3	0.3	No
East Main St.	E. Charter to E. South Walker Ln	C, R, A	61.3	62.2	0.8	No	65.9	**4.5**	No
East Main St.	S. Walker to Gillis	R, A	59.8	59.6	-0.2	Yes	64.0	**4.1**	No
E. 8th St.	W. of East Mariposa Rd.	R	62.0	62.8	0.8	No	64.9	2.8	No
Farmington Rd.	SR 99 NB to S. Walker	R, A	68.0	68.6	0.6	No	62.6	-5.4	No
Farmington Rd.	S. Walker to Gillis	A	65.0	66.2	1.2	No	58.5	-6.6	Yes
Farmington Rd.	Gillis to Kaiser Rd.	A	64.9	66.1	1.2	No	66.4	1.6	No
Farmington Rd.	Kaiser Rd. to Jack Tone Rd.	A	65.0	65.0	0.0	No	65.9	0.9	No
Carpenter Rd	West of E. Mariposa	RR	59.5	59.5	0.0	Yes	59.9	0.4	Yes
Carpenter Rd	East of E. Mariposa	I, RR	52.8	51.0	-1.8	Yes	52.2	-0.7	Yes
Arch Rd	SR99 to Newcastle Rd.	I, RR	65.8	68.0	2.2	No	67.9	2.2	No
Arch Rd	Newcastle Rd to Austin Rd	A, Prison	58.7	66.6	**7.9**	No	66.5	**7.8**	No
E. Mariposa Rd	E Charter Way to E 8th St	C, I, R	64.7	65.5	0.8	No	66.3	1.6	No
E. Mariposa Rd	E. 8th St to SR 99 SB Ramps	R, I, V	64.2	65.8	1.6	No	67.2	**3.0**	No
E. Mariposa Rd	SR 99 SB Ramps to SR 99 NB Ramps	C, V	63.8	65.2	1.4	No	68.6	**4.8**	No
E. Mariposa Rd	SR 99 NB off Ramp to Stagecoach Rd	MH, I	65.1	65.8	0.7	No	70.8	**5.7**	No
E. Mariposa Rd	Stagecoach Rd to Carpenter Rd	I	66.1	67.7	1.6	No	69.5	**3.4**	No
E. Mariposa Rd	Carpenter Rd to Austin Rd	A, I	63.9	66.8	2.9	No	68.2	**4.3**	No

Table 8
Existing Traffic Noise Levels With & Without Project

Roadway	Segment	Adjacent Uses[1]	Noise Levels (Ldn, dB) 100 Feet From Centerline[2]						
			Existing +Approved (dB)	Existing + Approved + Phase 1	Change (dB)	Traffic Noise Levels Less Than 60 dB Ldn, Yes or No[3]	Existing + Approved + Project (dB)	Change (dB)	Traffic Noise Levels Less Than 60 dB Ldn, Yes or No[3]
E. Mariposa Rd	Austin Rd to Kaiser Rd	A, RR	64.0	64.1	0.2	No	65.1	1.1	No
S Walker Ln	Farmington Rd to E Charter Way	A	58.6	59.7	1.0	Yes	62.2	**3.5**	No
Gillis Rd	Farmington Rd to E Charter Way	A	50.1	48.0	-2.1	Yes	64.5	**14.4**	No
Austin Rd	S. of Arch Rd.	A, Prison	55.0	55.6	0.7	Yes	54.2	-0.7	Yes
Kaiser Rd	Farmington Rd to E. Mariposa Rd	A	47.5	57.4	**9.9**	Yes	57.4	**10.0**	Yes
Jack Tone Rd	N. of Farmington Rd	A	57.1	57.0	-0.2	Yes	59.5	2.4	Yes
Jack Tone Rd	S. of E Mariposa Rd	A	57.0	54.8	-2.2	Yes	56.2	-0.8	Yes

Bold = Significant increase in noise.

[1]R=Residential, RR=Rural Residential, MH=Mobile Home Park, A=Agriculture, I=Industrial, C=Commercial, V=Vacant

[2] Distances to traffic noise contours are measured in feet from the centerlines of the roadways.

[3] Traffic noise levels are predicted at a standard distance of 100 feet from the roadway centerline and do not account for shielding from existing noise barriers or intervening structures. Traffic noise levels may vary depending on actual setback distances and localized shielding

Source: FHWA-RD-77-108 with inputs from TJKM, Caltrans and j.c. brennan & associates, Inc.

Table 9
Cumulative (1990 GP) Traffic Noise Levels With & Without Project

Roadway	Segment	Adjacent Uses[1]	Noise Levels (Ldn, dB) 100 Feet From Centerline[2]			
			Cumulative (1990 GP) No Project (dB)	Cumulative (1990 GP) + Project (dB)	Change (dB)	Traffic Noise Levels Less Than 60 dB Ldn, Yes or No[3]
East Charter Way	East of Mariposa Rd.	I, V, RR	65.9	63.3	-2.6	No
East Main St.	West of E. Charter	C, R	63.5	64.6	1.1	No
East Main St.	E. Charter to E. South Walker Ln	C, R, A	62.4	64.6	2.2	No
East Main St.	S. Walker to Gillis	R, A	61.4	64.1	2.7	No
E. 8th St.	W. of East Mariposa Rd.	R	64.3	64.7	0.5	No
Farmington Rd.	SR 99 NB to S. Walker	R, A	66.3	67.3	1.0	No
Farmington Rd.	S. Walker to Gillis	A	64.0	61.9	-2.1	No
Farmington Rd.	Gillis to Kaiser Rd.	A	62.3	64.3	2.0	No
Farmington Rd.	Kaiser Rd. to Jack Tone Rd.	A	61.7	63.4	1.7	No
Carpenter Rd	West of E. Mariposa	RR	63.5	63.5	0.0	No
Carpenter Rd	East of E. Mariposa	I, RR	52.6	48.0	-4.7	Yes
Arch Rd	SR99 to Newcastle Rd.	I, RR	66.5	67.9	1.5	No
Arch Rd	Newcastle Rd to Austin Rd	A, Prison	61.2	66.3	**5.1**	No
E. Mariposa Rd	E Charter Way to E 8th St	C, I, R	66.5	66.1	-0.4	No
E. Mariposa Rd	E. 8th St to SR 99 SB Ramps	R, I, V	66.4	66.3	0.0	No
E. Mariposa Rd	SR 99 SB Ramps to SR 99 NB Ramps	C, V	67.6	68.9	1.3	No
E. Mariposa Rd	SR 99 NB off Ramp to Stagecoach Rd	MH, I	68.8	70.8	2.1	No
E. Mariposa Rd	Stagecoach Rd to Carpenter Rd	I	69.7	69.5	-0.2	No
E. Mariposa Rd	Carpenter Rd to Austin Rd	A, I	67.8	69.5	1.7	No
E. Mariposa Rd	Austin Rd to Kaiser Rd	A, RR	64.9	64.5	-0.4	No
S Walker Ln	Farmington Rd to E Charter Way	A	61.2	61.6	0.3	No
Gillis Rd	Farmington Rd to E Charter Way	A	60.5	65.8	**5.3**	No
Austin Rd	S. of Arch Rd.	A, Prison	55.0	51.8	-3.2	Yes
Kaiser Rd	Farmington Rd to E. Mariposa Rd	A	54.0	57.7	**3.7**	Yes
Jack Tone Rd	N. of Farmington Rd	A	61.8	61.6	-0.2	No
Jack Tone Rd	S. of E Mariposa Rd	A	57.1	54.1	-2.9	Yes

Bold = Significant increase in noise.

[1]R=Residential, RR=Rural Residential, MH=Mobile Home Park, A=Agriculture, I=Industrial, C=Commercial, V=Vacant

[2] Distances to traffic noise contours are measured in feet from the centerlines of the roadways.

[3] Traffic noise levels are predicted at a standard distance of 100 feet from the roadway centerline and do not account for shielding from existing noise barriers or intervening structures. Traffic noise levels may vary depending on actual setback distances and localized shielding

Source: FHWA-RD-77-108 with inputs from TJKM, Caltrans and j.c. brennan & associates, Inc.

Table 10
Cumulative (2035 GP) Traffic Noise Levels With & Without Project

Roadway	Segment	Adjacent Uses[1]	Noise Levels (Ldn, dB) 100 Feet From Centerline[2]			
			Cumulative (2035 GP) No Project (dB)	Cumulative (2035 GP) + Project (dB)	Change (dB)	Traffic Noise Levels Less Than 60 dB Ldn, Yes or No[3]
East Charter Way	East of Mariposa Rd.	I, V, RR	64.9	65.3	0.4	No
East Main St.	West of E. Charter	C, R	63.9	64.5	0.6	No
East Main St.	E. Charter to E. South Walker Ln	C, R, A	63.1	63.8	0.8	No
East Main St.	S. Walker to Gillis	R, A	58.4	61.3	2.9	No
E. 8th St.	W. of East Mariposa Rd.	R	65.0	63.9	-1.1	No
Farmington Rd.	SR 99 NB to S. Walker	R, A	69.2	65.9	-3.2	No
Farmington Rd.	S. Walker to Gillis	A	69.9	57.0	-12.9	Yes
Farmington Rd.	Gillis to Kaiser Rd.	A	68.2	68.0	-0.2	No
Farmington Rd.	Kaiser Rd. to Jack Tone Rd.	A	68.1	67.8	-0.3	No
Carpenter Rd	West of E. Mariposa	RR	57.0	63.5	**6.4**	No
Carpenter Rd	East of E. Mariposa	I, RR	61.3	48.6	-12.7	Yes
Arch Rd	SR99 to Newcastle Rd.	I, RR	69.1	68.5	-0.6	No
Arch Rd	Newcastle Rd to Austin Rd	A, Prison	65.9	67.6	1.7	No
E. Mariposa Rd	E Charter Way to E 8th St	C, I, R	67.9	67.5	-0.3	No
E. Mariposa Rd	E. 8th St to SR 99 SB Ramps	R, I, V	66.8	67.4	0.6	No
E. Mariposa Rd	SR 99 SB Ramps to SR 99 NB Ramps	C, V	68.4	69.2	0.8	No
E. Mariposa Rd	SR 99 NB off Ramp to Stagecoach Rd	MH, I	70.3	71.1	0.8	No
E. Mariposa Rd	Stagecoach Rd to Carpenter Rd	I	71.4	69.5	-1.9	No
E. Mariposa Rd	Carpenter Rd to Austin Rd	A, I	70.7	68.3	-2.4	No
E. Mariposa Rd	Austin Rd to Kaiser Rd	A, RR	69.0	67.0	-2.0	No
S Walker Ln	Farmington Rd to E Charter Way	A	60.7	59.9	-0.8	Yes
Gillis Rd	Farmington Rd to E Charter Way	A	64.9	66.3	1.4	No
Austin Rd	S. of Arch Rd.	A, Prison	64.6	65.8	1.3	No
Kaiser Rd	Farmington Rd to E. Mariposa Rd	A	51.9	57.2	**5.3**	Yes
Jack Tone Rd	N. of Farmington Rd	A	54.8	57.7	2.9	Yes
Jack Tone Rd	S. of E Mariposa Rd	A	54.1	53.7	-0.3	Yes

Bold = Significant increase in noise.

[1]R=Residential, RR=Rural Residential, MH=Mobile Home Park, A=Agriculture, I=Industrial, C=Commercial, V=Vacant

[2] Distances to traffic noise contours are measured in feet from the centerlines of the roadways.

[3] Traffic noise levels are predicted at a standard distance of 100 feet from the roadway centerline and do not account for shielding from existing noise barriers or intervening structures. Traffic noise levels may vary depending on actual setback distances and localized shielding

Source: FHWA-RD-77-108 with inputs from TJKM, Caltrans and j.c. brennan & associates, Inc.

The Table 8-10 data indicate that the proposed project would result in traffic noise level increases exceeding 3 dB on a number of project-area roadways, when compared to no-project conditions. Decreases in traffic noise levels are predicted due to predicted reductions in traffic volumes when compared to the no project volumes. A specific discussion of impacts and mitigation measures is provided later in this study.

Traffic Noise Levels at Proposed Residential Uses

The FHWA traffic noise prediction model was used to predict Cumulative 2035 + Project traffic noise levels at the proposed residential uses associated with the project. Table 11 shows the predicted traffic noise levels at the proposed residential uses adjacent to the major project-area roadways. Table 11 also indicates the property line noise barrier heights required to achieve compliance with an exterior noise level standard of 60 dB Ldn. Appendices H and I provide the complete inputs and results to the FHWA traffic noise prediction model and barrier calculations. The modeled noise barriers assume flat site conditions where roadway elevations, base of wall elevations, and building pad elevations are approximately equivalent. Figure 3 shows the recommended sound wall locations.

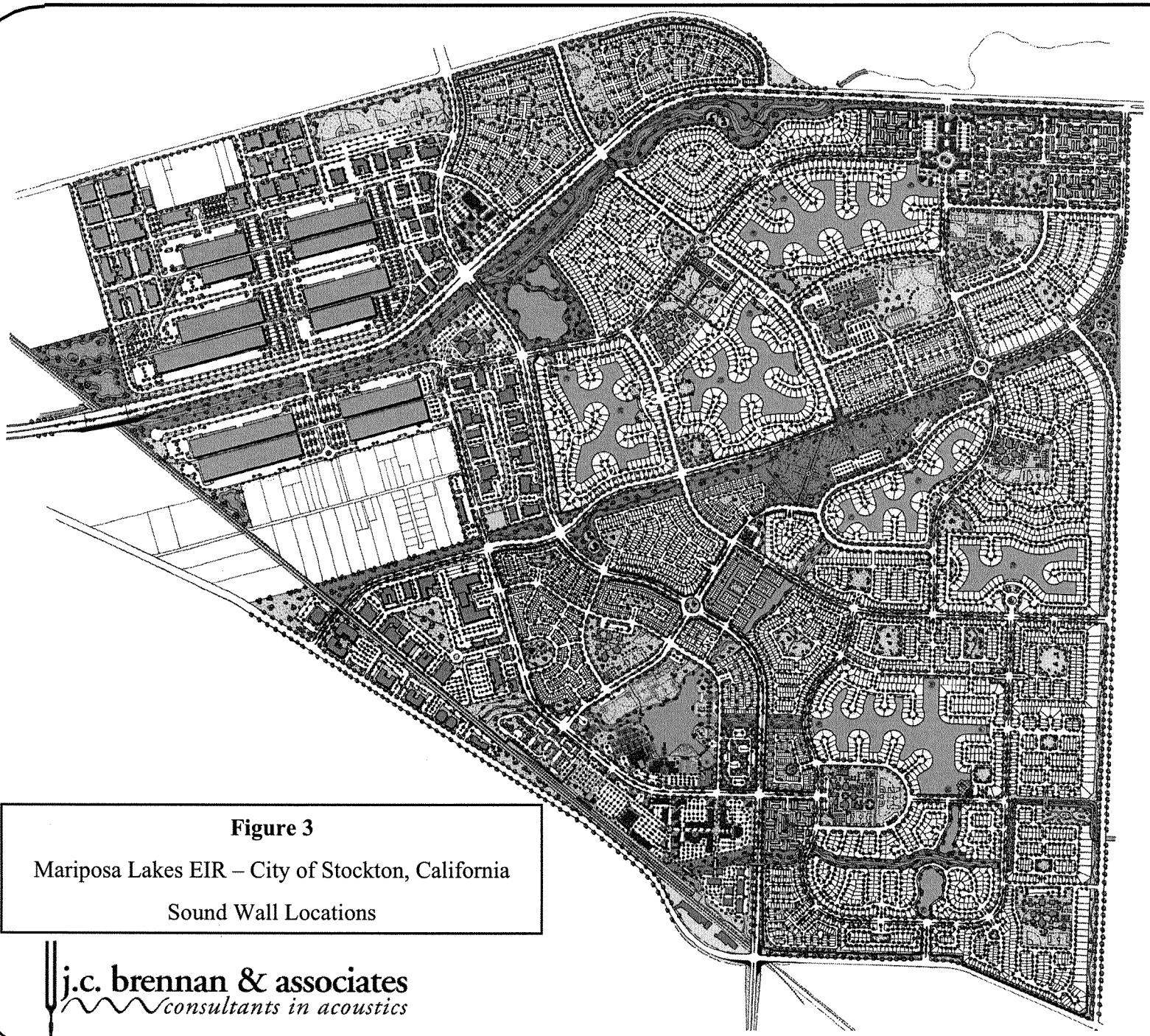


Figure 3

Mariposa Lakes EIR – City of Stockton, California

Sound Wall Locations

j.c. brennan & associates

consultants in acoustics

Table 11
Cumulative (2035 GP) + Project Traffic Noise Levels At Proposed Residential Uses

Roadway	Segment	Approximate Residential Setback, feet[1]	Approximate ADT	Predicted Traffic Noise Levels, dB Ldn[2]			
				No Wall	6' Wall	7' Wall	8' Wall
Austin Pkwy	South of Town Center Pkwy	100	26360	67	61	60	59
Austin Pkwy	North of Town Center Pkwy	70	15910	67	61	60	59
Austin Pkwy	NW of Swallow Tail Pkwy	75	16380	67	60	60	58
Austin Pkwy	North of Viceroy Ave	150	14600	62	56	55	54
Austin Pkwy	NW of SR4 (Proposed)	150	11960	61	55	54	53
Blue Copper Dr	SE of SR4 (Proposed)	60	10710	64	57	56	55
Blue Copper Dr	NW of SR4 (Proposed)	70	7180	61	55	54	53
E. Mariposa	West Of Proj. Entrance	70	5290	60	NA	NA	NA
E. Mariposa	East of Proj. Entrance	175	14570	62	56	56	55
Farmington Rd	West of Blue Copper Dr	100	14680	66	60	59	58
Farmington Rd	East of Blue Copper Dr	150	11340	62	56	55	54
Farmington Rd	North of SR4 (Proposed)	150	11340	62	56	55	54
Farmington Rd	East of Mourning Cloak Ln	100	7840	63	57	56	55
Farmington Rd	East of Driveway 1	225	17550	62	56	55	55
Mourning Cloak Ln	North of Tortoise Shell Ln East Side	225	15160	61	56	55	54
Mourning Cloak Ln	North of Tortoise Shell Ln West Side	75	4670	59	NA	NA	NA
Orange Sulpher Rd	East of Austin Pkwy	130	4670	55	NA	NA	NA
Proj. Entrance	North Of E. Mariposa	75	4020	58	NA	NA	NA
Red Admiral Ave	East of Proj. Entrance	75	8070	61	55	54	53
Red Admiral Ave	West Of Proj. Entrance	75	6050	60	NA	NA	NA
Red Admiral Ave	North of Town Center Pkwy	75	4310	58	NA	NA	NA
SR4 (Proposed)	NE of Austin Pkwy NW Side	75	4700	59	NA	NA	NA
SR4 (Proposed)	NE of Austin Pkwy SE Side	125	28150	69	63	62	61
SR4 (Proposed)	NE of Blue Copper Dr NW Side	500	28150	60	NA	NA	NA
SR4 (Proposed)	NE of Blue Copper Dr SE Side	100	14700	67	61	60	59
SR4 (Proposed)	East of Farmington Rd	500	14700	57	NA	NA	NA
Swallow Tail Pkwy	NE of Town Center Pkwy	250	22340	63	58	57	56
Swallow Tail Pkwy	NE of Austin Pkwy	75	5010	59	NA	NA	NA
Swallow Tail Pkwy	NE of Tortoise Shell Ln	75	12750	63	57	56	55
Tortoise Shell Ln	West of Red Admiral Ave	50	6680	63	56	55	54
Town Center Pkwy	East of Austin Pkwy	75	4180	58	NA	NA	NA
Town Center Pkwy	West of Austin Pkwy	75	8980	64	58	57	56
Town Center Pkwy	NW of Swallow Tail Pkwy	80	13670	66	59	58	57
Viceroy Ave	East of Town Center Pkwy	90	8510	63	57	56	55

Table 11
Cumulative (2035 GP) + Project Traffic Noise Levels At Proposed Residential Uses

Roadway	Segment	Approximate Residential Setback, feet[1]	Approximate ADT	Predicted Traffic Noise Levels, dB Ldn[2]			
				No Wall	6' Wall	7' Wall	8' Wall
Viceroy Ave	East of Tortoise Shell Pkwy North Side	75	7380	63	57	56	55
Viceroy Ave	East of Tortoise Shell Pkwy South Side	70	4340	62	55	54	53
Viceroy Ave	West of Austin Pkwy	300	4340	52	NA	NA	NA

[1] Setback distances are measured in feet from the centerlines of the roadways to the center of residential backyards.
[2] The modeled noise barriers assume flat site conditions where roadway elevations, base of wall elevations, and building pad elevations are approximately equivalent.
[3] Taller wall heights may be required along Austin Road, north of E. Mariposa in order to mitigate railroad noise levels.
Source: FHWA-RD-77-108 with inputs from TJKM, Caltrans and j.c. brennan & associates, Inc.

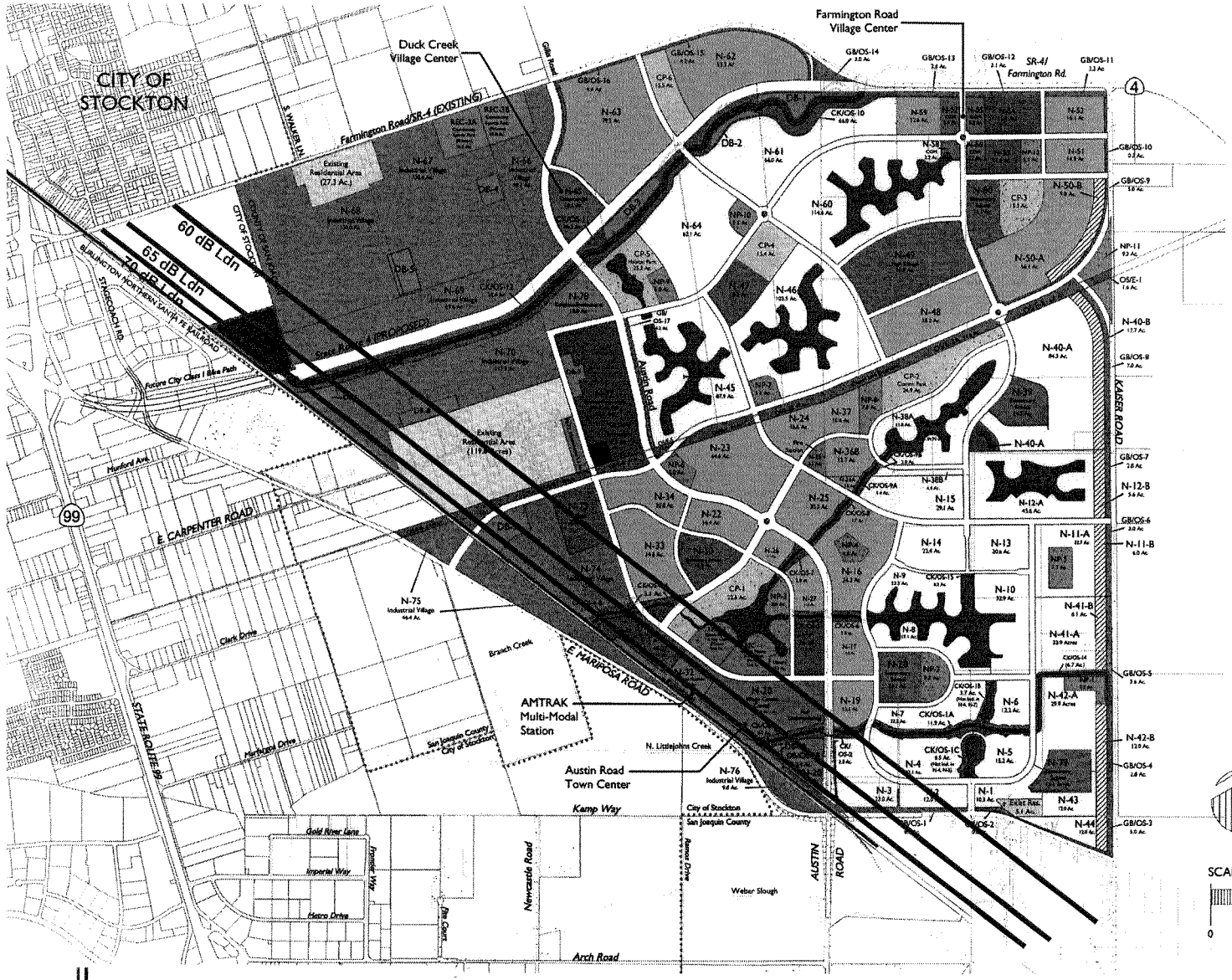
The Table 11 data indicate that noise barriers ranging in height from 6-8 feet could be used to achieve compliance with the City of Stockton exterior noise level standards for the proposed residential uses.

Railroad Noise Impact Assessment Methodology

Future operations along the BNSF railroad lines were not available. Therefore, it is difficult to estimate the future train operation noise levels along the BNSF tracks given that the future level of activity is unknown at this time. For the purposes of this noise analysis, it was assumed that future railroad operations will be similar to those described earlier in this report. It should be noted that even a 25% increase in railroad operations would only result in an increase of approximately 1 dB in overall (Ldn) noise levels. Therefore, the railroad noise monitoring results discussed earlier in this report were used to calculate the predicted railroad noise exposure at the proposed residential uses associated with the project. The predicted railroad noise contours have been drawn on Figure 4. These contours do not account for shielding which may be present at various locations on the project in addition to excess ground attenuation which may occur over large distances. Therefore, these contours are considered to be conservative based upon the best available information at this time. Based upon this noise contour line, the residential uses located within the predicted 60 dB Ldn railroad noise contour would include areas N-2, N-3, N-4, N-19, N-21 and N-33. The proposed college campus may also be considered noise sensitive. Therefore, a discussion of railroad noise impacts and mitigation measures is provided for the residential uses at areas N-2, N-3, N-4, N-19, N-21 and N-33 and the proposed college campus.

The proposed commercial and industrial uses are not typically considered to be noise-sensitive.

Figure 4
Mariposa Lakes EIR - City of Stockton, California
Site Plan and Unmitigated Railroad Noise Contours



Mariposa Lakes

Stockton, California

Land Use Plan

Land Use Legend

Key	Land Use	Acres
	Village Residential Estate	53 ac
	Village Low Density Residential	1,021 ac
	Village Medium Density Residential	533 ac
	Village High Density Residential	66 ac
	Village Center/Commercial	93 ac
	Industrial	614 ac
	Business-Professional	57 ac
	Institutional / Maintenance	43 ac
	Elementary/High Schools	154 ac
	College	21 ac
	Parks & Open Space	506 ac
	Private Recreation Center	52 ac
	Existing Residential	151 ac
	Public Utilities	22 ac
	Lakes 1, 2, & 3	66 ac
	Major Circulation (Roads & R.R.)	358 ac
	Total:	3,810 acres

July 5, 2006

LAND PLANNER / LANDSCAPE ARCHITECT:

RANDALL PLANNING & DESIGN INC.
Landscape Architecture * Golf Facilities
Site and Environmental Planning

SCALE: 1" = 1800'

0 900 1800 3600 5400

j.c. brennan & associates
consultants in acoustics

: Unmitigated Railroad Noise Contours

Area N-21 Village High Density Residential:

This residential area is predicted to be exposed to unmitigated railroad noise levels ranging from 80 dB Ldn at the railroad right-of-way to approximately 65 dB Ldn at the eastern boundary of the parcel. Mitigation measures will be required in order to achieve compliance with the City of Stockton "Normally Acceptable" (60 dB Ldn) or "Conditionally Acceptable" (65 dB Ldn) exterior noise level standards and the City of Stockton 45 dB Ldn interior noise level standard for residential uses. Site design measures could include orienting the outdoor areas such that they received shielding from the proposed residential buildings. Sound walls could also be utilized to mitigate exterior noise levels; however, because the railroad tracks are elevated significantly relative to the project site, they may not be a reasonable mitigation measure. Based upon the existing site grade, preliminary calculations indicate that a 13 foot tall noise barrier would be required to mitigate exterior noise levels to 70 dB Ldn at a distance of 80 feet from the centerline of the BNSF tracks. Changes to the site grading, such as raising the site grade and relative base-of-wall elevation, may increase the effectiveness of noise barriers for this site area. Other site design measures are also discussed later in this document.

A typical residential building façade provides an exterior-to-interior noise level reduction of 25-30 dB. Considering an exterior noise level approaching 80 dB Ldn, an exterior-to-interior noise level reduction of 35 dB would be required to achieve an interior noise level of 45 dB Ldn. A 35 dB exterior-to-interior noise level reduction would require window upgrades and may also require improvements to the building façade. Therefore, a detailed analysis of interior noise levels would need to be conducted when building plans become available.

Areas N-2, N-3, N-4, N-19 and N-33 Village Medium and Low Density Residential:

These residential areas are predicted to be exposed to railroad noise levels in the range of 60-70 dB Ldn depending on their proximity to the BNSF railroad tracks. In order to achieve compliance with the City of Stockton "Normally Acceptable" 60 dB Ldn exterior noise level standard, additional mitigation would be required. Mitigation measures would include the use of site design measures as previously discussed. Based upon the existing site grade, preliminary calculations indicate that a 10 foot tall noise barrier would be required to mitigate exterior noise levels to the "Conditionally Acceptable" level of 65 dB Ldn at the residential uses closest to the BNSF tracks at Parcel N-3. Changes to the site grading, such as raising the site grade and relative base-of-wall elevation, may increase the effectiveness of noise barriers for this site area. Residential uses with greater setbacks could comply with the City of Stockton's 60 dB Ldn exterior noise level standard with much shorter walls. This analysis does not take into account shielding affects from the existing site grading for the elevated E. Mariposa Road or noise barriers which may be built to mitigate traffic noise levels.

College Campus

The proposed college campus would be exposed to railroad noise levels of approximately 60-65 dB Ldn. An exterior noise level of 70 dB Ldn is typically considered to be the upper limit of the "Conditionally Acceptable" exterior noise environment for school uses. Modern construction practices, including mechanical ventilation, should be adequate to achieve an acceptable interior noise environment for classrooms. Therefore, no mitigation measures are considered to be necessary for the college site.

Railroad Vibration Impact Assessment Methodology

Based upon the recent railroad vibration measurements discussed earlier in this section, the project site is not predicted to be exposed to vibration levels exceeding the 1 in/sec p.p.v. threshold for structural damage. It is anticipated that railroad vibration levels may exceed the threshold of human perception at locations adjacent to the railroad right-of-way. However, these vibrations would be short in duration and would not pose a serious risk. Therefore, no vibration mitigation is considered necessary for the proposed residential uses.

Methodology for Future Noise-Producing Uses Developed Within the Project Area

There are a variety of noise sources associated with future development within the project area which have the potential to create noise levels in excess of the applicable noise standards or result in annoyance at existing and future noise-sensitive developments within the project area. Such uses include industrial, commercial, parks, schools, an Amtrak station, and a college campus.

At this time specific uses are not known and detailed site and grading plans have not yet been developed. As a result, it is not feasible to identify specific noise impacts associated with each of the proposed uses. However, a general discussion and assessment of impacts can be conducted based upon the possible types of uses associated with these land use designations. The following is a discussion of the potentially significant noise sources associated with the various types of proposed uses:

Industrial

Industrial uses can include a myriad of noise sources. At the Specific Plan level, detailed site and grading plans associated with these types of noise sources have not yet been developed. As a result, it may not be feasible to identify specific noise impacts associated with these sources. Rather, the potential for these sources to generate excessive or annoying noise levels is identified, and consideration of that potential during the design phases of the development is encouraged. A discussion of potential noise sources is provided below.

Industrial Loading Docks

Industrial loading docks can produce noise levels which exceed the noise level criteria. Noise sources associated with industrial loading docks include trucks idling, truck circulation on the sites, refrigeration units on trucks, pallets dropping and fork lifts operating on the site.

Noise monitoring conducted at industrial loading docks indicate that typical hourly average noise levels at a distance of 50 feet can range between 55 dB Leq and 60 dB Leq, and maximum noise levels range between 80 dB and 84 dB at a distance of 50 feet.

Mechanical Equipment

Heating, air conditioning and ventilation equipment can be a primary noise source associated with commercial or industrial uses. These types of equipment are often mounted on roof tops, located on the ground or located within mechanical rooms. The noise sources can take the form of fans, pumps, air compressors, chillers or cooling towers.

Noise levels from these types of equipment can vary significantly. Noise levels from these types of sources generally range between 45 dB to 70 dB at a distance of 50 feet. However, numerous noise control strategies can be utilized to mitigate noise levels to less than significant levels.

Other Noise Sources

Other fixed or industrial-type noise sources which are typically of concern include but are not limited to the following:

HVAC Systems	Cooling Towers/Evaporative Condensers
Pump Stations	Lift Stations
Steam Valves	Steam Turbines
Generators	Fans
Air Compressors	Heavy Equipment
Conveyor Systems	Transformers
Pile Drivers	Grinders
Drill Rigs	Gas or Diesel Motors
Welders	Cutting Equipment
Outdoor Speakers	Blowers
Chippers	Cutting Equipment
Loading Docks	Amplified music and voice

The types of uses which may typically produce the noise sources described above, include, but are not limited to: wood processing facilities, pump stations, industrial manufacturing facilities, trucking operations, tire shops, auto maintenance shops, metal fabricating shops, shopping centers, drive-up windows, car washes, loading docks, public works projects, batch plants, bottling and canning plants, recycling centers, and electric generating stations.

In these cases, the facilities will be required to comply with the local criteria shown in Table 5 and will require additional analyses when they are within proximity to residential uses.

Commercial and Office Land Uses

Commercial and Office Land Use activities can also produce noise which affects adjacent sensitive land uses. These noise sources can be continuous and may contain tonal components which may be annoying to individuals who live in the nearby vicinity. In addition, noise generation from fixed noise sources may vary based upon climatic conditions, time of day and existing ambient noise levels. The Mariposa Lakes Specific Plan includes land uses which are designated Business Professional and various types of Commercial. The primary noise sources generally include truck deliveries, on-site truck circulation, trash pickup, parking lot use, HVAC equipment and loading docks.

Recommendations for Industrial and Commercial Uses

In general, where these land uses adjoin common residential property lines, mitigation measures should be included. The City of Stockton development code required that 8-foot tall sound walls be constructed where non-residential zoning districts abut residential zoning districts. Where Business Professional uses are located, the primary noise sources are parking lot noise, HVAC equipment and light truck deliveries. In this case, 8 foot tall sounds walls, as required within the City of Stockton development code would typically provide adequate isolation of parking lot and delivery truck activities. HVAC equipment should be located either at ground level or when located on roof-tops, the building facades should include parapets for shielding.

Where commercial or industrial uses adjoin common residential property lines, and loading docks or large truck circulation routes face the residential areas, the following mitigation measures should be included in the project design:

- Loading docks should maintain a minimum distance of 100 feet from residential property lines;
- Property line barriers should be a minimum of 8-feet in height, as required within the City of Stockton development code;
- Circulation routes for large trucks should be located a minimum of 25-feet from the residential property lines;
- All large heating, cooling and ventilation equipment should be located within mechanical rooms where it is possible;
- All large heating, cooling and ventilation equipment shall be shielded from view with solid barriers;
- Emergency generators shall comply with the local noise criteria.
- Loading and unloading operations shall adhere the City of Stockton Municipal Code which restricts these activities to the hours of 7:00 a.m. to 10:00 p.m.

Where commercial and office land uses are separated from residential areas by local streets, all loading activities should be limited to the opposite sides of the buildings from residential uses.

Parks/School Playgrounds:

Children playing at neighborhood parks or elementary school playgrounds are often considered potentially significant noise sources which could adversely affect adjacent noise-sensitive land uses. Typical noise levels associated with groups of approximately 50 children playing at a distance of 50 feet generally range from 55 to 60 dB Leq, with maximum noise levels ranging from 70 to 75 dB. It is expected that the playground areas would be utilized during daytime hours. Therefore, noise levels from the playgrounds would need to comply with the City of Stockton 55 dB Leq and 75 dB Lmax exterior noise level standards at the nearest residential uses. Based upon the reference noise level data discussed above, the 55 dB Leq noise contour would be located approximately 100 feet from the center of playgrounds. The 75 dB Lmax contour would be located at approximately 50 feet from the center of playgrounds.

Given the proximity of most parks or elementary schools to residential uses, and the separation between the residential uses by streets, the potential for exceedence of the City of Stockton noise standards is not expected. Since these types of activities are deemed exempt in the City of Stockton Development Code these are not considered to be significant noise sources.

High School Athletic Fields:

Children playing on school playgrounds are often considered potentially significant noise sources which could adversely affect adjacent noise-sensitive land uses. At the high-school level, however, athletic field activities tend to be more organized, and less of a free-for-all. For example, soccer fields and baseball diamonds will likely be used for physical education and team sporting practices and games, but pick-up games during school lunch hours are uncommon. As a result of the organization, the overall noise generation of the fields tends to be lower than that experienced at grade-school playgrounds. Of course, it is likely that the playing fields will be used by the public on weekends for soccer and baseball practice.

For the assessment of playing field noise impacts, noise level data collected by j.c. brennan & associates, Inc. staff at various sporting venues in recent years was utilized. The proposed high school site would likely include baseball/softball diamonds, soccer fields, and a football stadium. Noise sources at these areas would primarily be shouting students and cheering adults during intermittent periods of the sporting events and practice sessions. j.c. brennan & associates, Inc. file data collected at various baseball/softball and soccer facilities indicate that average and maximum noise levels during games are approximately 60 dB Leq and 75 dB Lmax at a distance of 100 feet from the focal point of the playing fields can be expected.

For baseball games, the focal point tends to be in the vicinity of the pitcher's mound, with the participants and spectators all centrally located around and generally facing that position. For soccer games, the focal point is more variable, with considerable excitement generated when the ball is near either goal, but with the sound of the participants generally spread out over the entire field and the sounds of spectators spread out along the sidelines. This analysis assumed that the cumulative noise generation of the baseball diamonds is centered at the pitcher's mound and at the approximate center of the soccer fields.
It is expected that the high school athletic fields would be utilized during daytime hours.

Therefore, noise levels from the athletic fields would need to comply with the City of Stockton 55 dB Leq and 75 dB Lmax exterior noise level standards at the nearest residential uses. Based upon the reference noise level data discussed above, the 55 dB Leq noise contour would be located approximately 200 feet from the focal point of the athletic field. The 75 dB Lmax contour would be located at approximately 100 feet from the focal point of the athletic field. Given the proximity of most athletic fields to residential uses, and the separation between the residential uses by streets, the potential for exceedence of the City of Stockton noise standards is not expected. Since these types of activities are deemed exempt in the City of Stockton Development Code these are not considered to be significant noise sources.

High School Football Stadium:

The proposed high school would likely include a football stadium. The noise generation of the stadium will depend mainly on crowd size; the interest level in the sporting event, whether or not marching bands will play during events, and on the design of the public address system.

Using noise level data collected at a high school football game, the noise emissions at a distance of 500 feet from the center of the stadium are estimated to be approximately 60 dB Leq and 70-75 dB Lmax, based on a typical size crowd. These levels are consistent with other j.c. brennan & associates, Inc. file data for similar venues.

It is expected that the high school football stadium could be utilized during daytime (7am to 10 pm) or nighttime (10pm to 7am) hours. Noise generation from daytime operation of the football stadium would be exempt under the City of Stockton Municipal Code. However, without special authorization from the City Manager, nighttime noise generation would be subject to the City of Stockton nighttime exterior noise level standards. Therefore, noise levels from the football stadium may need to comply with the City of Stockton nighttime exterior noise level standards at the nearest residential uses. Because the football stadium noise would include noise from the use of a Public Address (PA) system, the City of Stockton exterior noise level standards should be lowered by 5 dB to account for noise consisting primarily of speech or music. Therefore, it is recommended that the football stadium noise levels comply with exterior noise level standards of 40 dB Leq and 60 dB Lmax. Based upon the reference noise level data discussed above, the 40 dB Leq noise contour would be located approximately 5,000 feet from the center of the stadium. The 60 dB Lmax contour would be located at approximately 2,811 feet from the center of the stadium.

Mitigation measures would be required to achieve compliance with the City of Stockton exterior noise level standards at the nearest residential uses. Such measures may include placing the football stadium in a bowl or depression, creating an earthen berm around the bowl/depression, using bleachers with solid backs to prevent sound flanking out of the bowl, requiring football games to end by 10 pm, and by requiring that the PA system be designed to comply with the applicable City of Stockton noise standards prior to construction of the stadium.

Careful application of these mitigation measures could be used to achieve compliance with the applicable City of Stockton noise standards; however, because sounds consisting of speech have been shown to be more annoying than broad-band noise, the potential for

annoyance associated with these uses cannot practically be eliminated. Therefore, buyer/renter notification should be required for all residential uses in the vicinity of the proposed high school football stadium.

Transit Center/Amtrak Station:

The proposed Transit Center/Amtrak station is proposed to be located adjacent to Village Commercial parcel (C-6) and Village High Density Residential parcel (N-48). Potential noise sources associated with the station would include train movements through the station and vehicular movements on and off the site.

Based upon noise measurements conducted for this project, noise generation from Amtrak train passages were measured to be approximately 10 dB less than freight train passages. Therefore, Amtrak movements have little affect on the overall day/night (Ldn) noise level predicted for train movements on the BNSF line. Based upon this conclusion, the proposed Amtrak station would have little affect on railroad noise levels along the BNSF line, even if the station were to increase the number of daily Amtrak trains on the BNSF line.

Vehicular movement including busses and automobiles could generate on-site noise levels exceeding the City of Stockton exterior noise level standards at the adjacent residential uses. Therefore, an analysis of on-site noise generation from the Amtrak station should be conducted when tentative maps become available.

Proposed College Campus:

The proposed college campus is located on Parcel S-8 and would be located adjacent to Industrial uses to the north, residential uses to the east and south, and the BNSF railroad to the west. It is anticipated that the proposed college campus would consist primarily of classroom and administration buildings and parking areas. It is assumed that no athletic fields or stadiums would be included as part of the campus. Therefore, no significant noise sources are expected to be associated with the college campus. If athletic fields or stadiums are proposed, an acoustical study should be conducted to ensure that the City of Stockton exterior noise level standards are not exceeded at the nearest residential uses.

Construction Noise Impact Assessment Methodology

During the construction phases of the project, noise from construction activities would add to the noise environment in the immediate project vicinity. Activities involved in construction would generate maximum noise levels, as indicated in Table 12, ranging from 85 to 90 dB at a distance of 50 feet. Construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours.

Noise would also be generated during the construction phase by increased truck traffic on area roadways and on-site grading. A significant project-generated noise source would include truck traffic associated with transport of heavy materials and equipment to and from construction sites and the movement of heavy construction equipment on the project site, especially during site grading. This noise increase would be of short duration, and would likely occur primarily during daytime hours.

Table 12 Construction Equipment Noise	
Type of Equipment	Maximum Level, dB at 50 feet
Bulldozers	87
Heavy Trucks	88
Backhoe	85
Pneumatic Tools	85
Source: Environmental Noise Pollution, Patrick R. Cunniff, 1977.	

Overview of Noise Mitigation Options

The following overview is provided since the site plan is in the specific plan stage, and may be of use during finalization of the project site plans.

Any noise problem may be considered as being composed of three basic elements: the noise source, a transmission path, and a receiver. The appropriate acoustical treatment for a given project should consider the nature of the noise source and the sensitivity of the receiver. The problem should be defined in terms of appropriate criteria (Ldn, Leq, or Lmax), the location of the sensitive receiver (inside or outside), and when the problem occurs (daytime or nighttime). Noise control techniques should then be selected to provide an acceptable noise environment for the receiving property while remaining consistent with local aesthetic standards and practical structural and economic limits. Fundamental noise control options include the following:

Use of Setbacks:

Noise exposure may be reduced by increasing the distance between the noise source and receiving use. Setback areas can take the form of open space, frontage roads, recreational areas, storage yards, etc. The available noise attenuation from this technique is limited by the characteristics of the noise source, but is generally about 4 to 6 dB per doubling of distance from the source.

Use of Barriers:

Shielding by barriers can be obtained by placing walls, berms or other structures, such as buildings, between the noise source and the receiver. The effectiveness of a barrier depends upon blocking line-of-sight between the source and receiver, and is improved with increasing the distance the sound must travel to pass over the barrier as compared to a straight line from source to receiver. The difference between the distance over a barrier and a straight line between source and receiver is called the "path length difference," and is the basis for calculating barrier noise reduction.
Barrier effectiveness depends upon the relative heights of the source, barrier and receiver. In general, barriers are most effective when placed close to either the receiver or the source. An intermediate barrier location yields a smaller path-length-difference for a given increase in barrier height than does a location closer to either source or receiver.

For maximum effectiveness, barriers must be continuous and relatively airtight along their length and height. To ensure that sound transmission through the barrier is insignificant, barrier mass should be about 4 lbs. /square foot, although a lesser mass may be acceptable if the barrier material provides sufficient transmission loss. Satisfaction of the above criteria requires substantial and well-fitted barrier materials, placed to intercept line of sight to all significant noise sources. Earth, in the form of berms or the face of a depressed area, is also an effective barrier material.

There are practical limits to the noise reduction provided by barriers. For vehicle traffic or railroad noise, a 5 to 10 dB noise reduction may often be reasonably attained. A 15 dB noise reduction is sometimes possible, but a 20 dB noise reduction is extremely difficult to achieve. Barriers usually are provided in the form of walls, berms, or berm/wall combinations. The use of an earth berm in lieu of a solid wall may provide up to 3 dB additional attenuation over that attained by a solid wall alone, due to the absorption provided by the earth. Berm/wall combinations offer slightly better acoustical performance than solid walls, and are often preferred for aesthetic reasons.

Site Design:

Buildings can be placed on a project site to shield other structures or areas, to remove them from noise-impacted areas, and to prevent an increase in noise level caused by reflections. The use of one building to shield another can significantly reduce overall project noise control costs, particularly if the shielding structure is insensitive to noise.

Site design should guard against the creation of reflecting surfaces which may increase onsite noise levels. For example, two buildings placed at an angle facing a noise source may cause noise levels within that angle to increase by up to 3 dB. The open end of "U"-shaped buildings should point away from noise sources for the same reason. Landscaping walls or noise barriers located within a development may inadvertently reflect noise back to a noise-sensitive area unless carefully located. Avoidance of these problems while attaining an aesthetic site design requires close coordination between local agencies, the project engineer and architect, and the noise consultant.

Noise Reduction by Building Facades:

When interior noise levels are of concern in a noisy environment, noise reduction may be obtained through acoustical design of building facades. Standard construction practices provide 10-15 dB noise reduction for building facades with open windows, and approximately 25 dB noise reduction when windows are closed. Thus a 25 dB exterior-to-interior noise reduction can be obtained by the requirement that building design include adequate ventilation systems, allowing windows on a noise-impacted facade to remain closed under any weather condition.
Where greater noise reduction is required, acoustical treatment of the building facade is necessary. Reduction of relative window area is the most effective control technique, followed by providing acoustical glazing (thicker glass or increased air space between panes) in low air infiltration rate frames, use of fixed (non-movable) acoustical glazing or the elimination of windows. Noise transmitted through walls can be reduced by increasing wall mass (using stucco or brick in lieu of wood siding), isolating wall members by the use of double or staggered stud walls, or mounting interior walls on resilient channels. Noise control for exterior doorways is provided by reducing door area, using solid-core doors, and by acoustically sealing door perimeters with suitable gaskets. Roof treatments may include the use of plywood sheathing under roofing materials.

Use of Vegetation:

Trees and other vegetation are often thought to provide significant noise attenuation. However, approximately 100 feet of dense foliage (so that no visual path extends through the foliage) is required to achieve a 5 dB attenuation of traffic noise. Thus the use of vegetation as a noise barrier should not be considered a practical method of noise control unless large tracts of dense foliage are part of the existing landscape.

Vegetation can be used to acoustically "soften" intervening ground between a noise source and receiver, increasing ground absorption of sound and thus increasing the attenuation of sound with distance. Planting of trees and shrubs is also of aesthetic and psychological value, and may reduce adverse public reaction to a noise source by removing the source from view, even though noise levels will be largely unaffected. It should be noted, however, that trees planted on the top of a noise control berm can actually slightly degrade the acoustical performance of the barrier. This effect can occur when high frequency sounds are diffracted (bent) by foliage and directed downward over a barrier.

In summary, the effects of vegetation upon noise transmission are minor, and are primarily limited to increased absorption of high frequency sounds and to reducing adverse public reaction to the noise by providing aesthetic benefits.

SPECIFIC IMPACTS AND MITIGATION MEASURES

Impact 1: **Traffic Noise Level Increases at Existing Land Uses in the Project Area.** Existing residences located along major roadways in the vicinity of the project area will be exposed to elevated traffic noise levels under existing and cumulative buildout conditions either with or without the project. Table 8 indicates that the existing traffic noise level increases resulting from Phase 1 of the proposed project would range from +0.2 dB to +9.9 dB Ldn, relative to no-project conditions. Traffic noise increases ranging from +0.3 dB to +14.4 dB Ldn are predicted to occur under build-out of the entire project, relative to no-project conditions. Table 9 indicates that the cumulative (1990 GP) traffic noise level increases resulting from the proposed project would range from +0.3 dB to +5.3 dB Ldn, relative to cumulative no-project noise levels. Table 10 indicates that the cumulative (2035 GP) traffic noise level increases resulting from the proposed project development would range from +0.4 dB to +6.4 dB Ldn, relative to cumulative no-project noise levels.

In some cases, overall noise levels may still be less than the City of Stockton 60 dB Ldn exterior noise level standard at the residential uses nearest to these impacted roadways. However, pursuant to the project's Significance Criteria, a significant increase in traffic noise levels is defined as 3 dB. **Therefore, this impact is considered potentially significant in need of mitigation.**

Mitigation for Impact 1: **None Available.**

Significant traffic noise impacts at existing noise-sensitive areas associated with growth of communities are generally very difficult to mitigate. This is because some areas may already have noise barriers, or new noise barriers may be infeasible from a cost standpoint or ineffective due to openings in the barriers that are commonly required for roadway ingress and egress. Because it would not likely be feasible to reduce the project-related traffic noise level increases to a less than significant level at all existing noise-sensitive land uses in the project vicinity, **this impact would likely be considered unavoidable.**

Significance after mitigation: Significant and unavoidable

Impact 2: **Traffic Noise Impacts at Future Noise-Sensitive Land Uses Developed Within the Project Area.** Proposed residential land uses located adjacent to any of the major project-area arterial roadways may be impacted by traffic noise.

The degree by which traffic noise levels will exceed the City of Stockton exterior noise level standard will depend on the proximity of the proposed noise-sensitive uses to the major roadways within the project vicinity, and the individual noise generation of those roadways. Because it is likely that residential uses will be developed within areas exposed to projected future traffic noise levels in excess of the applicable noise standards, this impact is considered significant according to the Project's Significance Criteria. **Therefore, this impact is considered potentially significant in need of mitigation.**

Mitigation for Impact 2:

MM 2: Sound walls should be constructed along the major project-area roadways, adjacent to proposed residential uses. The Table 11 data should be consulted to determine appropriate barrier heights. If the assumptions shown in Table 11 vary considerably, a detailed analysis of exterior and interior mitigation measures should be conducted when tentative maps become available.

Significance after Mitigation: **Less than Significant.**

Impact 3: **Railroad Noise Impacts at Future Noise-Sensitive Land Uses Developed Within the Project Area.** Proposed residential land uses located adjacent to the BNSF line are predicted to be impacted by railroad noise. BNSF train activity is predicted to exceed the City of Stockton 60 dB Ldn exterior noise level standard applicable to residential uses and is therefore considered significant according to the Project's Significance Criteria. **Therefore, this impact is considered potentially significant in need of mitigation.**

Mitigation for Impact 3:

MM 3: An analysis of projected future railroad noise levels should be conducted at the exterior and interior spaces of future noise-sensitive developments proposed within the Mariposa Lakes project area which would be located within the 60 dB Ldn railroad noise contour. This would specifically include residential areas N-2, N-3, N-4, N-19, N-21 and N-33. These analyses should be prepared at such a time as when tentative maps are available so that practical and feasible noise mitigation measures can be included in the project design to achieve compliance with the applicable noise standards.

Significance after Mitigation: **Less than Significant.**

Noise Impacts Associated with Development of Noise-Producing Uses within the Plan Area

Impact 4: **Impacts of Industrial and Commercial Noise Sources on Existing and Planned Noise-Sensitive Uses in the Project Area.** As stated in the methodology section of this report, noise impacts associated with future uses developed within the industrial areas cannot practically be evaluated due to the wide range of variables which will affect such noise generation. Because the zoning of the industrial villages would allow for certain uses which could generate significant noise levels, the potential for off-site adverse noise impacts exists, even though it cannot practically be quantified at this time. **Therefore, this impact is considered potentially significant in need of mitigation.**

Mitigation for Impact 4:

MM 4a: Planned retail commercial uses shall be required to comply with the requirements of chapter 16 of the City of Stockton Development Code, specifically sections 16-340.030 (A), 16-340.030 (B), 16-340.030 (F), and 16-340.040 (B)(2)(c) .

MM 4b: During project review, the Zoning Administer shall make a determination as to whether or not the proposed use would likely generate noise levels which could adversely affect the adjacent residential areas. If it is determined from this review that proposed uses could generate excessive noise levels at noise-sensitive uses, the applicant shall be required to prepare an acoustical analysis to ensure that all appropriate noise control measures are incorporated into the project design so as to mitigate any noise impacts. Such noise control measures include, but are not limited to, use of noise barriers, site-redesign, silencers, partial or complete enclosures of critical equipment, etc.

MM 4c: Where Business Professional uses are located, the primary noise sources are parking lot noise, HVAC equipment and light truck deliveries. In this case, 8 foot tall sounds walls, as required within the City of Stockton development code would typically provide adequate isolation of parking lot and delivery truck activities. HVAC equipment should be located either at ground level or when located on roof-tops, the building facades should include parapets for shielding.

MM 4d: Where commercial or industrial uses abut residential property lines, and loading docks or large truck circulation routes face the residential areas, the following mitigation measures should be included in the project design:

- Loading docks should maintain a minimum distance of 100 feet from residential property lines;
- Property line barriers should be a minimum of 8-feet in height, as required within the City of Stockton development code;
- Circulation routes for large trucks should be located a minimum of 25-feet from the residential property lines;
- All large heating, cooling and ventilation equipment should be located within mechanical rooms where it is possible;
- All large heating, cooling and ventilation equipment shall be shielded from view with solid barriers;
- Emergency generators shall comply with the local noise criteria.
- Loading and unloading operations shall adhere the City of Stockton Municipal Code which restricts these activities to the hours of 7:00 a.m. to 10:00 p.m.

MM 4e: Where commercial and office land uses are separated from residential areas by local streets, all loading activities should be limited to the opposite sides of the buildings from residential uses.

Significance after Mitigation: **Less than Significant.**

Impact 5: **Neighborhood Parks.** The Development Code provides exemptions for park activity noise provided that it is restricted between the hours of 7:00 a.m. to 10:00 p.m. **Therefore, this impact is considered potentially significant.**

Mitigation for Impact 5:

MM 5 Park activities should be limited to the hours of 7:00 a.m. to 10:00 p.m.

Significance after Mitigation: **Less than Significant.**

Impact 6: **Impact of Elementary School Playgrounds on Future Noise-Sensitive Uses in the Project Area.** The Development Code provides exemptions for activities at schools provided that it is restricted between the hours of 7:00 a.m. to 10:00 p.m. **Therefore, this impact is considered potentially significant in need of mitigation.**

Mitigation for Impact 6:

MM 6: Outdoor school playgrounds and sporting activities should be limited to the hours of 7:00 a.m. to 10:00 p.m.

Significance after Mitigation: **Less than Significant.**

Impact 7: **Impact of High School Athletic Field Noise on Future Noise-Sensitive Uses in the Project Area.** The Development Code provides exemptions for activities at schools provided that it is restricted between the hours of 7:00 a.m. to 10:00 p.m. **Therefore, this impact is considered potentially significant in need of mitigation.**

Mitigation for Impact 7:

MM 7: Outdoor school playgrounds and sporting activities should be limited to the hours of 7:00 a.m. to 10:00 p.m.

Impact 8: **Impact of High School Stadium Noise on Future Noise-Sensitive Uses in the Project Area.** As stated in the methodology section of this report, High School stadium noise levels are likely to generate noise levels exceeding the applicable City of Stockton exterior noise level standards at the nearest noise-sensitive uses. Based upon the reference noise level data discussed previously, the 40 dB Leq stadium noise contour would be located approximately 5,000 feet from the center of the stadium. The 60 dB Lmax contour would be located at approximately 2,811 feet from the center of the stadium. Therefore, residential uses adjacent to the high school stadium would likely be exposed to noise levels exceeding the City of Stockton daytime and nighttime exterior noise level standards. **Therefore, this impact is considered potentially significant in need of mitigation.**

Mitigation for Impact 8:

MM 8a: The football stadium should be placed in a bowl or depression in order to reduce the amount of noise transmission to adjacent residential areas. An earthen berm may also be required along the rim of the bowl/depression.

MM 8b: All bleachers or seating should be constructed to have solid backs to prevent sound from flanking to the west.

MM 8c: All contests should be scheduled to end by 10:00 p.m.

MM 8d: The stadium PA system should be designed to comply with the applicable City of Stockton noise standards prior to construction of the stadium.

MM 8e: An acoustical consultant should review the proposed stadium design prior to issuance of building permits.

MM 8f: Careful application of these mitigation measures could be used to achieve compliance with the applicable City of Stockton noise standards; however, because sounds consisting of speech have been shown to be more annoying than broad-band noise, the potential for annoyance associated with these uses cannot practically be eliminated. Therefore, buyer/renter notification should be required for all residential uses in the vicinity of the proposed high school football stadium.

Significance after Mitigation: **Less than Significant**.

Impact 9: **Impact of Transit Center/Amtrak Station on Future Noise-Sensitive Uses in the Project Area.** Vehicular movement including busses and automobiles could generate on-site noise levels exceeding the City of Stockton exterior noise level standards at the adjacent residential uses. **Therefore, this impact is considered potentially significant in need of mitigation.**

MM 9: An analysis of on-site noise generation from the Amtrak station should be conducted when tentative maps become available.

Significance after Mitigation: **Less than Significant.**

Impact 10: **Impact of College Campus on Future Noise-Sensitive Uses in the Project Area.** If the proposed college campus includes athletic playing fields or stadiums, on-site noise generation could exceed the City of Stockton exterior noise level standards at the adjacent residential uses. **Therefore, this impact is considered potentially significant in need of mitigation.**

MM 10: An analysis of on-site noise generation from the College Campus should be conducted when tentative maps become available.

Significance after Mitigation: **Less than Significant.**

Impact 11: **Construction Noise.** Activities associated with construction will result in elevated noise levels, with maximum noise levels ranging from 85-90 dB at 100 feet, as shown in Table 12. Construction activities would be temporary in nature and would likely occur during normal daytime working hours. Nonetheless, because construction activities would result in periods of elevated noise levels, **this impact is considered potentially significant in need of mitigation.**

Mitigation for Impact 11:

MM 11: Construction activities should adhere to the requirements of the City of Stockton with respect to hours of operation. In addition, all equipment shall be fitted with factory equipped mufflers, and in good working order.

Significance after Mitigation: **Less than Significant.**

Appendix A-1

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2005-075
Description: Mariposa Lakes EIR - Existing
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance
1	East Charter Way	East of Mariposa Rd.	9,070	83		17	1	1	45	100
2	East Main St.	West of E. Charter	8,680	83		17	1	1	45	100
3	East Main St.	E. Charter to E. South Walker Ln	4,995	83		17	1	1	45	100
4	East Main St.	S. Walker to Gillis	4,765	83		17	1	1	45	100
5	E. 8th St.	W.of East Mariposa Rd.	4,715	83		17	1	1	45	100
6	Farmington Rd.	SR 99 NB to S. Walker	9,130	83		17	1	5	45	100
7	Farmington Rd.	S. Walker to Gillis	3,190	83		17	1	5	55	100
8	Farmington Rd.	Gillis to Kaiser Rd.	3,095	83		17	1	5	55	100
9	Farmington Rd.	Kaiser Rd. to Jack Tone Rd.	2,920	83		17	1	5	55	100
10	Carpenter Rd	West of E. Mariposa	410	83		17	1	1	45	100
11	Carpenter Rd	East of E. Mariposa	815	83		17	1	1	45	100
12	Arch Rd	SR99 to Newcastle Rd.	2,475	83		17	1	1	45	100
13	Arch Rd	Newcastel Rd to Austin Rd	1,520	83		17	1	1	45	100
14	E. Mariposa Rd	E Charter Way to E 8th St	11,340	83		17	1	1	45	100
15	E. Mariposa Rd	E. 8th St to SR 99 SB Ramps	7,985	83		17	1	1	45	100
16	E. Mariposa Rd	SR 99 SB Ramps to SR 99 NB Ramps	9,030	83		17	1	1	45	100
17	E. Mariposa Rd	SR 99 NB off Ramp to Stagecoach Rd	8,545	83		17	1	1	45	100
18	E. Mariposa Rd	Stagecoach Rd to Carpenter Rd	8,545	83		17	1	1	50	100
19	E. Mariposa Rd	Carpenter Rd to Austin Rd	6,775	83		17	1	1	50	100
20	E. Mariposa Rd	Austin Rd to Kaiser Rd	5,865	83		17	1	1	50	100
21	S Walker Ln	Farmington Rd to E Charter Way	895	83		17	1	1	45	100
22	Gillis Rd	Farmington Rd to E Charter Way	345	83		17	1	1	45	100
23	Austin Rd	S. of Arch Rd.	1,480	83		17	1	1	45	100
24	Kaiser Rd	Farmington Rd to E. Mariposa Rd	280	83		17	1	1	45	100
25	Jack Tone Rd	N. of Farmington Rd	2,595	83		17	1	1	45	100
26	Jack Tone Rd	S. of E Mariposa Rd	2,535	83		17	1	1	45	100

Appendix A-2

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project #: 2005-075
Description: Mariposa Lakes EIR - Existing
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	East Charter Way	East of Mariposa Rd.	61.4	49.8	54.3	62
2	East Main St.	West of E. Charter	61.2	49.6	54.1	62
3	East Main St.	E. Charter to E. South Walker Ln	58.8	47.2	51.7	60
4	East Main St.	S. Walker to Gillis	58.6	47.0	51.5	60
5	E. 8th St.	W.of East Mariposa Rd.	58.6	46.9	51.4	60
6	Farmington Rd.	SR 99 NB to S. Walker	61.3	49.8	61.3	64
7	Farmington Rd.	S. Walker to Gillis	59.2	46.6	57.5	62
8	Farmington Rd.	Gillis to Kaiser Rd.	59.1	46.4	57.4	61
9	Farmington Rd.	Kaiser Rd. to Jack Tone Rd.	58.8	46.2	57.1	61
10	Carpenter Rd	West of E. Mariposa	48.0	36.3	40.8	49
11	Carpenter Rd	East of E. Mariposa	51.0	39.3	43.8	52
12	Arch Rd	SR99 to Newcastle Rd.	55.8	44.1	48.6	57
13	Arch Rd	Newcastel Rd to Austin Rd	53.7	42.0	46.5	55
14	E. Mariposa Rd	E Charter Way to E 8th St	62.4	50.7	55.2	63
15	E. Mariposa Rd	E. 8th St to SR 99 SB Ramps	60.9	49.2	53.7	62
16	E. Mariposa Rd	SR 99 SB Ramps to SR 99 NB Ramps	61.4	49.7	54.2	62
17	E. Mariposa Rd	SR 99 NB off Ramp to Stagecoach Rd	61.2	49.5	54.0	62
18	E. Mariposa Rd	Stagecoach Rd to Carpenter Rd	62.5	50.2	54.4	63
19	E. Mariposa Rd	Carpenter Rd to Austin Rd	61.5	49.2	53.4	62
20	E. Mariposa Rd	Austin Rd to Kaiser Rd	60.8	48.6	52.8	62
21	S Walker Ln	Farmington Rd to E Charter Way	51.4	39.7	44.2	52
22	Gillis Rd	Farmington Rd to E Charter Way	47.2	35.6	40.1	48
23	Austin Rd	S. of Arch Rd.	53.5	41.9	46.4	55
24	Kaiser Rd	Farmington Rd to E. Mariposa Rd	46.3	34.7	39.2	47
25	Jack Tone Rd	N. of Farmington Rd	56.0	44.3	48.8	57
26	Jack Tone Rd	S. of E Mariposa Rd	55.9	44.2	48.7	57

Appendix A-3

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Contour Output

Project #: 2005-075
Description: Mariposa Lakes EIR - Existing
Ldn/CNEL: Ldn
Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment Description	75	70	65	60	55
1	East Charter Way	East of Mariposa Rd.	15	31	67	145	313
2	East Main St.	West of E. Charter	14	30	65	141	304
3	East Main St.	E. Charter to E. South Walker Ln	10	21	45	98	210
4	East Main St.	S. Walker to Gillis	9	20	44	94	204
5	E. 8th St.	W.of East Mariposa Rd.	9	20	44	94	202
6	Farmington Rd.	SR 99 NB to S. Walker	20	43	92	197	425
7	Farmington Rd.	S. Walker to Gillis	13	28	59	128	275
8	Farmington Rd.	Gillis to Kaiser Rd.	13	27	58	125	270
9	Farmington Rd.	Kaiser Rd. to Jack Tone Rd.	12	26	56	120	259
10	Carpenter Rd	West of E. Mariposa	2	4	9	18	40
11	Carpenter Rd	East of E. Mariposa	3	6	14	29	63
12	Arch Rd	SR99 to Newcastle Rd.	6	13	28	61	132
13	Arch Rd	Newcastel Rd to Austin Rd	4	10	20	44	95
14	E. Mariposa Rd	E Charter Way to E 8th St	17	36	78	168	363
15	E. Mariposa Rd	E. 8th St to SR 99 SB Ramps	13	29	62	133	287
16	E. Mariposa Rd	SR 99 SB Ramps to SR 99 NB Ramps	14	31	67	145	312
17	E. Mariposa Rd	SR 99 NB off Ramp to Stagecoach Rd	14	30	65	139	300
18	E. Mariposa Rd	Stagecoach Rd to Carpenter Rd	17	36	77	167	359
19	E. Mariposa Rd	Carpenter Rd to Austin Rd	14	31	66	143	308
20	E. Mariposa Rd	Austin Rd to Kaiser Rd	13	28	60	130	279
21	S Walker Ln	Farmington Rd to E Charter Way	3	7	14	31	67
22	Gillis Rd	Farmington Rd to E Charter Way	2	4	8	16	35
23	Austin Rd	S. of Arch Rd.	4	9	20	43	93
24	Kaiser Rd	Farmington Rd to E. Mariposa Rd	1	3	7	14	31
25	Jack Tone Rd	N. of Farmington Rd	6	14	29	63	136
26	Jack Tone Rd	S. of E Mariposa Rd	6	13	29	62	134

Appendix B-1

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2005-075
Description: Mariposa Lakes EIR - Existing + Approved
Ldn/CNEL: Ldn
Hard/Soft: Soft

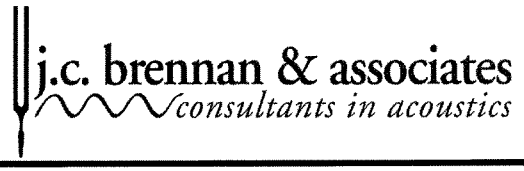
Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance
1	East Charter Way	East of Mariposa Rd.	10,710	83		17	1	1	45	100
2	East Main St.	West of E. Charter	10,275	83		17	1	1	45	100
3	East Main St.	E. Charter to E. South Walker Ln	7,075	83		17	1	1	45	100
4	East Main St.	S. Walker to Gillis	5,005	83		17	1	1	45	100
5	E. 8th St.	W.of East Mariposa Rd.	8,290	83		17	1	1	45	100
6	Farmington Rd.	SR 99 NB to S. Walker	20,785	83		17	1	5	45	100
7	Farmington Rd.	S. Walker to Gillis	7,020	83		17	1	5	55	100
8	Farmington Rd.	Gillis to Kaiser Rd.	6,785	83		17	1	5	55	100
9	Farmington Rd.	Kaiser Rd. to Jack Tone Rd.	6,995	83		17	1	5	55	100
10	Carpenter Rd	West of E. Mariposa	4,645	83		17	1	1	45	100
11	Carpenter Rd	East of E. Mariposa	1,000	83		17	1	1	45	100
12	Arch Rd	SR99 to Newcastle Rd.	19,645	83		17	1	1	45	100
13	Arch Rd	Newcastel Rd to Austin Rd	3,815	83		17	1	1	45	100
14	E. Mariposa Rd	E Charter Way to E 8th St	15,320	83		17	1	1	45	100
15	E. Mariposa Rd	E. 8th St to SR 99 SB Ramps	13,635	83		17	1	1	45	100
16	E. Mariposa Rd	SR 99 SB Ramps to SR 99 NB Ramps	12,500	83		17	1	1	45	100
17	E. Mariposa Rd	SR 99 NB off Ramp to Stagecoach Rd	16,820	83		17	1	1	45	100
18	E. Mariposa Rd	Stagecoach Rd to Carpenter Rd	16,050	83		17	1	1	50	100
19	E. Mariposa Rd	Carpenter Rd to Austin Rd	9,740	83		17	1	1	50	100
20	E. Mariposa Rd	Austin Rd to Kaiser Rd	9,875	83		17	1	1	50	100
21	S Walker Ln	Farmington Rd to E Charter Way	3,790	83		17	1	1	45	100
22	Gillis Rd	Farmington Rd to E Charter Way	530	83		17	1	1	45	100
23	Austin Rd	S. of Arch Rd.	1,630	83		17	1	1	45	100
24	Kaiser Rd	Farmington Rd to E. Mariposa Rd	290	83		17	1	1	45	100
25	Jack Tone Rd	N. of Farmington Rd	2,680	83		17	1	1	45	100
26	Jack Tone Rd	S. of E Mariposa Rd	2,615	83		17	1	1	45	100

Appendix B-2

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project #: 2005-075
Description: Mariposa Lakes EIR - Existing + Approved
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	East Charter Way	East of Mariposa Rd.	62.1	50.5	55.0	63
2	East Main St.	West of E. Charter	62.0	50.3	54.8	63
3	East Main St.	E. Charter to E. South Walker Ln	60.3	48.7	53.2	61
4	East Main St.	S. Walker to Gillis	58.8	47.2	51.7	60
5	E. 8th St.	W.of East Mariposa Rd.	61.0	49.4	53.9	62
6	Farmington Rd.	SR 99 NB to S. Walker	64.8	53.4	64.8	68
7	Farmington Rd.	S. Walker to Gillis	62.6	50.0	60.9	65
8	Farmington Rd.	Gillis to Kaiser Rd.	62.5	49.9	60.8	65
9	Farmington Rd.	Kaiser Rd. to Jack Tone Rd.	62.6	50.0	60.9	65
10	Carpenter Rd	West of E. Mariposa	58.5	46.9	51.3	60
11	Carpenter Rd	East of E. Mariposa	51.8	40.2	44.7	53
12	Arch Rd	SR99 to Newcastle Rd.	64.8	53.1	57.6	66
13	Arch Rd	Newcastel Rd to Austin Rd	57.7	46.0	50.5	59
14	E. Mariposa Rd	E Charter Way to E 8th St	63.7	52.0	56.5	65
15	E. Mariposa Rd	E. 8th St to SR 99 SB Ramps	63.2	51.5	56.0	64
16	E. Mariposa Rd	SR 99 SB Ramps to SR 99 NB Ramps	62.8	51.2	55.6	64
17	E. Mariposa Rd	SR 99 NB off Ramp to Stagecoach Rd	64.1	52.4	56.9	65
18	E. Mariposa Rd	Stagecoach Rd to Carpenter Rd	65.2	53.0	57.2	66
19	E. Mariposa Rd	Carpenter Rd to Austin Rd	63.0	50.8	55.0	64
20	E. Mariposa Rd	Austin Rd to Kaiser Rd	63.1	50.8	55.0	64
21	S Walker Ln	Farmington Rd to E Charter Way	57.6	46.0	50.5	59
22	Gillis Rd	Farmington Rd to E Charter Way	49.1	37.4	41.9	50
23	Austin Rd	S. of Arch Rd.	54.0	42.3	46.8	55
24	Kaiser Rd	Farmington Rd to E. Mariposa Rd	46.5	34.8	39.3	47
25	Jack Tone Rd	N. of Farmington Rd	56.1	44.5	49.0	57
26	Jack Tone Rd	S. of E Mariposa Rd	56.0	44.4	48.9	57



Appendix B-3

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Contour Output

Project #: 2005-075
Description: Mariposa Lakes EIR - Existing + Approved
Ldn/CNEL: Ldn
Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment Description	75	70	65	60	55
1	East Charter Way	East of Mariposa Rd.	16	35	75	162	349
2	East Main St.	West of E. Charter	16	34	73	158	340
3	East Main St.	E. Charter to E. South Walker Ln	12	26	57	123	265
4	East Main St.	S. Walker to Gillis	10	21	45	98	210
5	E. 8th St.	W.of East Mariposa Rd.	14	29	63	137	294
6	Farmington Rd.	SR 99 NB to S. Walker	34	74	159	342	736
7	Farmington Rd.	S. Walker to Gillis	22	47	100	216	465
8	Farmington Rd.	Gillis to Kaiser Rd.	21	46	98	211	455
9	Farmington Rd.	Kaiser Rd. to Jack Tone Rd.	22	46	100	216	464
10	Carpenter Rd	West of E. Mariposa	9	20	43	93	200
11	Carpenter Rd	East of E. Mariposa	3	7	15	33	72
12	Arch Rd	SR99 to Newcastle Rd.	24	52	113	243	523
13	Arch Rd	Newcastel Rd to Austin Rd	8	18	38	81	176
14	E. Mariposa Rd	E Charter Way to E 8th St	21	44	96	206	443
15	E. Mariposa Rd	E. 8th St to SR 99 SB Ramps	19	41	88	190	410
16	E. Mariposa Rd	SR 99 SB Ramps to SR 99 NB Ramps	18	39	83	180	387
17	E. Mariposa Rd	SR 99 NB off Ramp to Stagecoach Rd	22	47	102	219	472
18	E. Mariposa Rd	Stagecoach Rd to Carpenter Rd	25	55	118	254	547
19	E. Mariposa Rd	Carpenter Rd to Austin Rd	18	39	84	182	392
20	E. Mariposa Rd	Austin Rd to Kaiser Rd	18	40	85	184	395
21	S Walker Ln	Farmington Rd to E Charter Way	8	17	38	81	175
22	Gillis Rd	Farmington Rd to E Charter Way	2	5	10	22	47
23	Austin Rd	S. of Arch Rd.	5	10	21	46	100
24	Kaiser Rd	Farmington Rd to E. Mariposa Rd	1	3	7	15	31
25	Jack Tone Rd	N. of Farmington Rd	6	14	30	64	139
26	Jack Tone Rd	S. of E Mariposa Rd	6	14	29	63	136

Appendix C-1

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2005-075
Description: Mariposa Lakes EIR - Existing + Approved + Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance
1	East Charter Way	East of Mariposa Rd.	10,095	83		17	1	1	45	100
2	East Main St.	West of E. Charter	11,030	83		17	1	1	45	100
3	East Main St.	E. Charter to E. South Walker Ln	20,065	83		17	1	1	45	100
4	East Main St.	S. Walker to Gillis	12,920	83		17	1	1	45	100
5	E. 8th St.	W.of East Mariposa Rd.	15,920	83		17	1	1	45	100
6	Farmington Rd.	SR 99 NB to S. Walker	6,010	83		17	1	5	45	100
7	Farmington Rd.	S. Walker to Gillis	1,550	83		17	1	5	55	100
8	Farmington Rd.	Gillis to Kaiser Rd.	9,710	83		17	1	5	55	100
9	Farmington Rd.	Kaiser Rd. to Jack Tone Rd.	8,570	83		17	1	5	55	100
10	Carpenter Rd	West of E. Mariposa	5,085	83		17	1	1	45	100
11	Carpenter Rd	East of E. Mariposa	860	83		17	1	1	45	100
12	Arch Rd	SR99 to Newcastle Rd.	32,355	83		17	1	1	45	100
13	Arch Rd	Newcastel Rd to Austin Rd	22,920	83		17	1	1	45	100
14	E. Mariposa Rd	E Charter Way to E 8th St	21,905	83		17	1	1	45	100
15	E. Mariposa Rd	E. 8th St to SR 99 SB Ramps	27,455	83		17	1	1	45	100
16	E. Mariposa Rd	SR 99 SB Ramps to SR 99 NB Ramps	37,655	83		17	1	1	45	100
17	E. Mariposa Rd	SR 99 NB off Ramp to Stagecoach Rd	62,780	83		17	1	1	45	100
18	E. Mariposa Rd	Stagecoach Rd to Carpenter Rd	35,395	83		17	1	1	50	100
19	E. Mariposa Rd	Carpenter Rd to Austin Rd	26,295	83		17	1	1	50	100
20	E. Mariposa Rd	Austin Rd to Kaiser Rd	12,725	83		17	1	1	50	100
21	S Walker Ln	Farmington Rd to E Charter Way	8,515	83		17	1	1	45	100
22	Gillis Rd	Farmington Rd to E Charter Way	14,460	83		17	1	1	45	100
23	Austin Rd	S. of Arch Rd.	1,380	83		17	1	1	45	100
24	Kaiser Rd	Farmington Rd to E. Mariposa Rd	2,880	83		17	1	1	45	100
25	Jack Tone Rd	N. of Farmington Rd	4,635	83		17	1	1	45	100
26	Jack Tone Rd	S. of E Mariposa Rd	2,175	83		17	1	1	45	100

Appendix C-2

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project #: 2005-075
Description: Mariposa Lakes EIR - Existing + Approved + Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	East Charter Way	East of Mariposa Rd.	61.9	50.2	54.7	62.9
2	East Main St.	West of E. Charter	62.3	50.6	55.1	63.3
3	East Main St.	E. Charter to E. South Walker Ln	64.9	53.2	57.7	65.9
4	East Main St.	S. Walker to Gillis	63.0	51.3	55.8	64.0
5	E. 8th St.	W.of East Mariposa Rd.	63.9	52.2	56.7	64.9
6	Farmington Rd.	SR 99 NB to S. Walker	59.5	48.0	59.5	62.6
7	Farmington Rd.	S. Walker to Gillis	56.1	43.4	54.4	58.5
8	Farmington Rd.	Gillis to Kaiser Rd.	64.0	51.4	62.3	66.4
9	Farmington Rd.	Kaiser Rd. to Jack Tone Rd.	63.5	50.9	61.8	65.9
10	Carpenter Rd	West of E. Mariposa	58.9	47.2	51.7	59.9
11	Carpenter Rd	East of E. Mariposa	51.2	39.5	44.0	52.2
12	Arch Rd	SR99 to Newcastle Rd.	66.9	55.3	59.8	67.9
13	Arch Rd	Newcastel Rd to Austin Rd	65.4	53.8	58.3	66.5
14	E. Mariposa Rd	E Charter Way to E 8th St	65.3	53.6	58.1	66.3
15	E. Mariposa Rd	E. 8th St to SR 99 SB Ramps	66.2	54.6	59.1	67.2
16	E. Mariposa Rd	SR 99 SB Ramps to SR 99 NB Ramps	67.6	55.9	60.4	68.6
17	E. Mariposa Rd	SR 99 NB off Ramp to Stagecoach Rd	69.8	58.2	62.7	70.8
18	E. Mariposa Rd	Stagecoach Rd to Carpenter Rd	68.7	56.4	60.6	69.5
19	E. Mariposa Rd	Carpenter Rd to Austin Rd	67.4	55.1	59.3	68.2
20	E. Mariposa Rd	Austin Rd to Kaiser Rd	64.2	51.9	56.1	65.1
21	S Walker Ln	Farmington Rd to E Charter Way	61.1	49.5	54.0	62.2
22	Gillis Rd	Farmington Rd to E Charter Way	63.4	51.8	56.3	64.5
23	Austin Rd	S. of Arch Rd.	53.2	41.6	46.1	54.2
24	Kaiser Rd	Farmington Rd to E. Mariposa Rd	56.4	44.8	49.3	57.4
25	Jack Tone Rd	N. of Farmington Rd	58.5	46.8	51.3	59.5
26	Jack Tone Rd	S. of E Mariposa Rd	55.2	43.6	48.1	56.2

Appendix C-3

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Contour Output

Project #: 2005-075
Description: Mariposa Lakes EIR - Existing + Approved + Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment Description	75	70	65	60	55
1	East Charter Way	East of Mariposa Rd.	16	34	72	156	336
2	East Main St.	West of E. Charter	17	36	77	165	356
3	East Main St.	E. Charter to E. South Walker Ln	25	53	114	246	531
4	East Main St.	S. Walker to Gillis	18	40	85	184	396
5	E. 8th St.	W.of East Mariposa Rd.	21	45	98	211	455
6	Farmington Rd.	SR 99 NB to S. Walker	15	32	69	149	322
7	Farmington Rd.	S. Walker to Gillis	8	17	37	79	170
8	Farmington Rd.	Gillis to Kaiser Rd.	27	58	124	268	578
9	Farmington Rd.	Kaiser Rd. to Jack Tone Rd.	25	53	115	247	532
10	Carpenter Rd	West of E. Mariposa	10	21	46	99	213
11	Carpenter Rd	East of E. Mariposa	3	7	14	30	65
12	Arch Rd	SR99 to Newcastle Rd.	34	73	157	339	730
13	Arch Rd	Newcastel Rd to Austin Rd	27	58	125	269	580
14	E. Mariposa Rd	E Charter Way to E 8th St	26	56	121	261	563
15	E. Mariposa Rd	E. 8th St to SR 99 SB Ramps	30	65	141	304	654
16	E. Mariposa Rd	SR 99 SB Ramps to SR 99 NB Ramps	37	81	174	375	808
17	E. Mariposa Rd	SR 99 NB off Ramp to Stagecoach Rd	53	114	245	527	1136
18	E. Mariposa Rd	Stagecoach Rd to Carpenter Rd	43	93	200	430	926
19	E. Mariposa Rd	Carpenter Rd to Austin Rd	35	76	164	353	760
20	E. Mariposa Rd	Austin Rd to Kaiser Rd	22	47	101	217	468
21	S Walker Ln	Farmington Rd to E Charter Way	14	30	65	139	300
22	Gillis Rd	Farmington Rd to E Charter Way	20	43	92	198	427
23	Austin Rd	S. of Arch Rd.	4	9	19	41	89
24	Kaiser Rd	Farmington Rd to E. Mariposa Rd	7	15	31	68	146
25	Jack Tone Rd	N. of Farmington Rd	9	20	43	93	200
26	Jack Tone Rd	S. of E Mariposa Rd	6	12	26	56	121

Appendix D-1

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2005-075
Description: Mariposa Lakes EIR - Existing + Approved + Phase 1
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance
1	East Charter Way	East of Mariposa Rd.	8,120	83		17	1	1	45	100
2	East Main St.	West of E. Charter	10,725	83		17	1	1	45	100
3	East Main St.	E. Charter to E. South Walker Ln	8,550	83		17	1	1	45	100
4	East Main St.	S. Walker to Gillis	4,775	83		17	1	1	45	100
5	E. 8th St.	W.of East Mariposa Rd.	9,930	83		17	1	1	45	100
6	Farmington Rd.	SR 99 NB to S. Walker	24,005	83		17	1	5	45	100
7	Farmington Rd.	S. Walker to Gillis	9,170	83		17	1	5	55	100
8	Farmington Rd.	Gillis to Kaiser Rd.	9,010	83		17	1	5	55	100
9	Farmington Rd.	Kaiser Rd. to Jack Tone Rd.	7,070	83		17	1	5	55	100
10	Carpenter Rd	West of E. Mariposa	4,595	83		17	1	1	45	100
11	Carpenter Rd	East of E. Mariposa	660	83		17	1	1	45	100
12	Arch Rd	SR99 to Newcastle Rd.	32,600	83		17	1	1	45	100
13	Arch Rd	Newcastel Rd to Austin Rd	23,455	83		17	1	1	45	100
14	E. Mariposa Rd	E Charter Way to E 8th St	18,295	83		17	1	1	45	100
15	E. Mariposa Rd	E. 8th St to SR 99 SB Ramps	19,720	83		17	1	1	45	100
16	E. Mariposa Rd	SR 99 SB Ramps to SR 99 NB Ramps	17,300	83		17	1	1	45	100
17	E. Mariposa Rd	SR 99 NB off Ramp to Stagecoach Rd	19,930	83		17	1	1	45	100
18	E. Mariposa Rd	Stagecoach Rd to Carpenter Rd	23,220	83		17	1	1	50	100
19	E. Mariposa Rd	Carpenter Rd to Austin Rd	19,035	83		17	1	1	50	100
20	E. Mariposa Rd	Austin Rd to Kaiser Rd	10,230	83		17	1	1	50	100
21	S Walker Ln	Farmington Rd to E Charter Way	4,795	83		17	1	1	45	100
22	Gillis Rd	Farmington Rd to E Charter Way	325	83		17	1	1	45	100
23	Austin Rd	S. of Arch Rd.	1,905	83		17	1	1	45	100
24	Kaiser Rd	Farmington Rd to E. Mariposa Rd	2,845	83		17	1	1	45	100
25	Jack Tone Rd	N. of Farmington Rd	2,575	83		17	1	1	45	100
26	Jack Tone Rd	S. of E Mariposa Rd	1,580	83		17	1	1	45	100

Appendix D-2

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project #: 2005-075
Description: Mariposa Lakes EIR - Existing + Approved + Phase 1
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	East Charter Way	East of Mariposa Rd.	60.9	49.3	53.8	61.9
2	East Main St.	West of E. Charter	62.1	50.5	55.0	63.2
3	East Main St.	E. Charter to E. South Walker Ln	61.2	49.5	54.0	62.2
4	East Main St.	S. Walker to Gillis	58.6	47.0	51.5	59.6
5	E. 8th St.	W.of East Mariposa Rd.	61.8	50.2	54.6	62.8
6	Farmington Rd.	SR 99 NB to S. Walker	65.5	54.0	65.5	68.6
7	Farmington Rd.	S. Walker to Gillis	63.8	51.2	62.1	66.2
8	Farmington Rd.	Gillis to Kaiser Rd.	63.7	51.1	62.0	66.1
9	Farmington Rd.	Kaiser Rd. to Jack Tone Rd.	62.7	50.0	61.0	65.0
10	Carpenter Rd	West of E. Mariposa	58.5	46.8	51.3	59.5
11	Carpenter Rd	East of E. Mariposa	50.0	38.4	42.9	51.0
12	Arch Rd	SR99 to Newcastle Rd.	67.0	55.3	59.8	68.0
13	Arch Rd	Newcastel Rd to Austin Rd	65.5	53.9	58.4	66.6
14	E. Mariposa Rd	E Charter Way to E 8th St	64.5	52.8	57.3	65.5
15	E. Mariposa Rd	E. 8th St to SR 99 SB Ramps	64.8	53.1	57.6	65.8
16	E. Mariposa Rd	SR 99 SB Ramps to SR 99 NB Ramps	64.2	52.6	57.1	65.2
17	E. Mariposa Rd	SR 99 NB off Ramp to Stagecoach Rd	64.8	53.2	57.7	65.8
18	E. Mariposa Rd	Stagecoach Rd to Carpenter Rd	66.8	54.6	58.8	67.7
19	E. Mariposa Rd	Carpenter Rd to Austin Rd	66.0	53.7	57.9	66.8
20	E. Mariposa Rd	Austin Rd to Kaiser Rd	63.3	51.0	55.2	64.1
21	S Walker Ln	Farmington Rd to E Charter Way	58.7	47.0	51.5	59.7
22	Gillis Rd	Farmington Rd to E Charter Way	47.0	35.3	39.8	48.0
23	Austin Rd	S. of Arch Rd.	54.6	43.0	47.5	55.6
24	Kaiser Rd	Farmington Rd to E. Mariposa Rd	56.4	44.7	49.2	57.4
25	Jack Tone Rd	N. of Farmington Rd	56.0	44.3	48.8	57.0
26	Jack Tone Rd	S. of E Mariposa Rd	53.8	42.2	46.7	54.8

Appendix D-3

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Contour Output

Project #: 2005-075
Description: Mariposa Lakes EIR - Existing + Approved + Phase 1
Ldn/CNEL: Ldn
Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment Description	75	70	65	60	55
1	East Charter Way	East of Mariposa Rd.	13	29	63	135	290
2	East Main St.	West of E. Charter	16	35	75	162	350
3	East Main St.	E. Charter to E. South Walker Ln	14	30	65	140	301
4	East Main St.	S. Walker to Gillis	9	20	44	95	204
5	E. 8th St.	W.of East Mariposa Rd.	15	33	72	154	332
6	Farmington Rd.	SR 99 NB to S. Walker	38	81	175	376	811
7	Farmington Rd.	S. Walker to Gillis	26	56	120	258	556
8	Farmington Rd.	Gillis to Kaiser Rd.	26	55	118	255	550
9	Farmington Rd.	Kaiser Rd. to Jack Tone Rd.	22	47	101	217	468
10	Carpenter Rd	West of E. Mariposa	9	20	43	92	199
11	Carpenter Rd	East of E. Mariposa	3	5	12	25	54
12	Arch Rd	SR99 to Newcastle Rd.	34	73	158	341	734
13	Arch Rd	Newcastel Rd to Austin Rd	27	59	127	273	589
14	E. Mariposa Rd	E Charter Way to E 8th St	23	50	108	232	499
15	E. Mariposa Rd	E. 8th St to SR 99 SB Ramps	24	52	113	244	525
16	E. Mariposa Rd	SR 99 SB Ramps to SR 99 NB Ramps	22	48	104	223	481
17	E. Mariposa Rd	SR 99 NB off Ramp to Stagecoach Rd	25	53	114	245	528
18	E. Mariposa Rd	Stagecoach Rd to Carpenter Rd	32	70	151	325	699
19	E. Mariposa Rd	Carpenter Rd to Austin Rd	28	61	132	284	612
20	E. Mariposa Rd	Austin Rd to Kaiser Rd	19	40	87	188	405
21	S Walker Ln	Farmington Rd to E Charter Way	9	20	44	95	204
22	Gillis Rd	Farmington Rd to E Charter Way	2	3	7	16	34
23	Austin Rd	S. of Arch Rd.	5	11	24	51	110
24	Kaiser Rd	Farmington Rd to E. Mariposa Rd	7	14	31	67	144
25	Jack Tone Rd	N. of Farmington Rd	6	14	29	63	135
26	Jack Tone Rd	S. of E Mariposa Rd	5	10	21	45	98

Appendix E-1

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Data Input Sheet

Project #: 2005-075
Description: Mariposa Lakes EIR - 1990GP No Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance
1	East Charter Way	East of Mariposa Rd.	20,300	83		17	1	1	45	100
2	East Main St.	West of E. Charter	11,615	83		17	1	1	45	100
3	East Main St.	E. Charter to E. South Walker Ln	8,915	83		17	1	1	45	100
4	East Main St.	S. Walker to Gillis	7,185	83		17	1	1	45	100
5	E. 8th St.	W.of East Mariposa Rd.	13,835	83		17	1	1	45	100
6	Farmington Rd.	SR 99 NB to S. Walker	14,060	83		17	1	5	45	100
7	Farmington Rd.	S. Walker to Gillis	5,580	83		17	1	5	55	100
8	Farmington Rd.	Gillis to Kaiser Rd.	3,730	83		17	1	5	55	100
9	Farmington Rd.	Kaiser Rd. to Jack Tone Rd.	3,270	83		17	1	5	55	100
10	Carpenter Rd	West of E. Mariposa	11,530	83		17	1	1	45	100
11	Carpenter Rd	East of E. Mariposa	950	83		17	1	1	45	100
12	Arch Rd	SR99 to Newcastle Rd.	23,040	83		17	1	1	45	100
13	Arch Rd	Newcastel Rd to Austin Rd	6,855	83		17	1	1	45	100
14	E. Mariposa Rd	E Charter Way to E 8th St	23,020	83		17	1	1	45	100
15	E. Mariposa Rd	E. 8th St to SR 99 SB Ramps	22,395	83		17	1	1	45	100
16	E. Mariposa Rd	SR 99 SB Ramps to SR 99 NB Ramps	29,630	83		17	1	1	45	100
17	E. Mariposa Rd	SR 99 NB off Ramp to Stagecoach Rd	39,210	83		17	1	1	45	100
18	E. Mariposa Rd	Stagecoach Rd to Carpenter Rd	36,725	83		17	1	1	50	100
19	E. Mariposa Rd	Carpenter Rd to Austin Rd	23,710	83		17	1	1	50	100
20	E. Mariposa Rd	Austin Rd to Kaiser Rd	12,320	83		17	1	1	50	100
21	S Walker Ln	Farmington Rd to E Charter Way	6,915	83		17	1	1	45	100
22	Gillis Rd	Farmington Rd to E Charter Way	5,865	83		17	1	1	45	100
23	Austin Rd	S. of Arch Rd.	1,655	83		17	1	1	45	100
24	Kaiser Rd	Farmington Rd to E. Mariposa Rd	1,315	83		17	1	1	45	100
25	Jack Tone Rd	N. of Farmington Rd	7,815	83		17	1	1	45	100
26	Jack Tone Rd	S. of E Mariposa Rd	2,635	83		17	1	1	45	100

Appendix E-2

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project #: 2005-075
Description: Mariposa Lakes EIR - 1990GP No Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	East Charter Way	East of Mariposa Rd.	64.9	53.3	57.8	65.9
2	East Main St.	West of E. Charter	62.5	50.8	55.3	63.5
3	East Main St.	E. Charter to E. South Walker Ln	61.3	49.7	54.2	62.4
4	East Main St.	S. Walker to Gillis	60.4	48.7	53.2	61.4
5	E. 8th St.	W.of East Mariposa Rd.	63.3	51.6	56.1	64.3
6	Farmington Rd.	SR 99 NB to S. Walker	63.1	51.7	63.1	66.3
7	Farmington Rd.	S. Walker to Gillis	61.6	49.0	59.9	64.0
8	Farmington Rd.	Gillis to Kaiser Rd.	59.9	47.3	58.2	62.3
9	Farmington Rd.	Kaiser Rd. to Jack Tone Rd.	59.3	46.7	57.6	61.7
10	Carpenter Rd	West of E. Mariposa	62.5	50.8	55.3	63.5
11	Carpenter Rd	East of E. Mariposa	51.6	40.0	44.5	52.6
12	Arch Rd	SR99 to Newcastle Rd.	65.5	53.8	58.3	66.5
13	Arch Rd	Newcastel Rd to Austin Rd	60.2	48.5	53.0	61.2
14	E. Mariposa Rd	E Charter Way to E 8th St	65.5	53.8	58.3	66.5
15	E. Mariposa Rd	E. 8th St to SR 99 SB Ramps	65.3	53.7	58.2	66.4
16	E. Mariposa Rd	SR 99 SB Ramps to SR 99 NB Ramps	66.6	54.9	59.4	67.6
17	E. Mariposa Rd	SR 99 NB off Ramp to Stagecoach Rd	67.8	56.1	60.6	68.8
18	E. Mariposa Rd	Stagecoach Rd to Carpenter Rd	68.8	56.5	60.8	69.7
19	E. Mariposa Rd	Carpenter Rd to Austin Rd	66.9	54.6	58.8	67.8
20	E. Mariposa Rd	Austin Rd to Kaiser Rd	64.1	51.8	56.0	64.9
21	S Walker Ln	Farmington Rd to E Charter Way	60.2	48.6	53.1	61.2
22	Gillis Rd	Farmington Rd to E Charter Way	59.5	47.9	52.4	60.5
23	Austin Rd	S. of Arch Rd.	54.0	42.4	46.9	55.0
24	Kaiser Rd	Farmington Rd to E. Mariposa Rd	53.0	41.4	45.9	54.0
25	Jack Tone Rd	N. of Farmington Rd	60.8	49.1	53.6	61.8
26	Jack Tone Rd	S. of E Mariposa Rd	56.1	44.4	48.9	57.1

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Appendix E-3

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Contour Output

Project #: 2005-075
Description: Mariposa Lakes EIR - 1990GP No Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment Description	75	70	65	60	55
1	East Charter Way	East of Mariposa Rd.	25	53	115	248	535
2	East Main St.	West of E. Charter	17	37	79	171	369
3	East Main St.	E. Charter to E. South Walker Ln	14	31	67	143	309
4	East Main St.	S. Walker to Gillis	12	27	58	124	268
5	E. 8th St.	W.of East Mariposa Rd.	19	41	89	192	414
6	Farmington Rd.	SR 99 NB to S. Walker	26	57	122	263	567
7	Farmington Rd.	S. Walker to Gillis	19	40	86	185	399
8	Farmington Rd.	Gillis to Kaiser Rd.	14	31	66	142	305
9	Farmington Rd.	Kaiser Rd. to Jack Tone Rd.	13	28	60	130	280
10	Carpenter Rd	West of E. Mariposa	17	37	79	170	367
11	Carpenter Rd	East of E. Mariposa	3	7	15	32	69
12	Arch Rd	SR99 to Newcastle Rd.	27	58	125	270	582
13	Arch Rd	Newcastel Rd to Austin Rd	12	26	56	120	259
14	E. Mariposa Rd	E Charter Way to E 8th St	27	58	125	270	582
15	E. Mariposa Rd	E. 8th St to SR 99 SB Ramps	27	57	123	265	571
16	E. Mariposa Rd	SR 99 SB Ramps to SR 99 NB Ramps	32	69	148	320	688
17	E. Mariposa Rd	SR 99 NB off Ramp to Stagecoach Rd	39	83	179	385	830
18	E. Mariposa Rd	Stagecoach Rd to Carpenter Rd	44	95	205	441	949
19	E. Mariposa Rd	Carpenter Rd to Austin Rd	33	71	153	329	709
20	E. Mariposa Rd	Austin Rd to Kaiser Rd	21	46	99	213	458
21	S Walker Ln	Farmington Rd to E Charter Way	12	26	56	121	261
22	Gillis Rd	Farmington Rd to E Charter Way	11	23	50	109	234
23	Austin Rd	S. of Arch Rd.	5	10	22	47	101
24	Kaiser Rd	Farmington Rd to E. Mariposa Rd	4	9	19	40	86
25	Jack Tone Rd	N. of Farmington Rd	13	28	61	131	283
26	Jack Tone Rd	S. of E Mariposa Rd	6	14	30	64	137

Appendix F-1

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Data Input Sheet

Project #: 2005-075
Description: Mariposa Lakes EIR - 1990GP + Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance
1	East Charter Way	East of Mariposa Rd.	11,190	83		17	1	1	45	100
2	East Main St.	West of E. Charter	14,875	83		17	1	1	45	100
3	East Main St.	E. Charter to E. South Walker Ln	14,860	83		17	1	1	45	100
4	East Main St.	S. Walker to Gillis	13,305	83		17	1	1	45	100
5	E. 8th St.	W.of East Mariposa Rd.	15,380	83		17	1	1	45	100
6	Farmington Rd.	SR 99 NB to S. Walker	17,855	83		17	1	5	45	100
7	Farmington Rd.	S. Walker to Gillis	3,460	83		17	1	5	55	100
8	Farmington Rd.	Gillis to Kaiser Rd.	5,980	83		17	1	5	55	100
9	Farmington Rd.	Kaiser Rd. to Jack Tone Rd.	4,880	83		17	1	5	55	100
10	Carpenter Rd	West of E. Mariposa	11,660	83		17	1	1	45	100
11	Carpenter Rd	East of E. Mariposa	325	83		17	1	1	45	100
12	Arch Rd	SR99 to Newcastle Rd.	32,270	83		17	1	1	45	100
13	Arch Rd	Newcastel Rd to Austin Rd	22,250	83		17	1	1	45	100
14	E. Mariposa Rd	E Charter Way to E 8th St	20,930	83		17	1	1	45	100
15	E. Mariposa Rd	E. 8th St to SR 99 SB Ramps	22,305	83		17	1	1	45	100
16	E. Mariposa Rd	SR 99 SB Ramps to SR 99 NB Ramps	39,965	83		17	1	1	45	100
17	E. Mariposa Rd	SR 99 NB off Ramp to Stagecoach Rd	62,865	83		17	1	1	45	100
18	E. Mariposa Rd	Stagecoach Rd to Carpenter Rd	35,210	83		17	1	1	50	100
19	E. Mariposa Rd	Carpenter Rd to Austin Rd	35,055	83		17	1	1	50	100
20	E. Mariposa Rd	Austin Rd to Kaiser Rd	11,130	83		17	1	1	50	100
21	S Walker Ln	Farmington Rd to E Charter Way	7,435	83		17	1	1	45	100
22	Gillis Rd	Farmington Rd to E Charter Way	19,820	83		17	1	1	45	100
23	Austin Rd	S. of Arch Rd.	785	83		17	1	1	45	100
24	Kaiser Rd	Farmington Rd to E. Mariposa Rd	3,085	83		17	1	1	45	100
25	Jack Tone Rd	N. of Farmington Rd	7,435	83		17	1	1	45	100
26	Jack Tone Rd	S. of E Mariposa Rd	1,340	83		17	1	1	45	100

Appendix F-2

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project #: 2005-075
Description: Mariposa Lakes EIR - 1990GP + Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	East Charter Way	East of Mariposa Rd.	62.3	50.7	55.2	63.3
2	East Main St.	West of E. Charter	63.6	51.9	56.4	64.6
3	East Main St.	E. Charter to E. South Walker Ln	63.6	51.9	56.4	64.6
4	East Main St.	S. Walker to Gillis	63.1	51.4	55.9	64.1
5	E. 8th St.	W.of East Mariposa Rd.	63.7	52.1	56.5	64.7
6	Farmington Rd.	SR 99 NB to S. Walker	64.2	52.7	64.2	67.3
7	Farmington Rd.	S. Walker to Gillis	59.6	46.9	57.9	61.9
8	Farmington Rd.	Gillis to Kaiser Rd.	61.9	49.3	60.2	64.3
9	Farmington Rd.	Kaiser Rd. to Jack Tone Rd.	61.1	48.4	59.4	63.4
10	Carpenter Rd	West of E. Mariposa	62.5	50.8	55.3	63.5
11	Carpenter Rd	East of E. Mariposa	47.0	35.3	39.8	48.0
12	Arch Rd	SR99 to Newcastle Rd.	66.9	55.3	59.8	67.9
13	Arch Rd	Newcastel Rd to Austin Rd	65.3	53.7	58.2	66.3
14	E. Mariposa Rd	E Charter Way to E 8th St	65.1	53.4	57.9	66.1
15	E. Mariposa Rd	E. 8th St to SR 99 SB Ramps	65.3	53.7	58.2	66.3
16	E. Mariposa Rd	SR 99 SB Ramps to SR 99 NB Ramps	67.9	56.2	60.7	68.9
17	E. Mariposa Rd	SR 99 NB off Ramp to Stagecoach Rd	69.8	58.2	62.7	70.8
18	E. Mariposa Rd	Stagecoach Rd to Carpenter Rd	68.6	56.4	60.6	69.5
19	E. Mariposa Rd	Carpenter Rd to Austin Rd	68.6	56.3	60.5	69.5
20	E. Mariposa Rd	Austin Rd to Kaiser Rd	63.6	51.4	55.6	64.5
21	S Walker Ln	Farmington Rd to E Charter Way	60.6	48.9	53.4	61.6
22	Gillis Rd	Farmington Rd to E Charter Way	64.8	53.2	57.7	65.8
23	Austin Rd	S. of Arch Rd.	50.8	39.1	43.6	51.8
24	Kaiser Rd	Farmington Rd to E. Mariposa Rd	56.7	45.1	49.6	57.7
25	Jack Tone Rd	N. of Farmington Rd	60.6	48.9	53.4	61.6
26	Jack Tone Rd	S. of E Mariposa Rd	53.1	41.5	46.0	54.1

Appendix F-3

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Contour Output

Project #: 2005-075
Description: Mariposa Lakes EIR - 1990GP + Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment Description	75	70	65	60	55
1	East Charter Way	East of Mariposa Rd.	17	36	77	167	360
2	East Main St.	West of E. Charter	20	43	94	202	435
3	East Main St.	E. Charter to E. South Walker Ln	20	43	94	202	435
4	East Main St.	S. Walker to Gillis	19	40	87	187	404
5	E. 8th St.	W.of East Mariposa Rd.	21	44	96	206	445
6	Farmington Rd.	SR 99 NB to S. Walker	31	67	143	309	665
7	Farmington Rd.	S. Walker to Gillis	13	29	63	135	290
8	Farmington Rd.	Gillis to Kaiser Rd.	19	42	90	194	418
9	Farmington Rd.	Kaiser Rd. to Jack Tone Rd.	17	37	79	170	365
10	Carpenter Rd	West of E. Mariposa	17	37	80	172	370
11	Carpenter Rd	East of E. Mariposa	2	3	7	16	34
12	Arch Rd	SR99 to Newcastle Rd.	34	73	157	338	729
13	Arch Rd	Newcastel Rd to Austin Rd	26	57	123	264	569
14	E. Mariposa Rd	E Charter Way to E 8th St	25	55	118	253	546
15	E. Mariposa Rd	E. 8th St to SR 99 SB Ramps	26	57	123	264	570
16	E. Mariposa Rd	SR 99 SB Ramps to SR 99 NB Ramps	39	84	181	390	840
17	E. Mariposa Rd	SR 99 NB off Ramp to Stagecoach Rd	53	114	245	528	1137
18	E. Mariposa Rd	Stagecoach Rd to Carpenter Rd	43	92	199	428	923
19	E. Mariposa Rd	Carpenter Rd to Austin Rd	43	92	198	427	920
20	E. Mariposa Rd	Austin Rd to Kaiser Rd	20	43	92	199	428
21	S Walker Ln	Farmington Rd to E Charter Way	13	27	59	127	274
22	Gillis Rd	Farmington Rd to E Charter Way	24	53	113	244	526
23	Austin Rd	S. of Arch Rd.	3	6	13	28	61
24	Kaiser Rd	Farmington Rd to E. Mariposa Rd	7	15	33	71	152
25	Jack Tone Rd	N. of Farmington Rd	13	27	59	127	274
26	Jack Tone Rd	S. of E Mariposa Rd	4	9	19	41	87

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Appendix G-1

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2005-075
Description: Mariposa Lakes EIR - 2035GP No Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance
1	East Charter Way	East of Mariposa Rd.	15,935	83		17	1	1	45	100
2	East Main St.	West of E. Charter	12,770	83		17	1	1	45	100
3	East Main St.	E. Charter to E. South Walker Ln	10,485	83		17	1	1	45	100
4	East Main St.	S. Walker to Gillis	3,560	83		17	1	1	45	100
5	E. 8th St.	W.of East Mariposa Rd.	16,410	83		17	1	1	45	100
6	Farmington Rd.	SR 99 NB to S. Walker	27,260	83		17	1	5	45	100
7	Farmington Rd.	S. Walker to Gillis	21,540	83		17	1	5	55	100
8	Farmington Rd.	Gillis to Kaiser Rd.	14,520	83		17	1	5	55	100
9	Farmington Rd.	Kaiser Rd. to Jack Tone Rd.	14,120	83		17	1	5	55	100
10	Carpenter Rd	West of E. Mariposa	2,625	83		17	1	1	45	100
11	Carpenter Rd	East of E. Mariposa	7,035	83		17	1	1	45	100
12	Arch Rd	SR99 to Newcastle Rd.	42,155	83		17	1	1	45	100
13	Arch Rd	Newcastel Rd to Austin Rd	20,390	83		17	1	1	45	100
14	E. Mariposa Rd	E Charter Way to E 8th St	31,685	83		17	1	1	45	100
15	E. Mariposa Rd	E. 8th St to SR 99 SB Ramps	24,790	83		17	1	1	45	100
16	E. Mariposa Rd	SR 99 SB Ramps to SR 99 NB Ramps	36,215	83		17	1	1	45	100
17	E. Mariposa Rd	SR 99 NB off Ramp to Stagecoach Rd	55,595	83		17	1	1	45	100
18	E. Mariposa Rd	Stagecoach Rd to Carpenter Rd	55,105	83		17	1	1	50	100
19	E. Mariposa Rd	Carpenter Rd to Austin Rd	46,730	83		17	1	1	50	100
20	E. Mariposa Rd	Austin Rd to Kaiser Rd	31,790	83		17	1	1	50	100
21	S Walker Ln	Farmington Rd to E Charter Way	6,080	83		17	1	1	45	100
22	Gillis Rd	Farmington Rd to E Charter Way	16,170	83		17	1	1	45	100
23	Austin Rd	S. of Arch Rd.	14,860	83		17	1	1	45	100
24	Kaiser Rd	Farmington Rd to E. Mariposa Rd	800	83		17	1	1	45	100
25	Jack Tone Rd	N. of Farmington Rd	1,575	83		17	1	1	45	100
26	Jack Tone Rd	S. of E Mariposa Rd	1,320	83		17	1	1	45	100

Appendix G-2

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project #: 2005-075
Description: Mariposa Lakes EIR - 2035GP No Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	East Charter Way	East of Mariposa Rd.	63.9	52.2	56.7	64.9
2	East Main St.	West of E. Charter	62.9	51.2	55.7	63.9
3	East Main St.	E. Charter to E. South Walker Ln	62.1	50.4	54.9	63.1
4	East Main St.	S. Walker to Gillis	57.4	45.7	50.2	58.4
5	E. 8th St.	W.of East Mariposa Rd.	64.0	52.3	56.8	65.0
6	Farmington Rd.	SR 99 NB to S. Walker	66.0	54.5	66.0	69.2
7	Farmington Rd.	S. Walker to Gillis	67.5	54.9	65.8	69.9
8	Farmington Rd.	Gillis to Kaiser Rd.	65.8	53.2	64.1	68.2
9	Farmington Rd.	Kaiser Rd. to Jack Tone Rd.	65.7	53.0	64.0	68.1
10	Carpenter Rd	West of E. Mariposa	56.0	44.4	48.9	57.0
11	Carpenter Rd	East of E. Mariposa	60.3	48.7	53.2	61.3
12	Arch Rd	SR99 to Newcastle Rd.	68.1	56.4	60.9	69.1
13	Arch Rd	Newcastel Rd to Austin Rd	64.9	53.3	57.8	65.9
14	E. Mariposa Rd	E Charter Way to E 8th St	66.9	55.2	59.7	67.9
15	E. Mariposa Rd	E. 8th St to SR 99 SB Ramps	65.8	54.1	58.6	66.8
16	E. Mariposa Rd	SR 99 SB Ramps to SR 99 NB Ramps	67.4	55.8	60.3	68.4
17	E. Mariposa Rd	SR 99 NB off Ramp to Stagecoach Rd	69.3	57.6	62.1	70.3
18	E. Mariposa Rd	Stagecoach Rd to Carpenter Rd	70.6	58.3	62.5	71.4
19	E. Mariposa Rd	Carpenter Rd to Austin Rd	69.9	57.6	61.8	70.7
20	E. Mariposa Rd	Austin Rd to Kaiser Rd	68.2	55.9	60.1	69.0
21	S Walker Ln	Farmington Rd to E Charter Way	59.7	48.0	52.5	60.7
22	Gillis Rd	Farmington Rd to E Charter Way	63.9	52.3	56.8	64.9
23	Austin Rd	S. of Arch Rd.	63.6	51.9	56.4	64.6
24	Kaiser Rd	Farmington Rd to E. Mariposa Rd	50.9	39.2	43.7	51.9
25	Jack Tone Rd	N. of Farmington Rd	53.8	42.2	46.7	54.8
26	Jack Tone Rd	S. of E Mariposa Rd	53.1	41.4	45.9	54.1

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Appendix G-3

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Contour Output

Project #: 2005-075
Description: Mariposa Lakes EIR - 2035GP No Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment Description	75	70	65	60	55
1	East Charter Way	East of Mariposa Rd.	21	46	98	211	455
2	East Main St.	West of E. Charter	18	39	85	182	393
3	East Main St.	E. Charter to E. South Walker Ln	16	34	74	160	344
4	East Main St.	S. Walker to Gillis	8	17	36	78	168
5	E. 8th St.	W.of East Mariposa Rd.	22	46	100	215	464
6	Farmington Rd.	SR 99 NB to S. Walker	41	88	190	410	882
7	Farmington Rd.	S. Walker to Gillis	46	98	212	456	983
8	Farmington Rd.	Gillis to Kaiser Rd.	35	76	163	351	756
9	Farmington Rd.	Kaiser Rd. to Jack Tone Rd.	34	74	160	344	742
10	Carpenter Rd	West of E. Mariposa	6	14	29	63	137
11	Carpenter Rd	East of E. Mariposa	12	26	57	123	264
12	Arch Rd	SR99 to Newcastle Rd.	40	87	188	404	871
13	Arch Rd	Newcastel Rd to Austin Rd	25	54	116	249	537
14	E. Mariposa Rd	E Charter Way to E 8th St	33	72	155	334	720
15	E. Mariposa Rd	E. 8th St to SR 99 SB Ramps	28	61	132	284	611
16	E. Mariposa Rd	SR 99 SB Ramps to SR 99 NB Ramps	37	79	170	365	787
17	E. Mariposa Rd	SR 99 NB off Ramp to Stagecoach Rd	49	105	226	486	1047
18	E. Mariposa Rd	Stagecoach Rd to Carpenter Rd	58	124	268	577	1244
19	E. Mariposa Rd	Carpenter Rd to Austin Rd	52	111	240	517	1115
20	E. Mariposa Rd	Austin Rd to Kaiser Rd	40	86	186	400	862
21	S Walker Ln	Farmington Rd to E Charter Way	11	24	52	111	239
22	Gillis Rd	Farmington Rd to E Charter Way	21	46	99	213	460
23	Austin Rd	S. of Arch Rd.	20	43	94	202	435
24	Kaiser Rd	Farmington Rd to E. Mariposa Rd	3	6	13	29	62
25	Jack Tone Rd	N. of Farmington Rd	5	10	21	45	97
26	Jack Tone Rd	S. of E Mariposa Rd	4	9	19	40	87

Appendix H-1

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2005-075
Description: Mariposa Lakes EIR - 2035GP + Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance
1	East Charter Way	East of Mariposa Rd.	17,430	83		17	1	1	45	100
2	East Main St.	West of E. Charter	14,505	83		17	1	1	45	100
3	East Main St.	E. Charter to E. South Walker Ln	12,580	83		17	1	1	45	100
4	East Main St.	S. Walker to Gillis	6,955	83		17	1	1	45	100
5	E. 8th St.	W.of East Mariposa Rd.	12,795	83		17	1	1	45	100
6	Farmington Rd.	SR 99 NB to S. Walker	12,905	83		17	1	5	45	100
7	Farmington Rd.	S. Walker to Gillis	1,100	83		17	1	5	55	100
8	Farmington Rd.	Gillis to Kaiser Rd.	13,930	83		17	1	5	55	100
9	Farmington Rd.	Kaiser Rd. to Jack Tone Rd.	13,250	83		17	1	5	55	100
10	Carpenter Rd	West of E. Mariposa	11,550	83		17	1	1	45	100
11	Carpenter Rd	East of E. Mariposa	380	83		17	1	1	45	100
12	Arch Rd	SR99 to Newcastle Rd.	36,710	83		17	1	1	45	100
13	Arch Rd	Newcastel Rd to Austin Rd	29,880	83		17	1	1	45	100
14	E. Mariposa Rd	E Charter Way to E 8th St	29,305	83		17	1	1	45	100
15	E. Mariposa Rd	E. 8th St to SR 99 SB Ramps	28,460	83		17	1	1	45	100
16	E. Mariposa Rd	SR 99 SB Ramps to SR 99 NB Ramps	43,305	83		17	1	1	45	100
17	E. Mariposa Rd	SR 99 NB off Ramp to Stagecoach Rd	66,635	83		17	1	1	45	100
18	E. Mariposa Rd	Stagecoach Rd to Carpenter Rd	35,625	83		17	1	1	50	100
19	E. Mariposa Rd	Carpenter Rd to Austin Rd	26,755	83		17	1	1	50	100
20	E. Mariposa Rd	Austin Rd to Kaiser Rd	19,935	83		17	1	1	50	100
21	S Walker Ln	Farmington Rd to E Charter Way	5,040	83		17	1	1	45	100
22	Gillis Rd	Farmington Rd to E Charter Way	22,280	83		17	1	1	45	100
23	Austin Rd	S. of Arch Rd.	19,890	83		17	1	1	45	100
24	Kaiser Rd	Farmington Rd to E. Mariposa Rd	2,710	83		17	1	1	45	100
25	Jack Tone Rd	N. of Farmington Rd	3,045	83		17	1	1	45	100
26	Jack Tone Rd	S. of E Mariposa Rd	1,220	83		17	1	1	45	100

Appendix H-2

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project #: 2005-075
Description: Mariposa Lakes EIR - 2035GP + Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	East Charter Way	East of Mariposa Rd.	64.3	52.6	57.1	65.3
2	East Main St.	West of E. Charter	63.5	51.8	56.3	64.5
3	East Main St.	E. Charter to E. South Walker Ln	62.8	51.2	55.7	63.8
4	East Main St.	S. Walker to Gillis	60.3	48.6	53.1	61.3
5	E. 8th St.	W.of East Mariposa Rd.	62.9	51.3	55.8	63.9
6	Farmington Rd.	SR 99 NB to S. Walker	62.8	51.3	62.8	65.9
7	Farmington Rd.	S. Walker to Gillis	54.6	42.0	52.9	57.0
8	Farmington Rd.	Gillis to Kaiser Rd.	65.6	53.0	63.9	68.0
9	Farmington Rd.	Kaiser Rd. to Jack Tone Rd.	65.4	52.8	63.7	67.8
10	Carpenter Rd	West of E. Mariposa	62.5	50.8	55.3	63.5
11	Carpenter Rd	East of E. Mariposa	47.6	36.0	40.5	48.6
12	Arch Rd	SR99 to Newcastle Rd.	67.5	55.8	60.3	68.5
13	Arch Rd	Newcastel Rd to Austin Rd	66.6	54.9	59.4	67.6
14	E. Mariposa Rd	E Charter Way to E 8th St	66.5	54.9	59.3	67.5
15	E. Mariposa Rd	E. 8th St to SR 99 SB Ramps	66.4	54.7	59.2	67.4
16	E. Mariposa Rd	SR 99 SB Ramps to SR 99 NB Ramps	68.2	56.5	61.0	69.2
17	E. Mariposa Rd	SR 99 NB off Ramp to Stagecoach Rd	70.1	58.4	62.9	71.1
18	E. Mariposa Rd	Stagecoach Rd to Carpenter Rd	68.7	56.4	60.6	69.5
19	E. Mariposa Rd	Carpenter Rd to Austin Rd	67.4	55.2	59.4	68.3
20	E. Mariposa Rd	Austin Rd to Kaiser Rd	66.2	53.9	58.1	67.0
21	S Walker Ln	Farmington Rd to E Charter Way	58.9	47.2	51.7	59.9
22	Gillis Rd	Farmington Rd to E Charter Way	65.3	53.7	58.2	66.3
23	Austin Rd	S. of Arch Rd.	64.8	53.2	57.7	65.8
24	Kaiser Rd	Farmington Rd to E. Mariposa Rd	56.2	44.5	49.0	57.2
25	Jack Tone Rd	N. of Farmington Rd	56.7	45.0	49.5	57.7
26	Jack Tone Rd	S. of E Mariposa Rd	52.7	41.0	45.5	53.7

Appendix H-3

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Contour Output

Project #: 2005-075
Description: Mariposa Lakes EIR - 2035GP + Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	-------- Distances to Traffic Noise Contours -------- 75	70	65	60	55
1	East Charter Way	East of Mariposa Rd.	22	48	104	224	483
2	East Main St.	West of E. Charter	20	43	92	198	428
3	East Main St.	E. Charter to E. South Walker Ln	18	39	84	180	389
4	East Main St.	S. Walker to Gillis	12	26	56	122	262
5	E. 8th St.	W.of East Mariposa Rd.	18	39	85	183	393
6	Farmington Rd.	SR 99 NB to S. Walker	25	54	115	249	536
7	Farmington Rd.	S. Walker to Gillis	6	14	29	63	135
8	Farmington Rd.	Gillis to Kaiser Rd.	34	74	158	341	735
9	Farmington Rd.	Kaiser Rd. to Jack Tone Rd.	33	71	153	330	711
10	Carpenter Rd	West of E. Mariposa	17	37	79	170	367
11	Carpenter Rd	East of E. Mariposa	2	4	8	18	38
12	Arch Rd	SR99 to Newcastle Rd.	37	79	171	369	794
13	Arch Rd	Newcastel Rd to Austin Rd	32	69	149	321	692
14	E. Mariposa Rd	E Charter Way to E 8th St	32	68	147	317	683
15	E. Mariposa Rd	E. 8th St to SR 99 SB Ramps	31	67	144	311	670
16	E. Mariposa Rd	SR 99 SB Ramps to SR 99 NB Ramps	41	89	191	411	886
17	E. Mariposa Rd	SR 99 NB off Ramp to Stagecoach Rd	55	118	255	548	1182
18	E. Mariposa Rd	Stagecoach Rd to Carpenter Rd	43	93	200	432	930
19	E. Mariposa Rd	Carpenter Rd to Austin Rd	36	77	166	357	769
20	E. Mariposa Rd	Austin Rd to Kaiser Rd	29	63	136	293	632
21	S Walker Ln	Farmington Rd to E Charter Way	10	21	46	98	211
22	Gillis Rd	Farmington Rd to E Charter Way	26	57	123	264	569
23	Austin Rd	S. of Arch Rd.	24	53	114	245	528
24	Kaiser Rd	Farmington Rd to E. Mariposa Rd	6	14	30	65	140
25	Jack Tone Rd	N. of Farmington Rd	7	15	33	70	151
26	Jack Tone Rd	S. of E Mariposa Rd	4	8	18	38	82

Appendix I-1A

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Data Input Sheet

Project #: 2005-075
Description: 2035 + Project Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Austin Pkwy	South of Town Center Pkwy	26360	83		17	1	1	45	100	
2	Austin Pkwy	North of Town Center Pkwy	15910	83		17	1	1	45	70	
3	Austin Pkwy	NW of Swallow Tail Pkwy	16380	83		17	1	1	45	75	
4	Austin Pkwy	North of Viceroy Ave	14600	83		17	1	1	45	150	
5	Austin Pkwy	N of SR4 (Proposed)	11960	83		17	1	1	45	150	
6	Blue Copper Dr	SE of SR4 (Proposed)	10710	83		17	1	1	35	60	
7	Blue Copper Dr	NW of SR4 (Proposed)	7180	83		17	1	1	35	70	
8	Blue Copper Dr	SE of Orangge Sulpher	5290	83		17	1	1	35	70	
9	E. Mariposa	West Of Proj. Entrance	14570	83		17	1	1	50	175	
10	E. Mariposa	East of Proj. Entrance	14680	83		17	1	1	50	100	
11	Farmington Rd	West of Blue Copper Dr	11340	83		17	1	1	50	150	
12	Farmington Rd	East of Blue Copper Dr	11340	83		17	1	1	50	150	
13	Farmington Rd	North of SR4 (Proposed)	7840	83		17	1	1	50	100	
14	Farmington Rd/SR 4	East of Mourning Cloak Ln	17550	83		17	1	2	50	225	
15	Farmington Rd/ SR 4	East of Driveway 1	15160	83		17	1	2	50	225	
16	Mourning Cloak Ln	North of Tortoise Shell Ln East Side	4670	83		17	1	1	35	75	
17	Mourning Cloak Ln	North of Tortoise Shell Ln West Side	4670	83		17	1	1	35	130	
18	Orange Sulpher Rd	East of Austin Pkwy	4020	83		17	1	1	35	75	
19	Proj. Entrance	North Of E. Mariposa	8070	83		17	1	1	35	75	
20	Red Admiral Ave	East of Proj. Entrance	6050	83		17	1	1	35	75	
21	Red Admiral Ave	West Of Proj. Entrance	4310	83		17	1	1	35	75	
22	Red Admiral Ave	North of Town Center Pkwy	4700	83		17	1	1	35	75	
23	SR4 (Proposed)	E of Austin Pkwy N Side	28150	83		17	1	2	55	125	

Appendix I-2A

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project #: 2005-075
Description: 2035 + Project Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	Austin Pkwy	South of Town Center Pkwy	66.1	54.4	58.9	67
2	Austin Pkwy	North of Town Center Pkwy	66.2	54.5	59.0	67
3	Austin Pkwy	NW of Swallow Tail Pkwy	65.9	54.2	58.7	67
4	Austin Pkwy	North of Viceroy Ave	60.8	49.2	53.7	62
5	Austin Pkwy	N of SR4 (Proposed)	60.0	48.3	52.8	61
6	Blue Copper Dr	SE of SR4 (Proposed)	62.3	52.1	57.3	64
7	Blue Copper Dr	NW of SR4 (Proposed)	59.6	49.4	54.6	61
8	Blue Copper Dr	SE of Orangge Sulpher	58.3	48.0	53.2	60
9	E. Mariposa	West Of Proj. Entrance	61.2	48.9	53.1	62
10	E. Mariposa	East of Proj. Entrance	64.8	52.6	56.8	66
11	Farmington Rd	West of Blue Copper Dr	61.1	48.8	53.0	62
12	Farmington Rd	East of Blue Copper Dr	61.1	48.8	53.0	62
13	Farmington Rd	North of SR4 (Proposed)	62.1	49.8	54.0	63
14	Farmington Rd/SR 4	East of Mourning Cloak Ln	60.3	48.1	55.3	62
15	Farmington Rd/ SR 4	East of Driveway 1	59.6	47.4	54.6	61
16	Mourning Cloak Ln	North of Tortoise Shell Ln East Side	57.3	47.0	52.2	59
17	Mourning Cloak Ln	North of Tortoise Shell Ln West Side	53.7	43.5	48.7	55
18	Orange Sulpher Rd	East of Austin Pkwy	56.6	46.4	51.6	58
19	Proj. Entrance	North Of E. Mariposa	59.6	49.4	54.6	61
20	Red Admiral Ave	East of Proj. Entrance	58.4	48.2	53.4	60
21	Red Admiral Ave	West Of Proj. Entrance	56.9	46.7	51.9	58
22	Red Admiral Ave	North of Town Center Pkwy	57.3	47.1	52.3	59
23	SR4 (Proposed)	E of Austin Pkwy N Side	67.4	54.6	61.5	69

Appendix I-3A

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Contour Output

Project #: 2005-075
Description: 2035 + Project Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment Description	75	70	65	60	55
1	Austin Pkwy	South of Town Center Pkwy	30	64	137	296	637
2	Austin Pkwy	North of Town Center Pkwy	21	45	98	211	455
3	Austin Pkwy	NW of Swallow Tail Pkwy	22	46	100	215	464
4	Austin Pkwy	North of Viceroy Ave	20	43	93	199	429
5	Austin Pkwy	N of SR4 (Proposed)	17	38	81	175	376
6	Blue Copper Dr	SE of SR4 (Proposed)	11	23	50	108	232
7	Blue Copper Dr	NW of SR4 (Proposed)	8	18	38	83	178
8	Blue Copper Dr	SE of Orangge Sulpher	7	15	31	67	145
9	E. Mariposa	West Of Proj. Entrance	24	51	110	238	512
10	E. Mariposa	East of Proj. Entrance	24	52	111	239	515
11	Farmington Rd	West of Blue Copper Dr	20	43	93	201	434
12	Farmington Rd	East of Blue Copper Dr	20	43	93	201	434
13	Farmington Rd	North of SR4 (Proposed)	16	34	73	157	339
14	Farmington Rd/SR 4	East of Mourning Cloak Ln	29	63	135	290	626
15	Farmington Rd/ SR 4	East of Driveway 1	26	57	122	263	568
16	Mourning Cloak Ln	North of Tortoise Shell Ln East Side	6	13	29	62	134
17	Mourning Cloak Ln	North of Tortoise Shell Ln West Side	6	13	29	62	134
18	Orange Sulpher Rd	East of Austin Pkwy	6	12	26	56	121
19	Proj. Entrance	North Of E. Mariposa	9	19	41	89	192
20	Red Admiral Ave	East of Proj. Entrance	7	16	34	74	159
21	Red Admiral Ave	West Of Proj. Entrance	6	13	27	59	127
22	Red Admiral Ave	North of Town Center Pkwy	6	13	29	62	134
23	SR4 (Proposed)	E of Austin Pkwy N Side	46	100	215	464	999

Appendix I-1B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Data Input Sheet

Project #: 2005-075
Description: 2035 + Project Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
24	SR4 (Proposed)	E of Austin Pkwy S Side	28150	83		17	1	2	55	500	
25	SR4 (Proposed)	E of Blue Copper Dr N Side	14700	83		17	1	2	55	100	
26	SR4 (Proposed)	E of Blue Copper Dr S Side	14700	83		17	1	2	55	500	
27	SR4 (Proposed)	East of Farmington Rd	22340	83		17	1	2	55	250	
28	Swallow Tail Pkwy	NE of Town Center Pkwy	5010	83		17	1	1	35	75	
29	Swallow Tail Pkwy	NE of Austin Pkwy	12750	83		17	1	1	35	75	
30	Swallow Tail Pkwy	NE of Tortise Shell ln	6680	83		17	1	1	35	50	
31	Toroise Shell Ln	West of Red Admiral Ave	4180	83		17	1	1	35	75	
32	Town Center Pkwy	East of Austin Pkwy	8980	83		17	1	1	45	75	
33	Town Center Pkwy	West of Austin Pkwy	13670	83		17	1	1	45	80	
34	Town Center Pkwy	NW of Swallow Tail Pkwy	8510	83		17	1	1	45	90	
35	Viceroy Ave	East of Town Center Pkwy	7380	83		17	1	1	45	75	
36	Viceroy Ave	East of Tortoise Shell Pkwy North Side	4340	83		17	1	1	45	70	
37	Viceroy Ave	East of Tortoise Shell Pkwy South Side	4340	83		17	1	1	45	300	

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Appendix I-2B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project #: 2005-075
Description: 2035 + Project Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
24	SR4 (Proposed)	E of Austin Pkwy S Side	58.3	45.6	52.5	60
25	SR4 (Proposed)	E of Blue Copper Dr N Side	66.0	53.2	60.2	67
26	SR4 (Proposed)	E of Blue Copper Dr S Side	55.5	42.7	49.7	57
27	SR4 (Proposed)	East of Farmington Rd	61.8	49.1	56.0	63
28	Swallow Tail Pkwy	NE of Town Center Pkwy	57.6	47.4	52.5	59
29	Swallow Tail Pkwy	NE of Austin Pkwy	61.6	51.4	56.6	63
30	Swallow Tail Pkwy	NE of Tortise Shell ln	61.5	51.2	56.4	63
31	Toroise Shell Ln	West of Red Admiral Ave	56.8	46.6	51.8	58
32	Town Center Pkwy	East of Austin Pkwy	63.3	51.6	56.1	64
33	Town Center Pkwy	West of Austin Pkwy	64.7	53.0	57.5	66
34	Town Center Pkwy	NW of Swallow Tail Pkwy	61.8	50.2	54.7	63
35	Viceroy Ave	East of Town Center Pkwy	62.4	50.7	55.2	63
36	Viceroy Ave	East of Tortoise Shell Pkwy North Side	60.5	48.9	53.4	62
37	Viceroy Ave	East of Tortoise Shell Pkwy South Side	51.1	39.4	43.9	52

Appendix I-3B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Contour Output

Project #: 2005-075
Description: 2035 + Project Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment Description	75	70	65	60	55
24	SR4 (Proposed)	E of Austin Pkwy S Side	46	100	215	464	999
25	SR4 (Proposed)	E of Blue Copper Dr N Side	30	65	140	301	648
26	SR4 (Proposed)	E of Blue Copper Dr S Side	30	65	140	301	648
27	SR4 (Proposed)	East of Farmington Rd	40	86	184	397	856
28	Swallow Tail Pkwy	NE of Town Center Pkwy	6	14	30	65	140
29	Swallow Tail Pkwy	NE of Austin Pkwy	12	26	56	121	261
30	Swallow Tail Pkwy	NE of Tortise Shell In	8	17	37	79	170
31	Toroise Shell Ln	West of Red Admiral Ave	6	12	27	58	124
32	Town Center Pkwy	East of Austin Pkwy	14	31	67	144	311
33	Town Center Pkwy	West of Austin Pkwy	19	41	89	191	411
34	Town Center Pkwy	NW of Swallow Tail Pkwy	14	30	65	139	300
35	Viceroy Ave	East of Town Center Pkwy	13	27	59	126	272
36	Viceroy Ave	East of Tortoise Shell Pkwy North Si	9	19	41	89	191
37	Viceroy Ave	East of Tortoise Shell Pkwy South Si	9	19	41	89	191

Appendix J-1

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2005-075
Description 2035 + Project Traffic
Roadway Name: Austin Pkwy
Location(s): 1

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 66
Medium Truck L_{dn}, dB: 54
Heavy Truck L_{dn}, dB: 59

Site Geometry:

Receiver Description: South of Town Center Pkwy
Centerline to Barrier Distance (C_1): 75
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB				Barrier Breaks Line of Sight to...		
		Autos	Medium Trucks	Heavy Trucks	Total	Autos?	Medium Trucks?	Heavy Trucks?
6	6	60	49	54	**61**	Yes	Yes	Yes
7	7	59	48	53	**60**	Yes	Yes	Yes
8	8	58	47	53	**59**	Yes	Yes	Yes
9	9	57	45	52	**58**	Yes	Yes	Yes
10	10	56	45	51	**57**	Yes	Yes	Yes
11	11	55	44	50	**56**	Yes	Yes	Yes
12	12	54	43	49	**56**	Yes	Yes	Yes
13	13	54	42	48	**55**	Yes	Yes	Yes
14	14	53	41	47	**54**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix J-2

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2005-075
Description 2035 + Project Traffic
Roadway Name: Austin Pkwy
Location(s): 2

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 66
Medium Truck L_{dn}, dB: 55
Heavy Truck L_{dn}, dB: 59

Site Geometry:

Receiver Description: North of Town Center Pkwy
Centerline to Barrier Distance (C_1): 45
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to... Autos?	Medium Trucks?	Heavy Trucks?
6	6	59	48	54	**61**	Yes	Yes	No
7	7	58	47	54	**60**	Yes	Yes	Yes
8	8	57	46	53	**59**	Yes	Yes	Yes
9	9	56	45	52	**58**	Yes	Yes	Yes
10	10	55	44	51	**57**	Yes	Yes	Yes
11	11	54	43	50	**56**	Yes	Yes	Yes
12	12	53	42	49	**55**	Yes	Yes	Yes
13	13	53	42	48	**54**	Yes	Yes	Yes
14	14	52	41	47	**54**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix J-3

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2005-075
Description 2035 + Project Traffic
Roadway Name: Austin Pkwy
Location(s): 3

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 66
Medium Truck L_{dn}, dB: 54
Heavy Truck L_{dn}, dB: 59

Site Geometry:

Receiver Description: NW of Swallow Tail Pkwy
Centerline to Barrier Distance (C_1): 50
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to... Autos?	Medium Trucks?	Heavy Trucks?
6	6	59	48	54	**60**	Yes	Yes	No
7	7	58	47	53	**60**	Yes	Yes	Yes
8	8	57	46	53	**58**	Yes	Yes	Yes
9	9	56	45	51	**57**	Yes	Yes	Yes
10	10	55	44	50	**57**	Yes	Yes	Yes
11	11	54	43	49	**56**	Yes	Yes	Yes
12	12	53	42	48	**55**	Yes	Yes	Yes
13	13	53	41	48	**54**	Yes	Yes	Yes
14	14	52	41	47	**53**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix J-4

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2005-075
Description 2035 + Project Traffic
Roadway Name: Austin Pkwy
Location(s): 4

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 61
Medium Truck L_{dn}, dB: 49
Heavy Truck L_{dn}, dB: 54

Site Geometry:

Receiver Description: North of Viceroy Ave
Centerline to Barrier Distance (C_1): 125
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to... Autos?	Medium Trucks?	Heavy Trucks?
6	6	55	44	49	**56**	Yes	Yes	Yes
7	7	54	43	48	**55**	Yes	Yes	Yes
8	8	53	42	47	**54**	Yes	Yes	Yes
9	9	52	41	46	**53**	Yes	Yes	Yes
10	10	51	40	45	**52**	Yes	Yes	Yes
11	11	51	39	44	**52**	Yes	Yes	Yes
12	12	50	38	43	**51**	Yes	Yes	Yes
13	13	49	38	43	**50**	Yes	Yes	Yes
14	14	48	37	42	**49**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix J-5

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2005-075
Description 2035 + Project Traffic
Roadway Name: Austin Pkwy
Location(s): 5

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 60
Medium Truck L_{dn}, dB: 48
Heavy Truck L_{dn}, dB: 53

Site Geometry:

Receiver Description: N of SR4 (Proposed)
Centerline to Barrier Distance (C_1): 125
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB: Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to... Autos?	Medium Trucks?	Heavy Trucks?
6	6	54	43	48	**55**	Yes	Yes	Yes
7	7	53	42	47	**55**	Yes	Yes	Yes
8	8	52	41	46	**54**	Yes	Yes	Yes
9	9	51	40	45	**53**	Yes	Yes	Yes
10	10	50	39	45	**52**	Yes	Yes	Yes
11	11	50	38	44	**51**	Yes	Yes	Yes
12	12	49	37	43	**50**	Yes	Yes	Yes
13	13	48	37	42	**49**	Yes	Yes	Yes
14	14	47	36	41	**49**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix J-6

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2005-075
Description 2035 + Project Traffic
Roadway Name: Blue Copper Dr
Location(s): 6

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 62
Medium Truck L_{dn}, dB: 52
Heavy Truck L_{dn}, dB: 57

Site Geometry:

Receiver Description: SE of SR4 (Proposed)
Centerline to Barrier Distance (C_1): 35
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB				Barrier Breaks Line of Sight to...		
		Autos	Medium Trucks	Heavy Trucks	Total	Autos?	Medium Trucks?	Heavy Trucks?
6	6	55	46	52	**57**	Yes	Yes	No
7	7	54	44	52	**56**	Yes	Yes	Yes
8	8	53	43	51	**55**	Yes	Yes	Yes
9	9	52	42	50	**54**	Yes	Yes	Yes
10	10	51	41	49	**53**	Yes	Yes	Yes
11	11	50	40	48	**52**	Yes	Yes	Yes
12	12	49	40	47	**51**	Yes	Yes	Yes
13	13	48	39	46	**51**	Yes	Yes	Yes
14	14	48	38	45	**50**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix J-7

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2005-075
Description 2035 + Project Traffic
Roadway Name: Blue Copper Dr
Location(s): 7

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 60
Medium Truck L_{dn}, dB: 49
Heavy Truck L_{dn}, dB: 55

Site Geometry:

Receiver Description: NW of SR4 (Proposed)
Centerline to Barrier Distance (C_1): 45
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to... Autos?	Medium Trucks?	Heavy Trucks?
6	6	53	43	50	**55**	Yes	Yes	No
7	7	51	42	49	**54**	Yes	Yes	Yes
8	8	50	41	49	**53**	Yes	Yes	Yes
9	9	49	40	47	**52**	Yes	Yes	Yes
10	10	49	39	46	**51**	Yes	Yes	Yes
11	11	48	38	45	**50**	Yes	Yes	Yes
12	12	47	37	44	**49**	Yes	Yes	Yes
13	13	46	36	43	**48**	Yes	Yes	Yes
14	14	46	36	43	**48**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix J-8

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2005-075
Description 2035 + Project Traffic
Roadway Name: Blue Copper Dr
Location(s): 8

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 58
Medium Truck L_{dn}, dB: 48
Heavy Truck L_{dn}, dB: 53

Site Geometry:

Receiver Description: SE of Orangge Sulpher
Centerline to Barrier Distance (C_1): 45
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to... Autos?	Medium Trucks?	Heavy Trucks?
6	6	51	42	48	**53**	Yes	Yes	No
7	7	50	41	48	**53**	Yes	Yes	Yes
8	8	49	40	47	**52**	Yes	Yes	Yes
9	9	48	38	46	**50**	Yes	Yes	Yes
10	10	47	38	45	**50**	Yes	Yes	Yes
11	11	46	37	44	**49**	Yes	Yes	Yes
12	12	45	36	43	**48**	Yes	Yes	Yes
13	13	45	35	42	**47**	Yes	Yes	Yes
14	14	44	34	41	**46**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix J-9

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2005-075
Description 2035 + Project Traffic
Roadway Name: E. Mariposa
Location(s): 9

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 61
Medium Truck L_{dn}, dB: 49
Heavy Truck L_{dn}, dB: 53

Site Geometry:

Receiver Description: West Of Proj. Entrance
Centerline to Barrier Distance (C_1): 150
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to... Autos?	Medium Trucks?	Heavy Trucks?
6	6	56	43	48	**56**	Yes	Yes	Yes
7	7	55	43	48	**56**	Yes	Yes	Yes
8	8	54	42	47	**55**	Yes	Yes	Yes
9	9	53	41	46	**54**	Yes	Yes	Yes
10	10	52	40	45	**53**	Yes	Yes	Yes
11	11	51	39	44	**52**	Yes	Yes	Yes
12	12	50	38	43	**51**	Yes	Yes	Yes
13	13	49	38	42	**50**	Yes	Yes	Yes
14	14	49	37	42	**50**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix J-10

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2005-075
Description 2035 + Project Traffic
Roadway Name: E. Mariposa
Location(s): 10

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 65
Medium Truck L_{dn}, dB: 53
Heavy Truck L_{dn}, dB: 57

Site Geometry:

Receiver Description: East of Proj. Entrance
Centerline to Barrier Distance (C_1): 75
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to... Autos?	Medium Trucks?	Heavy Trucks?
6	6	59	47	52	**60**	Yes	Yes	Yes
7	7	58	46	51	**59**	Yes	Yes	Yes
8	8	57	45	51	**58**	Yes	Yes	Yes
9	9	56	44	49	**57**	Yes	Yes	Yes
10	10	55	43	48	**56**	Yes	Yes	Yes
11	11	54	42	47	**55**	Yes	Yes	Yes
12	12	53	41	46	**54**	Yes	Yes	Yes
13	13	52	40	46	**53**	Yes	Yes	Yes
14	14	52	40	45	**53**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix J-11

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2005-075
Description 2035 + Project Traffic
Roadway Name: Farmington Rd
Location(s): 11

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 61
Medium Truck L_{dn}, dB: 49
Heavy Truck L_{dn}, dB: 53

Site Geometry:

Receiver Description: West of Blue Copper Dr
Centerline to Barrier Distance (C_1): 125
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to... Autos?	Medium Trucks?	Heavy Trucks?
6	6	55	43	48	**56**	Yes	Yes	Yes
7	7	54	42	48	**55**	Yes	Yes	Yes
8	8	53	41	47	**54**	Yes	Yes	Yes
9	9	52	41	46	**53**	Yes	Yes	Yes
10	10	51	40	45	**53**	Yes	Yes	Yes
11	11	51	39	44	**52**	Yes	Yes	Yes
12	12	50	38	43	**51**	Yes	Yes	Yes
13	13	49	37	42	**50**	Yes	Yes	Yes
14	14	48	37	42	**49**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix J-12

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2005-075
Description 2035 + Project Traffic
Roadway Name: Farmington Rd
Location(s): 12

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 61
Medium Truck L_{dn}, dB: 49
Heavy Truck L_{dn}, dB: 53

Site Geometry:

Receiver Description: East of Blue Copper Dr
Centerline to Barrier Distance (C_1): 125
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to... Autos?	Medium Trucks?	Heavy Trucks?
6	6	55	43	48	**56**	Yes	Yes	Yes
7	7	54	42	48	**55**	Yes	Yes	Yes
8	8	53	41	47	**54**	Yes	Yes	Yes
9	9	52	41	46	**53**	Yes	Yes	Yes
10	10	51	40	45	**53**	Yes	Yes	Yes
11	11	51	39	44	**52**	Yes	Yes	Yes
12	12	50	38	43	**51**	Yes	Yes	Yes
13	13	49	37	42	**50**	Yes	Yes	Yes
14	14	48	37	42	**49**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix J-13

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2005-075
Description 2035 + Project Traffic
Roadway Name: Farmington Rd
Location(s): 13

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 62
Medium Truck L_{dn}, dB: 50
Heavy Truck L_{dn}, dB: 54

Site Geometry:

Receiver Description: North of SR4 (Proposed)
Centerline to Barrier Distance (C_1): 75
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to... Autos?	Medium Trucks?	Heavy Trucks?
6	6	56	44	49	**57**	Yes	Yes	Yes
7	7	55	43	49	**56**	Yes	Yes	Yes
8	8	54	42	48	**55**	Yes	Yes	Yes
9	9	53	41	47	**54**	Yes	Yes	Yes
10	10	52	40	46	**53**	Yes	Yes	Yes
11	11	51	39	45	**52**	Yes	Yes	Yes
12	12	50	39	44	**51**	Yes	Yes	Yes
13	13	50	38	43	**51**	Yes	Yes	Yes
14	14	49	37	42	**50**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix J-14

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2005-075
Description 2035 + Project Traffic
Roadway Name: Farmington Rd/SR 4
Location(s): 14

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 60
Medium Truck L_{dn}, dB: 48
Heavy Truck L_{dn}, dB: 55

Site Geometry:

Receiver Description: East of Mourning Cloak Ln
Centerline to Barrier Distance (C_1): 200
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to... Autos?	Medium Trucks?	Heavy Trucks?
6	6	55	43	50	**56**	Yes	Yes	Yes
7	7	54	42	50	**55**	Yes	Yes	Yes
8	8	53	41	49	**55**	Yes	Yes	Yes
9	9	52	40	48	**54**	Yes	Yes	Yes
10	10	51	39	47	**53**	Yes	Yes	Yes
11	11	50	38	46	**52**	Yes	Yes	Yes
12	12	50	38	45	**51**	Yes	Yes	Yes
13	13	49	37	45	**51**	Yes	Yes	Yes
14	14	48	36	44	**50**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix J-15

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2005-075
Description 2035 + Project Traffic
Roadway Name: Farmington Rd/ SR 4
Location(s): 15

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 60
Medium Truck L_{dn}, dB: 47
Heavy Truck L_{dn}, dB: 55

Site Geometry:

Receiver Description: East of Driveway 1
Centerline to Barrier Distance (C_1): 200
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to... Autos?	Medium Trucks?	Heavy Trucks?
6	6	54	42	50	**56**	Yes	Yes	Yes
7	7	53	41	49	**55**	Yes	Yes	Yes
8	8	52	40	48	**54**	Yes	Yes	Yes
9	9	51	39	47	**53**	Yes	Yes	Yes
10	10	50	38	46	**52**	Yes	Yes	Yes
11	11	50	38	45	**51**	Yes	Yes	Yes
12	12	49	37	45	**50**	Yes	Yes	Yes
13	13	48	36	44	**50**	Yes	Yes	Yes
14	14	48	36	43	**49**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix J-16

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2005-075
Description 2035 + Project Traffic
Roadway Name: Mourning Cloak Ln
Location(s): 16

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 57
Medium Truck L_{dn}, dB: 47
Heavy Truck L_{dn}, dB: 52

Site Geometry:

Receiver Description: North of Tortoise Shell Ln East Side
Centerline to Barrier Distance (C_1): 50
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to... Autos?	Medium Trucks?	Heavy Trucks?
6	6	50	41	47	**52**	Yes	Yes	No
7	7	49	40	47	**52**	Yes	Yes	Yes
8	8	48	39	46	**51**	Yes	Yes	Yes
9	9	47	38	45	**50**	Yes	Yes	Yes
10	10	47	37	44	**49**	Yes	Yes	Yes
11	11	46	36	43	**48**	Yes	Yes	Yes
12	12	45	35	42	**47**	Yes	Yes	Yes
13	13	44	34	41	**46**	Yes	Yes	Yes
14	14	43	34	40	**45**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix J-17

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2005-075
Description 2035 + Project Traffic
Roadway Name: Mourning Cloak Ln
Location(s): 17

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 54
Medium Truck L_{dn}, dB: 43
Heavy Truck L_{dn}, dB: 49

Site Geometry:

Receiver Description: North of Tortoise Shell Ln West Side
Centerline to Barrier Distance (C_1): 105
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB				Barrier Breaks Line of Sight to...		
		Autos	Medium Trucks	Heavy Trucks	Total	Autos?	Medium Trucks?	Heavy Trucks?
6	6	48	38	44	**50**	Yes	Yes	Yes
7	7	47	37	43	**49**	Yes	Yes	Yes
8	8	46	36	42	**48**	Yes	Yes	Yes
9	9	45	35	41	**47**	Yes	Yes	Yes
10	10	44	34	40	**46**	Yes	Yes	Yes
11	11	43	33	39	**45**	Yes	Yes	Yes
12	12	42	33	38	**44**	Yes	Yes	Yes
13	13	42	32	38	**43**	Yes	Yes	Yes
14	14	41	31	37	**43**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix J-18

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2005-075
Description 2035 + Project Traffic
Roadway Name: Orange Sulpher Rd
Location(s): 18

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 57
Medium Truck L_{dn}, dB: 46
Heavy Truck L_{dn}, dB: 52

Site Geometry:

Receiver Description: East of Austin Pkwy
Centerline to Barrier Distance (C_1): 50
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to... Autos?	Medium Trucks?	Heavy Trucks?
6	6	50	40	47	**52**	Yes	Yes	No
7	7	49	39	46	**51**	Yes	Yes	Yes
8	8	48	38	46	**50**	Yes	Yes	Yes
9	9	47	37	44	**49**	Yes	Yes	Yes
10	10	46	36	43	**48**	Yes	Yes	Yes
11	11	45	35	42	**47**	Yes	Yes	Yes
12	12	44	34	41	**46**	Yes	Yes	Yes
13	13	43	34	40	**45**	Yes	Yes	Yes
14	14	43	33	40	**45**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix J-19

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2005-075
Description 2035 + Project Traffic
Roadway Name: Proj. Entrance
Location(s): 19

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 60
Medium Truck L_{dn}, dB: 49
Heavy Truck L_{dn}, dB: 55

Site Geometry:

Receiver Description: North Of E. Mariposa
Centerline to Barrier Distance (C_1): 50
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB				Barrier Breaks Line of Sight to...		
		Autos	Medium Trucks	Heavy Trucks	Total	Autos?	Medium Trucks?	Heavy Trucks?
6	6	53	43	50	**55**	Yes	Yes	No
7	7	52	42	49	**54**	Yes	Yes	Yes
8	8	51	41	49	**53**	Yes	Yes	Yes
9	9	50	40	47	**52**	Yes	Yes	Yes
10	10	49	39	46	**51**	Yes	Yes	Yes
11	11	48	38	45	**50**	Yes	Yes	Yes
12	12	47	38	44	**49**	Yes	Yes	Yes
13	13	46	37	44	**49**	Yes	Yes	Yes
14	14	46	36	43	**48**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix J-20

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2005-075
Description 2035 + Project Traffic
Roadway Name: Red Admiral Ave
Location(s): 20

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 58
Medium Truck L_{dn}, dB: 48
Heavy Truck L_{dn}, dB: 53

Site Geometry:

Receiver Description: East of Proj. Entrance
Centerline to Barrier Distance (C_1): 50
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to... Autos?	Medium Trucks?	Heavy Trucks?
6	6	52	42	48	**54**	Yes	Yes	No
7	7	50	41	48	**53**	Yes	Yes	Yes
8	8	49	40	47	**52**	Yes	Yes	Yes
9	9	48	39	46	**51**	Yes	Yes	Yes
10	10	48	38	45	**50**	Yes	Yes	Yes
11	11	47	37	44	**49**	Yes	Yes	Yes
12	12	46	36	43	**48**	Yes	Yes	Yes
13	13	45	35	42	**47**	Yes	Yes	Yes
14	14	45	35	41	**47**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix J-21

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2005-075
Description 2035 + Project Traffic
Roadway Name: Red Admiral Ave
Location(s): 21

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 57
Medium Truck L_{dn}, dB: 47
Heavy Truck L_{dn}, dB: 52

Site Geometry:

Receiver Description: West Of Proj. Entrance
Centerline to Barrier Distance (C_1): 50
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to... Autos?	Medium Trucks?	Heavy Trucks?
6	6	50	41	47	**52**	Yes	Yes	No
7	7	49	39	47	**51**	Yes	Yes	Yes
8	8	48	38	46	**50**	Yes	Yes	Yes
9	9	47	37	45	**49**	Yes	Yes	Yes
10	10	46	36	44	**48**	Yes	Yes	Yes
11	11	45	36	42	**47**	Yes	Yes	Yes
12	12	44	35	42	**47**	Yes	Yes	Yes
13	13	44	34	41	**46**	Yes	Yes	Yes
14	14	43	33	40	**45**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix J-22

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2005-075
Description 2035 + Project Traffic
Roadway Name: Red Admiral Ave
Location(s): 22

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 57
Medium Truck L_{dn}, dB: 47
Heavy Truck L_{dn}, dB: 52

Site Geometry:

Receiver Description: North of Town Center Pkwy
Centerline to Barrier Distance (C_1): 50
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to... Autos?	Medium Trucks?	Heavy Trucks?
6	6	50	41	47	**53**	Yes	Yes	No
7	7	49	40	47	**52**	Yes	Yes	Yes
8	8	48	39	46	**51**	Yes	Yes	Yes
9	9	47	38	45	**50**	Yes	Yes	Yes
10	10	47	37	44	**49**	Yes	Yes	Yes
11	11	46	36	43	**48**	Yes	Yes	Yes
12	12	45	35	42	**47**	Yes	Yes	Yes
13	13	44	34	41	**46**	Yes	Yes	Yes
14	14	43	34	40	**46**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix J-23

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2005-075
Description 2035 + Project Traffic
Roadway Name: SR4 (Proposed)
Location(s): 23

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 67
Medium Truck L_{dn}, dB: 55
Heavy Truck L_{dn}, dB: 62

Site Geometry:

Receiver Description: E of Austin Pkwy N Side
Centerline to Barrier Distance (C_1): 100
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to... Autos?	Medium Trucks?	Heavy Trucks?
6	6	61	49	57	**63**	Yes	Yes	Yes
7	7	61	48	56	**62**	Yes	Yes	Yes
8	8	59	47	55	**61**	Yes	Yes	Yes
9	9	58	46	54	**60**	Yes	Yes	Yes
10	10	57	45	53	**59**	Yes	Yes	Yes
11	11	57	44	52	**58**	Yes	Yes	Yes
12	12	56	44	51	**57**	Yes	Yes	Yes
13	13	55	43	51	**57**	Yes	Yes	Yes
14	14	55	42	50	**56**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix J-24

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2005-075
Description 2035 + Project Traffic
Roadway Name: SR4 (Proposed)
Location(s): 24

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 58
Medium Truck L_{dn}, dB: 46
Heavy Truck L_{dn}, dB: 53

Site Geometry:

Receiver Description: E of Austin Pkwy S Side
Centerline to Barrier Distance (C_1): 475
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB: Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to... Autos?	Medium Trucks?	Heavy Trucks?
6	6	53	40	47	**54**	Yes	Yes	Yes
7	7	52	40	47	**54**	Yes	Yes	Yes
8	8	52	39	46	**53**	Yes	Yes	Yes
9	9	51	38	45	**52**	Yes	Yes	Yes
10	10	50	37	44	**51**	Yes	Yes	Yes
11	11	49	36	43	**50**	Yes	Yes	Yes
12	12	48	35	42	**49**	Yes	Yes	Yes
13	13	47	35	42	**49**	Yes	Yes	Yes
14	14	47	34	41	**48**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix J-25

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2005-075
Description 2035 + Project Traffic
Roadway Name: SR4 (Proposed)
Location(s): 25

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 66
Medium Truck L_{dn}, dB: 53
Heavy Truck L_{dn}, dB: 60

Site Geometry:

Receiver Description: E of Blue Copper Dr N Side
Centerline to Barrier Distance (C_1): 75
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to... Autos?	Medium Trucks?	Heavy Trucks?
6	6	60	48	55	**61**	Yes	Yes	Yes
7	7	59	47	55	**60**	Yes	Yes	Yes
8	8	58	45	54	**59**	Yes	Yes	Yes
9	9	57	44	53	**58**	Yes	Yes	Yes
10	10	56	43	52	**57**	Yes	Yes	Yes
11	11	55	43	51	**57**	Yes	Yes	Yes
12	12	54	42	50	**56**	Yes	Yes	Yes
13	13	53	41	49	**55**	Yes	Yes	Yes
14	14	53	40	48	**54**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix J-26

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2005-075
Description 2035 + Project Traffic
Roadway Name: SR4 (Proposed)
Location(s): 26

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 55
Medium Truck L_{dn}, dB: 43
Heavy Truck L_{dn}, dB: 50

Site Geometry:

Receiver Description: E of Blue Copper Dr S Side
Centerline to Barrier Distance (C_1): 475
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to... Autos?	Medium Trucks?	Heavy Trucks?
6	6	50	38	45	**51**	Yes	Yes	Yes
7	7	49	37	44	**51**	Yes	Yes	Yes
8	8	49	36	43	**50**	Yes	Yes	Yes
9	9	48	35	42	**49**	Yes	Yes	Yes
10	10	47	34	41	**48**	Yes	Yes	Yes
11	11	46	33	40	**47**	Yes	Yes	Yes
12	12	45	32	40	**46**	Yes	Yes	Yes
13	13	45	32	39	**46**	Yes	Yes	Yes
14	14	44	31	38	**45**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix J-27

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2005-075
Description 2035 + Project Traffic
Roadway Name: SR4 (Proposed)
Location(s): 27

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 62
Medium Truck L_{dn}, dB: 49
Heavy Truck L_{dn}, dB: 56

Site Geometry:

Receiver Description: East of Farmington Rd
Centerline to Barrier Distance (C_1): 225
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to... Autos?	Medium Trucks?	Heavy Trucks?
6	6	56	44	51	**58**	Yes	Yes	Yes
7	7	56	43	50	**57**	Yes	Yes	Yes
8	8	55	42	50	**56**	Yes	Yes	Yes
9	9	54	41	49	**55**	Yes	Yes	Yes
10	10	53	40	48	**54**	Yes	Yes	Yes
11	11	52	39	47	**53**	Yes	Yes	Yes
12	12	51	39	46	**52**	Yes	Yes	Yes
13	13	51	38	45	**52**	Yes	Yes	Yes
14	14	50	37	45	**51**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix J-28

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2005-075
Description 2035 + Project Traffic
Roadway Name: Swallow Tail Pkwy
Location(s): 28

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 58
Medium Truck L_{dn}, dB: 47
Heavy Truck L_{dn}, dB: 53

Site Geometry:

Receiver Description: NE of Town Center Pkwy
Centerline to Barrier Distance (C_1): 50
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to... Autos?	Medium Trucks?	Heavy Trucks?
6	6	51	41	48	**53**	Yes	Yes	No
7	7	50	40	47	**52**	Yes	Yes	Yes
8	8	48	39	47	**51**	Yes	Yes	Yes
9	9	47	38	45	**50**	Yes	Yes	Yes
10	10	47	37	44	**49**	Yes	Yes	Yes
11	11	46	36	43	**48**	Yes	Yes	Yes
12	12	45	35	42	**47**	Yes	Yes	Yes
13	13	44	35	41	**46**	Yes	Yes	Yes
14	14	44	34	41	**46**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix J-29

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2005-075
Description 2035 + Project Traffic
Roadway Name: Swallow Tail Pkwy
Location(s): 29

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 62
Medium Truck L_{dn}, dB: 51
Heavy Truck L_{dn}, dB: 57

Site Geometry:

Receiver Description: NE of Austin Pkwy
Centerline to Barrier Distance (C_1): 50
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to... Autos?	Medium Trucks?	Heavy Trucks?
6	6	55	45	52	**57**	Yes	Yes	No
7	7	54	44	51	**56**	Yes	Yes	Yes
8	8	53	43	51	**55**	Yes	Yes	Yes
9	9	52	42	49	**54**	Yes	Yes	Yes
10	10	51	41	48	**53**	Yes	Yes	Yes
11	11	50	40	47	**52**	Yes	Yes	Yes
12	12	49	40	46	**51**	Yes	Yes	Yes
13	13	48	39	46	**51**	Yes	Yes	Yes
14	14	48	38	45	**50**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix J-30

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2005-075
Description 2035 + Project Traffic
Roadway Name: Swallow Tail Pkwy
Location(s): 30

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 61
Medium Truck L_{dn}, dB: 51
Heavy Truck L_{dn}, dB: 56

Site Geometry:

Receiver Description: NE of Tortise Shell In
Centerline to Barrier Distance (C_1): 25
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	L_{dn}, dB Medium Trucks	L_{dn}, dB Heavy Trucks	L_{dn}, dB Total	Barrier Breaks Line of Sight to... Autos?	Medium Trucks?	Heavy Trucks?
6	6	53	44	52	**56**	Yes	Yes	No
7	7	52	43	51	**55**	Yes	Yes	Yes
8	8	51	42	51	**54**	Yes	Yes	Yes
9	9	50	41	49	**53**	Yes	Yes	Yes
10	10	49	40	48	**52**	Yes	Yes	Yes
11	11	48	39	47	**51**	Yes	Yes	Yes
12	12	48	38	46	**50**	Yes	Yes	Yes
13	13	47	37	45	**49**	Yes	Yes	Yes
14	14	47	37	44	**49**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix J-31

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2005-075
Description 2035 + Project Traffic
Roadway Name: Toroise Shell Ln
Location(s): 31

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 57
Medium Truck L_{dn}, dB: 47
Heavy Truck L_{dn}, dB: 52

Site Geometry:

Receiver Description: West of Red Admiral Ave
Centerline to Barrier Distance (C_1): 50
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to... Autos?	Medium Trucks?	Heavy Trucks?
6	6	50	41	47	**52**	Yes	Yes	No
7	7	49	39	47	**51**	Yes	Yes	Yes
8	8	48	38	46	**50**	Yes	Yes	Yes
9	9	47	37	44	**49**	Yes	Yes	Yes
10	10	46	36	43	**48**	Yes	Yes	Yes
11	11	45	35	42	**47**	Yes	Yes	Yes
12	12	44	35	41	**46**	Yes	Yes	Yes
13	13	44	34	41	**46**	Yes	Yes	Yes
14	14	43	33	40	**45**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix J-32

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2005-075
Description 2035 + Project Traffic
Roadway Name: Town Center Pkwy
Location(s): 32

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 63
Medium Truck L_{dn}, dB: 52
Heavy Truck L_{dn}, dB: 56

Site Geometry:

Receiver Description: East of Austin Pkwy
Centerline to Barrier Distance (C_1): 50
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to... Autos?	Medium Trucks?	Heavy Trucks?
6	6	56	46	51	**58**	Yes	Yes	No
7	7	55	44	51	**57**	Yes	Yes	Yes
8	8	54	43	50	**56**	Yes	Yes	Yes
9	9	53	42	49	**55**	Yes	Yes	Yes
10	10	53	41	48	**54**	Yes	Yes	Yes
11	11	52	40	47	**53**	Yes	Yes	Yes
12	12	51	40	46	**52**	Yes	Yes	Yes
13	13	50	39	45	**51**	Yes	Yes	Yes
14	14	49	38	44	**51**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix J-33

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2005-075
Description 2035 + Project Traffic
Roadway Name: Town Center Pkwy
Location(s): 33

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 65
Medium Truck L_{dn}, dB: 53
Heavy Truck L_{dn}, dB: 57

Site Geometry:

Receiver Description: West of Austin Pkwy
Centerline to Barrier Distance (C_1): 55
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to... Autos?	Medium Trucks?	Heavy Trucks?
6	6	58	47	52	**59**	Yes	Yes	Yes
7	7	57	46	52	**58**	Yes	Yes	Yes
8	8	56	45	51	**57**	Yes	Yes	Yes
9	9	55	44	50	**56**	Yes	Yes	Yes
10	10	54	43	49	**55**	Yes	Yes	Yes
11	11	53	42	48	**55**	Yes	Yes	Yes
12	12	52	41	47	**54**	Yes	Yes	Yes
13	13	52	40	47	**53**	Yes	Yes	Yes
14	14	51	40	46	**52**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix J-34

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2005-075
Description 2035 + Project Traffic
Roadway Name: Town Center Pkwy
Location(s): 34

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 62
Medium Truck L_{dn}, dB: 50
Heavy Truck L_{dn}, dB: 55

Site Geometry:

Receiver Description: NW of Swallow Tail Pkwy
Centerline to Barrier Distance (C_1): 65
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to... Autos?	Medium Trucks?	Heavy Trucks?
6	6	55	44	50	**57**	Yes	Yes	Yes
7	7	54	43	49	**56**	Yes	Yes	Yes
8	8	53	42	48	**55**	Yes	Yes	Yes
9	9	52	41	47	**54**	Yes	Yes	Yes
10	10	52	40	46	**53**	Yes	Yes	Yes
11	11	51	39	45	**52**	Yes	Yes	Yes
12	12	50	39	44	**51**	Yes	Yes	Yes
13	13	49	38	44	**50**	Yes	Yes	Yes
14	14	48	37	43	**50**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix J-35

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2005-075
Description 2035 + Project Traffic
Roadway Name: Viceroy Ave
Location(s): 35

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 62
Medium Truck L_{dn}, dB: 51
Heavy Truck L_{dn}, dB: 55

Site Geometry:

Receiver Description: East of Town Center Pkwy
Centerline to Barrier Distance (C_1): 50
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to... Autos?	Medium Trucks?	Heavy Trucks?
6	6	56	45	50	**57**	Yes	Yes	No
7	7	54	43	50	**56**	Yes	Yes	Yes
8	8	53	42	49	**55**	Yes	Yes	Yes
9	9	52	41	48	**54**	Yes	Yes	Yes
10	10	52	40	47	**53**	Yes	Yes	Yes
11	11	51	40	46	**52**	Yes	Yes	Yes
12	12	50	39	45	**51**	Yes	Yes	Yes
13	13	49	38	44	**51**	Yes	Yes	Yes
14	14	49	37	43	**50**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix J-36

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2005-075
Description 2035 + Project Traffic
Roadway Name: Viceroy Ave
Location(s): 36

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 61
Medium Truck L_{dn}, dB: 49
Heavy Truck L_{dn}, dB: 53

Site Geometry:

Receiver Description: East of Tortoise Shell Pkwy North Sid
Centerline to Barrier Distance (C_1): 45
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to... Autos?	Medium Trucks?	Heavy Trucks?
6	6	54	43	48	**55**	Yes	Yes	No
7	7	52	41	48	**54**	Yes	Yes	Yes
8	8	51	40	47	**53**	Yes	Yes	Yes
9	9	50	39	46	**52**	Yes	Yes	Yes
10	10	50	38	45	**51**	Yes	Yes	Yes
11	11	49	38	44	**50**	Yes	Yes	Yes
12	12	48	37	43	**49**	Yes	Yes	Yes
13	13	47	36	42	**49**	Yes	Yes	Yes
14	14	47	35	41	**48**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix J-37

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2005-075
Description 2035 + Project Traffic
Roadway Name: Viceroy Ave
Location(s): 37

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 51
Medium Truck L_{dn}, dB: 39
Heavy Truck L_{dn}, dB: 44

Site Geometry:

Receiver Description: East of Tortoise Shell Pkwy South Sid
Centerline to Barrier Distance (C_1): 275
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB				Barrier Breaks Line of Sight to...		
		Autos	Medium Trucks	Heavy Trucks	Total	Autos?	Medium Trucks?	Heavy Trucks?
6	6	46	34	39	**47**	Yes	Yes	Yes
7	7	45	33	38	**46**	Yes	Yes	Yes
8	8	44	33	37	**45**	Yes	Yes	Yes
9	9	43	32	36	**44**	Yes	Yes	Yes
10	10	42	31	36	**43**	Yes	Yes	Yes
11	11	41	30	35	**42**	Yes	Yes	Yes
12	12	41	29	34	**42**	Yes	Yes	Yes
13	13	40	28	33	**41**	Yes	Yes	Yes
14	14	39	28	33	**40**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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