NOISE IMPACT ANALYSIS

LYONS CANYON RANCH

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LSA

July 2005

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INTRODUCTION

This noise impact analysis has been prepared to evaluate the potential noise impacts and mitigation measures associated with the development of Lyons Canyon Ranch in unincorporated Los Angeles County (County), California. This report is intended to satisfy the County's requirement for a project-specific noise impact analysis by examining the short-term and long-term impacts on the project site and by evaluating the effectiveness of mitigation measures incorporated as part of the project designs.

PROJECT DESCRIPTION

The proposed project is located on an approximately 358-acre site and includes the development of 111 lots comprised of 95 detached single-family lots, 5 senior housing lots, 1 condominium lot proposed for development with approximately 90 senior condominium units, 4 open space lots, 5 debris/detention basin lots, and 1 park lot. The single-family detached, detached senior units, and attached senior condominium uses are characterized by a lot orientation with a gross target density of 0.82 single-family dwelling units per acre. The site is generally bounded by The Old Road and the Interstate 5 (I-5) freeway to the east, existing residential development (Stevenson Ranch) to the north, Towsley Canyon to the south, and the Santa Sussana mountains to the west. Regional trail connections also exist to the west and south. Figure 1 illustrates the location and vicinity of the proposed project. Figure 2 illustrates the project's site plan. As shown in Figure 2, two primary entrances to the neighborhood are proposed from The Old Road.

METHODOLOGY RELATED TO NOISE IMPACT ASSESSMENT

Evaluation of noise impacts associated with the proposed project includes the following:

- Determine the noise impacts associated with short-term construction of the proposed project on adjacent noise-sensitive uses
- Determine the long-term traffic and commercial use noise impacts on noise-sensitive uses on site; and
- Determine the required mitigation measures to reduce short-term and long-term noise impacts

This noise impact analysis utilizes the County's noise standards, including the County's Noise Element and Noise Control Ordinance, as thresholds against which potential noise impacts are evaluated.

CHARACTERISTICS OF SOUND

Sound is increasing in the environment and can affect quality of life. Noise is usually defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep.

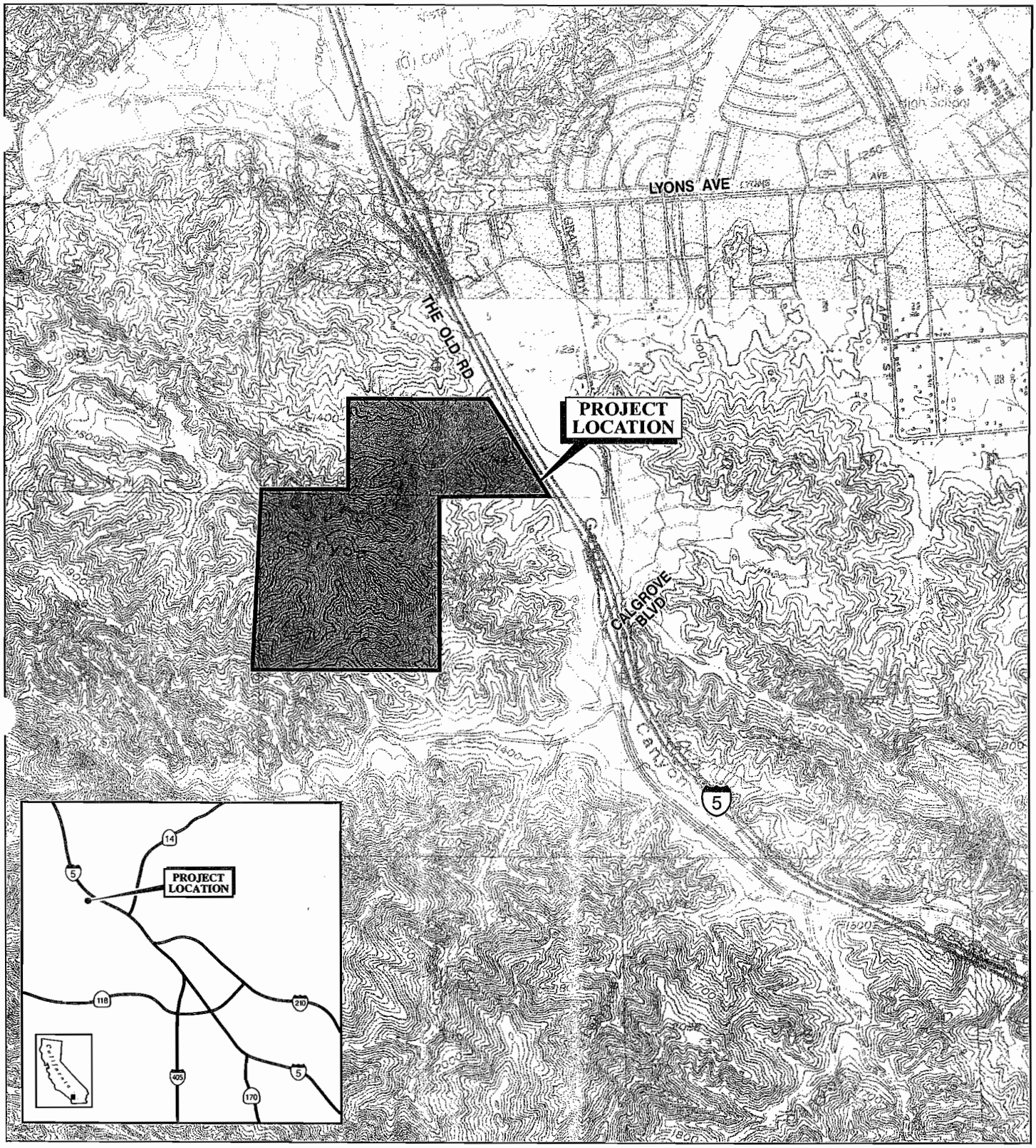

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FIGURE 1

SOURCE: USGS 7.5' Quad - Oat Mountain, Ca.

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Lyons Canyon Ranch
Project Location

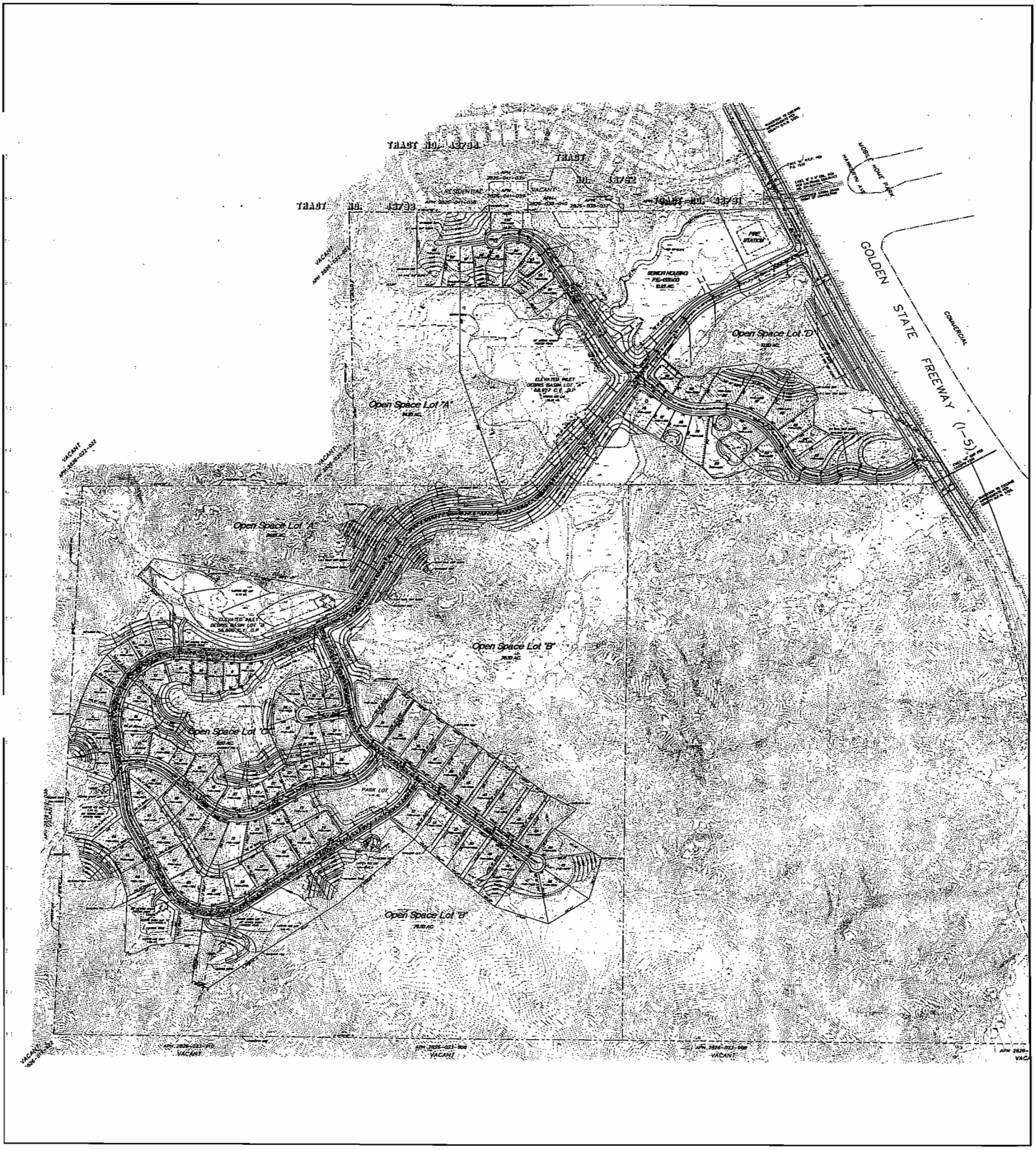

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FIGURE 2

N

350 700

FEET

SOURCE: McDonalds Corporation

Lyons Canyon Ranch

Site Plan

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To the human ear, sound has two significant characteristics: pitch and loudness. Pitch is generally an annoyance, while loudness can affect the ability to hear. Pitch is the number of complete vibrations, or cycles per second, of a wave, resulting in the tone's range from high to low. Loudness is the strength of a sound and describes a noisy or quiet environment; it is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound waves, combined with the reception characteristics of the human ear. Sound intensity refers to how hard the sound wave strikes an object, which in turn produces the sound's effect. This characteristic of sound can be precisely measured with instruments. The analysis of a project defines the noise environment of the project area in terms of sound intensity and its effect on adjacent sensitive land uses.

MEASUREMENT OF SOUND

Sound intensity is measured through the A-weighted scale to correct for the relative frequency response of the human ear. That is, an A-weighted noise level de-emphasizes low and very high frequencies of sound similar to the human ear's de-emphasis of these frequencies. Unlike linear units, such as inches or pounds, decibels are measured on a logarithmic scale representing points on a sharply rising curve.

For example, 10 decibels (dB) are 10 times more intense than 1 decibel, 20 decibels are 100 times more intense, and 30 decibels are 1,000 times more intense. Thirty decibels represent 1,000 times more acoustic energy than one decibel. The decibel scale increases as the square of the change, representing the sound pressure energy. A sound as soft as human breathing is about 10 times greater than 0 decibels. The decibel system of measuring sound gives a rough connection between the physical intensity of sound and its perceived loudness to the human ear. A 10-decibel increase in sound level is perceived by the human ear as only a doubling of the loudness of the sound. Ambient sounds generally range from 30 dBA (very quiet) to 100 dBA (very loud).

Sound levels are generated from a source, and their decibel level decreases as the distance from that source increases. Sound dissipates exponentially with distance from the noise source. For a single point source, sound levels decrease approximately six decibels for each doubling of distance from the source. This drop-off rate is appropriate for noise generated by stationary equipment. If noise is produced by a line source, such as highway traffic or railroad operations, the sound decreases three decibels for each doubling of distance in a hard site environment. Line source noise, when produced within a relatively flat environment with absorptive vegetation, decreases four and one-half decibels for each doubling of distance.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoyance effects of sound. Equivalent continuous sound level (L_{eq}) is the total sound energy of time-varying noise over a sample period. However, the predominant rating scales for human communities in the State of California are the L_{eq} and community noise equivalent level (CNEL) or the day-night average level (L_{dn}) based on A-weighted decibels (dBA). CNEL is the time-varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale but without the adjustment for events occurring during the evening hours. CNEL and L_{dn} are within 1 dBA of each other and are normally exchangeable. The noise adjustments are added to the noise events occurring during the more sensitive hours.

Other noise rating scales of importance when assessing the annoyance factor include the maximum noise level (L_{max}), which is the highest exponential time-averaged sound level that occurs during a stated time period. The noise environments discussed in this analysis are specified in terms of maximum levels denoted by L_{max} for short-term noise impacts. L_{max} reflects peak operating conditions and addresses the annoyance aspects of intermittent noise.

Another noise scale often used together with the L_{max} in noise ordinances for enforcement purposes is noise standards in terms of percentile noise levels. For example, the L_{10} noise level represents the noise level exceeded 10 percent of the time during a stated period. The L_{50} noise level represents the median noise level. Half the time the noise level exceeds this level, and half the time it is less than this level. The L_{90} noise level represents the noise level exceeded 90 percent of the time and is considered the background noise level during a monitoring period. For a relatively constant noise source, the L_{eq} and L_{50} are approximately the same.

Noise impacts can be described in three categories. The first is audible impacts, which refers to increases in noise levels noticeable to humans. Audible increases in noise levels generally refer to a change of 3.0 dB or greater, since this level has been found to be barely perceptible in exterior environments. The second category, potentially audible, refers to a change in the noise level between 1.0 and 3.0 dB. This range of noise levels has been found to be noticeable only in laboratory environments. The last category is changes in noise level of less than 1.0 dB, which are inaudible to the human ear. Only audible changes in existing ambient or background noise levels are considered potentially significant.

PSYCHOLOGICAL AND PHYSIOLOGICAL EFFECTS OF NOISE

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions and thereby affecting blood pressure and functions of the heart and the nervous system. In comparison, extended periods of noise exposure above 90 dBA would result in permanent cell damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear even with short-term exposure. This level of noise is called the threshold of feeling. As the sound reaches 140 dBA, the tickling sensation is replaced by the feeling of pain in the ear. This is called the threshold of pain. A sound level of 160 to 165 dBA will result in dizziness or loss of equilibrium.

The ambient or background noise problem is widespread and generally more concentrated in urban areas than in outlying, less developed areas.

Table A lists "Definitions of Acoustical Terms;" Table B shows "Common Sound Levels and Their Noise Sources;" and Table C shows "Land Use Compatibility for Exterior Community Noise" recommended by the California Department of Health, Office of Noise Control.

Table B: Common Sound Levels and Their Noise Sources

Noise Source	A-Weighted Sound Level in Decibels	Noise Environments	Subjective Evaluations
Near Jet Engine	140	Deafening	128 times as loud
Civil Defense Siren	130	Threshold of Pain	64 times as loud
Hard Rock Band	120	Threshold of Feeling	32 times as loud
Accelerating Motorcycle at a Few Feet Away	110	Very Loud	16 times as loud
Pile Driver; Noisy Urban Street/Heavy City Traffic	100	Very Loud	8 times as loud
Ambulance Siren; Food Blender	95	Very Loud	
Garbage Disposal	90	Very Loud	4 times as loud
Freight Cars; Living Room Music	85	Loud	
Pneumatic Drill; Vacuum Cleaner	80	Loud	2 times as loud
Busy Restaurant	75	Moderately Loud	
Near Freeway Auto Traffic	70	Moderately Loud	Reference Level
Average Office	60	Quiet	½ as loud
Suburban Street	55	Quiet	
Light Traffic; Soft Radio Music in Apartment	50	Quiet	¼ as loud
Large Transformer	45	Quiet	
Average Residence without Stereo Playing	40	Faint	⅛ as loud
Soft Whisper	30	Faint	
Rustling Leaves	20	Very Faint	
Human Breathing	10	Very Faint	Threshold of Hearing
	0	Very Faint	

Source: Compiled by LSA Associates, Inc. 2004.

Table C: Land Use Compatibility for Exterior Community Noise

Land Use Category	Noise Range (Ldn or CNEL), dB			
	I	II	III	IV
Passively used open spaces	50	50–55	55–70	70+
Auditoriums, concert halls, amphitheaters	45–50	50–65	65–70	70+
Residential—low-density single family, duplex, mobile homes	50–55	55–70	70–75	75+
Residential—multifamily	50–60	60–70	70–75	75+
Transient lodging—motels, hotels	50–60	60–70	70–80	80+
Schools, libraries, churches, hospitals, nursing homes	50–60	60–70	70–80	80+
Actively used open spaces—playgrounds, neighborhood parks	50–67	—	67–73	73+
Golf courses, riding stables, water recreation, cemeteries	50–70	—	70–80	80+
Office buildings, business commercial and professional	50–67	67–75	75+	—
Industrial, manufacturing, utilities, agriculture	50–70	70–75	75+	—

Source: Office of Noise Control, California Department of Health 1976.

Noise Range I—Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

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

Noise Range III—Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Noise Range IV—Clearly Unacceptable: New construction or development should generally not be undertaken.

SETTING

Existing Sensitive Land Uses in the Project Area

Sensitive receptors include residences, schools, hospitals, and similar uses that are sensitive to noise. There are existing residences in Stevenson Ranch to the north of the project site. These sensitive land uses may be potentially affected by the noise generated during construction on the project site.

Overview of the Existing Noise Environment

The primary existing noise sources in the project area are transportation facilities. Traffic on The Old Road, Calgrove Boulevard, I-5, and other streets in the project vicinity is the source of ambient noise in the project vicinity. The existing (2004) average daily traffic volumes (ADT) for roadway segments in the project vicinity are provided by Austin-Foust Associates, Inc. (August 2004).

The Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used to evaluate highway traffic-related noise conditions in the vicinity of the project site. This model requires various parameters including traffic volumes, vehicle mix, vehicle speed, and roadway geometry to compute typical equivalent noise levels during daytime, evening, and nighttime hours. The resultant noise levels are weighted and summed over 24-hour periods to determine the CNEL values. Table D provides the existing (2004) traffic noise levels adjacent to roadway segments in the project vicinity. These noise levels represent worst-case scenarios, which assume that no shielding is provided between the traffic and the location where the noise contours are drawn. The specific assumptions used in developing these noise levels and the model printouts are provided in Appendix A. Traffic noise is generally moderate to high along existing street segments in the project vicinity. The 70, 65, and 60 dBA CNEL extend up to 97, 196, and 417 feet, respectively, from the roadway centerline.

Thresholds of Significance

A project will normally have a significant noise-related effect on the environment if it will substantially increase the ambient noise levels for adjoining areas or conflict with adopted environmental plans and goals of the community in which it is located. The applicable noise standards governing the project site are the criteria in the County's Noise Element and Noise Control Ordinance.

Roadway Segment	ADT	Center-line to 70 CNEL (feet)	Center-line to 65 CNEL (feet)	Center-line to 60 CNEL (feet)	CNEL (dBA) 50 Feet from Outermost Lane
McBean Parkway					
Between I-5 NB Ramps and Tournament Road	38,000	91	184	390	70.5
Between Tournament Road and Orchard Village Road	26,000	74	145	304	68.8
East of Orchard Village Road	35,000	87	175	370	70.1
Pico Canyon Road					
West of The Old Road	14,000	37	80	166	65.6
Between The Old Road and Marriott Way	29,000	62	126	268	68.7
Between Marriott Way and Wiley Canyon Road	37,000	72	148	315	69.8
Between Wiley Canyon Road and Orchard Village Road	33,000	67	137	292	69.3
East of Orchard Village Road	34,000	68	140	298	69.4
Calgrove Boulevard					
Between The Old Road and I-5 SB Ramps	11,000	25	53	113	64.6
I-5					
Between Lyons Avenue and Calgrove Boulevard	182,000	594	1,277	2,749	82.62

Source: LSA Associates, Inc., November 2004.

County of Los Angeles Noise Standards

The County does not set land use standards for noise in its Noise Element of the General Plan. Therefore, the 65 dBA CNEL exterior noise standard recommended for residential uses in the State's guidelines (Table C) is used in this noise impact analysis.

In addition, the County Code, Chapter 12.08 Noise Control, has the following exterior noise standards listed in Table E:

Table E: Exterior Noise Standards, L_{50}

Noise Zone	Designated Noise Zone Land Use	Time Interval	Exterior Noise Level (dBA)
I	Noise Sensitive Area	Anytime	45
II	Residential Area	10:00 p.m.–7:00 a.m. 7:00 a.m. –10:00 p.m.	45 50
III	Commercial Area	10:00 p.m. –7:00 a.m. 7:00 a.m. –10:00 p.m.	55 60
IV	Industrial Area	Anytime	70

The above noise level limits may not be exceeded for a cumulative period of more than 30 minutes in any hour. If the existing ambient L_{50} exceeds these levels, then the ambient L_{50} becomes the exterior noise levels. For events shorter than 30 minutes, higher noise limits are used for the exterior noise standards. For example, 5, 10, and 15 dBA are added to the above noise limits for events less than 15, 5, and 1 minutes, respectively. Twenty dBA plus the above noise limits (70 dBA L_{max} during the day and 65 dBA L_{max} during the night) may not be exceeded for any period of time.

For interior noise standards, the County sets an allowable interior noise level of 45 dBA for the period from 7:00 a.m. to 10:00 p.m. and 40 dBA for the period from 10:00 p.m. to 7:00 a.m. for all multifamily residential uses. For events shorter than 5 minutes in any hour, the noise standard is increased in 5 dBA increments in each standard. For example, 5 and 10 dBA are added to these noise limits for events less than 5 minutes and 1 minute, respectively. If the measured ambient noise reflected by the L_{50} exceeds that permissible within any of the interior noise standards, the allowable interior noise level shall be increased in 5 dBA increments in each standard, as appropriate, to reflect said ambient noise level.

The County also has the following construction noise restrictions:

A. Operating or causing the operation of any tools or equipment used in construction, drilling, repair, alteration or demolition work between weekday hours of 7:00 p.m. and 7:00 a.m., or at any time on Sundays or holidays, such that the sound there from creates a noise disturbance across a residential or commercial real-property line, except for emergency work of public service utilities or by variance issued by the health officer is prohibited.

B. Noise Restrictions at Affected Structures. The contractor shall conduct construction activities in such a manner that the maximum noise levels at the affected buildings will not exceed those listed in the following schedule:

1. At Residential Structures.

a. Mobile Equipment. Maximum noise levels for nonscheduled, intermittent, short-term operation (less than 10 days) or of mobile equipment:

	Single-family Residential	**Multifamily Residential**	**Semiresidential/ Commercial**
Daily, except Sundays and legal holidays: 7:00 a.m. to 8:00 p.m.	75 dBA	80 dBA	85 dBA
Daily, 8:00 p.m. to 7:00 a.m. and all day Sundays and legal holidays	60 dBA	64 dBA	70 dBA

b. Stationary Equipment. Maximum noise level for repetitively scheduled and relatively long-term operation (periods of 10 days or more) of stationary equipment:

	Single-family Residential	**Multifamily Residential**	**Semiresidential/ Commercial**
Daily, except Sundays and legal holidays: 7:00 a.m. to 8:00 p.m.	60 dBA	65 dBA	70 dBA
Daily, 8:00 p.m. to 7:00 a.m. and all day Sundays and legal holidays	50 dBA	55 dBA	60 dBA

2. At Business Structures.

a. Mobile Equipment. Maximum noise levels for nonscheduled, intermittent, short-term operation of mobile equipment:

Daily, including Sundays and legal holidays, all hours: maximum of 85 dBA.

C. All mobile or stationary internal-combustion-engine powered equipment or machinery shall be equipped suitable exhaust and air-intake silencers in proper working order.

D. In case of a conflict between this noise ordinance and any other ordinance regulating construction activities, provisions of any specific ordinance regulating construction activities shall control.

The County also has a noise policy regulating construction activities. For example, construction hours are limited to between the hours of 7:00 a.m. and 7:00 p.m. of any working day, except Sundays and holidays.

PROJECT IMPACTS

Construction Noise

Short-term noise impacts would be associated with excavation, grading, and erecting of buildings on site during construction of the proposed project. Construction-related short-term noise levels would be higher than existing ambient noise levels in the project area today but would no longer occur once construction of the project is completed.

Two types of short-term noise impacts could occur during the construction of the proposed project. First, construction crew commutes and the transport of construction equipment and materials to the site for the proposed project would incrementally increase noise levels on access roads leading to the site. There will be a relatively high single-event noise exposure potential at a maximum level of 87 dBA L_{max} with trucks passing at 50 feet. However, the projected construction traffic will be small when compared to the existing traffic volumes on The Old Road, Calgrove Boulevard, and I-5, and its associated long-term noise level change will not be perceptible. Therefore, short-term construction-related worker commutes and equipment transport noise impacts would not be substantial.

The second type of short-term noise impact is related to noise generated during excavation, grading, and construction on the project site. Construction is performed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on the site. Therefore, the noise levels vary as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Table F lists maximum noise levels recommended for noise impact assessments for typical construction equipment based on a distance of 50 feet between the equipment and a noise receptor. Typical maximum noise levels range up to 91 dBA at 50 feet during the noisiest construction phases. The site preparation phase, which includes excavation and grading of the site, tends to generate the highest noise levels, because the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavating machinery such as backfillers, bulldozers, draglines, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three or four minutes at lower power settings.

Table F: Typical Maximum Construction Equipment Noise Levels (L_{max})

Type of Equipment	Range of Maximum Sound Level Measured at 50 feet (dBA)	Suggested Maximum Sound Level for Analysis at 50 feet (dBA)
Pile Drivers, 12,000 to 18,000 ft-lb/blow	81–96	93
Rock Drills	83–99	96
Jackhammers	75–85	82
Pneumatic Tools	78–88	85
Pumps	74–84	80
Scrapers	83–91	87
Haul Trucks	83–94	88
Cranes	79–86	82
Portable Generators	71–87	80
Rollers	75–82	80
Dozers	77–90	85
Tractors	77–82	80
Front-End Loaders	77–90	86
Hydraulic Backhoes	81–90	86
Hydraulic Excavators	81–90	86
Graders	79–89	86
Air Compressors	76–89	86
Trucks	81–87	86

Source: Noise Control for Buildings and Manufacturing Plants, Bolt, Beranek, & Newman 1987.

The following measures can be implemented to reduce potential construction noise impacts on nearby sensitive receptors:

1. During all site excavation and grading, the project contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards.
2. The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site.
3. The construction contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.

Traffic Noise Impacts

Outdoor Active Use Area. The following mitigation measures are required for outdoor active use areas associated with residential uses:

1. A minimum six-foot-high sound barrier is required for ground-floor frontline outdoor active use areas on the following lots: Lots 83 through 85 and Lots 87 through 90.

2. A minimum seven-foot-high sound barrier is required for ground-floor frontline outdoor active use areas on Lot 86.

3. A minimum five-foot-high sound barrier is required for ground-floor frontline outdoor active use areas on the following lots: Lots 91 through 94.

4. Balconies or decks, if proposed for the frontline dwelling units on Lots 83 through 94 and the attached senior housing, which are directly exposed to traffic noise from The Old Road and I-5, require a minimum five-foot-high noise barrier along the perimeter of balconies or decks. Balconies or decks on the side of the building facing away from the street or outside of the 65 dBA CNEL impact zone do not require sound wall protection.

Interior Noise Sound Wall. To meet the County's 45 dBA CNEL interior noise standard, the following mitigation measures will be required:

1. Mechanical ventilation, such as an air-conditioning system, shall be required for dwelling units on the following lots to ensure that windows can remain closed for prolonged periods of time: Lots 76 through 99 and all units in the attached senior housing.

2. Windows with a minimum STC-30 rating are required for bedrooms exposed to I-5 traffic on Lots 83 through 88, except for Lot 86, where windows with a minimum STC-32 rating are recommended for bedrooms exposed to I-5 traffic.

3. Windows with a minimum STC-34 rating are required for sleeping quarters associated with the proposed fire station.

Table F: Typical Maximum Construction Equipment Noise Levels (L_{max})

Type of Equipment	Range of Maximum Sound Level Measured at 50 feet (dBA)	Suggested Maximum Sound Level for Analysis at 50 feet (dBA)
Pile Drivers, 12,000 to 18,000 ft-lb/blow	81–96	93
Rock Drills	83–99	96
Jackhammers	75–85	82
Pneumatic Tools	78–88	85
Pumps	74–84	80
Scrapers	83–91	87
Haul Trucks	83–94	88
Cranes	79–86	82
Portable Generators	71–87	80
Rollers	75–82	80
Dozers	77–90	85
Tractors	77–82	80
Front-End Loaders	77–90	86
Hydraulic Backhoes	81–90	86
Hydraulic Excavators	81–90	86
Graders	79–89	86
Air Compressors	76–89	86
Trucks	81–87	86

Source: Noise Control for Buildings and Manufacturing Plants, Bolt, Beranek, & Newman 1987.

Table H: Interim Year (2015) Plus Project Traffic Noise Levels

Roadway Segment	ADT	Center-line to 70 CNEL (feet)	Center-line to 65 CNEL (feet)	Center-line to 60 CNEL (feet)	CNEL (dBA) 50 Feet from Outermost Lane	Change from No Project Level (dBA)
The Old Road						
Between Valencia Boulevard and McBean Parkway	24,000	71	138	288	68.5	0.2
Between Stevenson Ranch Parkway and Pico Canyon Road	31,000	65	132	281	69.0	0.0
Between Pico Canyon Road and Marriott Way	12,000	26[1]	56	120	65.0	0.8
Between Marriott Way and Calgrove Boulevard	13,000	27	59	126	65.3	2.1
Wiley Canyon Road						
North of Orchard Village Road	26,000	59	118	250	68.3	0.2
Between Orchard Village Road and Tournament Road	21,000	48	103	217	67.3	0.2
Between Tournament Road and Lyons Avenue	22,000	49	106	224	67.5	0.2
Between Lyons Avenue and Calgrove Boulevard	10,000	23	49	106	64.2	0.5
Orchard Village Road						
Between McBean Parkway and Wiley Canyon Road	39,000	74	153	327	70.0	0.0
Between Wiley Canyon Road and Lyons Avenue	24,000	56	112	237	67.9	0.0
Valencia Boulevard						
Between The Old Road and I-5 SB Ramps	29,000	79	155	327	69.3	0.2
Between I-5 NB Ramps and Tourney Road	52,000	109	225	480	71.8	0.1
Between Tourney Road and Rockwell Canyon Road	49,000	106	217	462	71.6	0.0
Stevenson Ranch Parkway						
Between The Old Road and I-5 SB Ramps	37,000	72	148	315	69.8	0.0

[1] Traffic noise within 50 feet of roadway centerline requires site-specific analysis.

Interior Noise Levels. As stated above, homes proposed along the eastern edge of the project site would be potentially exposed to traffic noise levels exceeding 65 dBA CNEL. Based on the data provided in the Environmental Protection Agency's (EPA) Protective Noise Levels (EPA 550/9-79-100, November 1979), standard homes in Southern California provide at least 12 dBA of exterior to interior noise attenuation with windows open and 24 dBA with windows closed. Therefore, homes exposed to exterior traffic noise levels lower than 69 dBA CNEL (45 + 24 = 69 dBA) would not have their interior noise level exceed the 45 dBA CNEL standard with the windows closed. With the windows open, homes exposed to exterior traffic noise levels exceeding 57 dBA CNEL (45 + 12 = 57 dBA) would exceed the 45 dBA CNEL interior noise standard.

Based on the above discussion and the projected traffic noise levels on the eastern edge of the project site, Lots 83 through 88 and attached senior housing units are anticipated to be exposed to traffic noise above the 69 dBA CNEL from I-5 and The Old Road adjacent to the project site. Therefore, building facade enhancements, such as double-paned windows with sound transmission class (STC) ratings higher than standard building construction provides would be required to achieve the 45 dBA CNEL interior noise standard. In addition, mechanical ventilation, such as an air-conditioning system, would be required for dwelling units along the eastern edge of the project site to ensure that windows can remain closed for prolonged periods of time.

Standard windows provide up to STC-27 in noise attenuation. Depending on the distance and pad elevation of the proposed future homes along the eastern edge, the required window STC ratings will vary. Windows with a minimum STC-30 rating are required for bedrooms exposed to I-5 traffic on Lots 83 through 88, except for Lot 86, where windows with a minimum STC-32 rating are recommended for bedrooms exposed to I-5 traffic.

Similarly, mitigation measures, such as windows with a minimum STC-34 rating, are required for the sleeping quarter associated with the fire station proposed between the attached senior housing site and The Old Road. However, it is not expected that there would be outdoor active uses proposed with the fire station. Therefore, no sound walls would be required.

Fire Station Noise Impact

There would be potential noise impacts associated with the operations of the proposed fire station. Although noise from fire truck engines or exhaust would not result in noise levels higher than noise from I-5 traffic, the use of sirens by the fire truck may cause short-term annoyance when it occurs. However, as with any residential uses adjacent to a fire station, such noise impacts are unavoidable and are considered adverse impacts.

MITIGATION MEASURES

Construction Impacts

Construction will be limited to the hours of 7:00 a.m. to 7:00 p.m. on any working day except Sundays and holidays, in accordance with the County's Noise Control Ordinance. No construction activities are permitted outside of these hours or on Sundays and holidays.

The following measures can be implemented to reduce potential construction noise impacts on nearby sensitive receptors:

1. During all site excavation and grading, the project contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards.
2. The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site.
3. The construction contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.

Traffic Noise Impacts

Outdoor Active Use Area. The following mitigation measures are required for outdoor active use areas associated with residential uses:

1. A minimum six-foot-high sound barrier is required for ground-floor frontline outdoor active use areas on the following lots: Lots 83 through 85 and Lots 87 through 90.

2. A minimum seven-foot-high sound barrier is required for ground-floor frontline outdoor active use areas on Lot 86.

3. A minimum five-foot-high sound barrier is required for ground-floor frontline outdoor active use areas on the following lots: Lots 91 through 94.

4. Balconies or decks, if proposed for the frontline dwelling units on Lots 83 through 94 and the attached senior housing, which are directly exposed to traffic noise from The Old Road and I-5, require a minimum five-foot-high noise barrier along the perimeter of balconies or decks. Balconies or decks on the side of the building facing away from the street or outside of the 65 dBA CNEL impact zone do not require sound wall protection.

Interior Noise Sound Wall. To meet the County's 45 dBA CNEL interior noise standard, the following mitigation measures will be required:

1. Mechanical ventilation, such as an air-conditioning system, shall be required for dwelling units on the following lots to ensure that windows can remain closed for prolonged periods of time: Lots 76 through 99 and all units in the attached senior housing.

2. Windows with a minimum STC-30 rating are required for bedrooms exposed to I-5 traffic on Lots 83 through 88, except for Lot 86, where windows with a minimum STC-32 rating are recommended for bedrooms exposed to I-5 traffic.

3. Windows with a minimum STC-34 rating are required for sleeping quarters associated with the proposed fire station.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

With implementation of the identified mitigation measures, potential short-term and long-term noise impacts would be reduced to below the level of significance.

REFERENCES

Austin-Foust Associates, Inc., Traffic Study for Lyons Canyon Ranch, August 2004.

Bolt, Beranek & Newman, Noise Control for Buildings and Manufacturing Plants, 1987.

County of Los Angeles, Noise Control Ordinance.

County of Los Angeles, Noise Element of the General Plan.

Federal Highway Administration, Highway Traffic Noise Prediction Model, FHWA RD-77-108, 1977.

APPENDIX A

FHWA TRAFFIC NOISE MODEL PRINTOUTS

LYONS CANYON

FHWA TRAFFIC NOISE MODEL PRINTOUTS

EXISTING (YEAR 2004) BASELINE CONDITIONS

TABLE 2004 -01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/03/2004
ROADWAY SEGMENT: The Old Road between Valencia Boulevard and McBean Parkway
NOTES: Lyons Canyon - 2004

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 17000 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.96

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	111.5	230.2	491.1

TABLE 2004 -03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/03/2004
ROADWAY SEGMENT: The Old Road between Pico Canyon Road and Marriott Way
NOTES: Lyons Canyon - 2004

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 10000 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.19

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	106.1	228.3

TABLE 2004 -04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/03/2004
ROADWAY SEGMENT: Wiley Canyon Road North of Orchard Village Road
NOTES: Lyons Canyon - 2004

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 11000 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.52

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	69.3	142.2	302.8

TABLE 2004 -06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/03/2004
ROADWAY SEGMENT: Wiley Canyon Road between Tournament Road and Lyons Avenue
NOTES: Lyons Canyon - 2004

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 18000 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.66

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	93.5	196.0	419.8

TABLE 2004 -08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/03/2004
ROADWAY SEGMENT:
Orchard Village Road between McBean Parkway and Wiley Canyon Road
NOTES: Lyons Canyon - 2004

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 29000 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.73

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
62.4	126.4	268.4	576.3

TABLE 2004 -10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/03/2004
ROADWAY SEGMENT: Valencia Boulevard between The Old Road and I-5 SB Ramps
NOTES: Lyons Canyon - 2004

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 19000 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.45

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
63.9	119.2	247.5	528.6

TABLE 2004 -12
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/03/2004
ROADWAY SEGMENT:
Valencia Boulevard between Tourney Road and Rockwell Canyon Road
NOTES: Lyons Canyon - 2004

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 39000 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.57

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
92.5	187.1	397.1	852.6

TABLE 2004 -14
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/03/2004
ROADWAY SEGMENT: McBean Parkway between I-5 NB Ramps and Tournament Road
NOTES: Lyons Canyon - 2004

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 38000 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.46

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
91.2	184.0	390.3	838.0

TABLE 2004 -16
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/03/2004
ROADWAY SEGMENT: McBean Parkway East of Orchard Village Road
NOTES: Lyons Canyon - 2004

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 35000 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES			
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.10

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
87.1	174.6	369.7	793.3

TABLE 2004 -18
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/03/2004
ROADWAY SEGMENT: Pico Canyon Road between The Old Road and Marriott Way
NOTES: Lyons Canyon - 2004

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 29000 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.73

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
62.4	126.4	268.4	576.3

TABLE 2004 -20
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/03/2004
ROADWAY SEGMENT:
Pico Canyon Road between Wiley Canyon Road and Orchard Village Road
NOTES: Lyons Canyon - 2004

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 33000 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.29

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
67.2	137.4	292.4	628.1

TABLE 2004 -22
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/03/2004
ROADWAY SEGMENT: Calgrove Boulevard between The Old Road and I-5 SB Ramps
NOTES: Lyons Canyon - 2004

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 11000 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES		
DAY	EVENING	NIGHT
---	---	---
AUTOS		
75.51	12.57	9.34
M-TRUCKS		
1.56	0.09	0.19
H-TRUCKS		
0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.61

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
---	---	---	---
0.0	52.7	113.0	243.2

LYONS CANYON

FHWA TRAFFIC NOISE MODEL PRINTOUTS

INTERIM (2015) NO PROJECT CONDITIONS

TABLE 2015 NP-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/03/2004
ROADWAY SEGMENT:
The Old Road between Stevenson Ranch Parkway and Pico Canyon Road
NOTES: Lyons Canyon - 2015 NP

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 31000 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.02

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
64.8	132.0	280.5	602.5

TABLE 2015 NP-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/03/2004
ROADWAY SEGMENT: The Old Road between Marriott Way and Calgrove Boulevard
NOTES: Lyons Canyon - 2015 NP

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 8000 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.22

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	91.5	196.8

TABLE 2015 NP-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/03/2004
ROADWAY SEGMENT:
Wiley Canyon Road between Orchard Village Road and Tournament Road
NOTES: Lyons Canyon - 2015 NP

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 20000 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.12

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	99.8	210.1	450.2

TABLE 2015 NP-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/03/2004
ROADWAY SEGMENT: Wiley Canyon Road between Lyons Avenue and Calgrove Boulevard
NOTES: Lyons Canyon - 2015 NP

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 9000 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.74

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL	70 CNEL	65 CNEL	60 CNEL	55 CNEL
	0.0	0.0	98.9	212.8

TABLE 2015 NP-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/03/2004
ROADWAY SEGMENT: Orchard Village Road between Wiley Canyon Road and Lyons Avenue

NOTES: Lyons Canyon - 2015 NP

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 24000 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.91

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
56.2	112.0	236.9	508.1

TABLE 2015 NP-11
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/03/2004
ROADWAY SEGMENT: Valencia Boulevard between I-5 NB Ramps and Tourney Road
NOTES: Lyons Canyon - 2015 NP

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 51000 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 71.74

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
108.1	222.5	474.3	1019.2

TABLE 2015 NP-13
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/03/2004
ROADWAY SEGMENT: Stevenson Ranch Parkway between The Old Road and I-5 SB Ramps
NOTES: Lyons Canyon - 2015 NP

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 37000 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.79

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
71.9	148.0	315.4	677.8

TABLE 2015 NP-15
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/03/2004
ROADWAY SEGMENT: McBean Parkway between Tournament Road and Orchard Village Road

NOTES: Lyons Canyon - 2015 NP

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 32000 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.71

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
82.9	164.9	348.5	747.4

TABLE 2015 NP-17
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/03/2004
ROADWAY SEGMENT: Pico Canyon Road West of The Old Road
NOTES: Lyons Canyon - 2015 NP

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 33000 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.29

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
67.2	137.4	292.4	628.1

TABLE 2015 NP-19
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/03/2004
ROADWAY SEGMENT: Pico Canyon Road between Marriott Way and Wiley Canyon Road
NOTES: Lyons Canyon - 2015 NP

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 46000 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.74

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
82.0	170.5	364.4	783.5

TABLE 2015 NP-21
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/03/2004
ROADWAY SEGMENT: Pico Canyon Road East of Orchard Village Road
NOTES: Lyons Canyon - 2015 NP

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 44000 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES		
DAY	EVENING	NIGHT
---	---	---
AUTOS		
75.51	12.57	9.34
M-TRUCKS		
1.56	0.09	0.19
H-TRUCKS		
0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.54

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
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79.8	165.6	353.8	760.7

TABLE I-5
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/3/2004
ROADWAY SEGMENT: I-5 FREEWAY
NOTES: 2015 NO PROJECT

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 246000 SPEED (MPH): 65 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	70.30	11.70	8.70
M-TRUCKS	6.53	0.38	0.80
H-TRUCKS	1.38	0.04	0.17

ACTIVE HALF-WIDTH (FT): 48 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 83.92

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
725.8	1560.7	3360.5	7237.9

TABLE 2015 P-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/03/2004
ROADWAY SEGMENT: The Old Road between Valencia Boulevard and McBean Parkway
NOTES: Lyons Canyon - 2015 P

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 24000 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.46

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
71.4	137.6	288.4	617.3

TABLE 2015 P-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/03/2004
ROADWAY SEGMENT: The Old Road between Pico Canyon Road and Marriott Way
NOTES: Lyons Canyon - 2015 P

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 12000 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.98

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	55.9	119.8	257.7

TABLE 2015 P-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/03/2004
ROADWAY SEGMENT: Wiley Canyon Road North of Orchard Village Road
NOTES: Lyons Canyon - 2015 P

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 26000 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.26

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
58.7	117.9	249.7	535.9

TABLE 2015 P-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/03/2004
ROADWAY SEGMENT: Wiley Canyon Road between Tournament Road and Lyons Avenue
NOTES: Lyons Canyon - 2015 P

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 22000 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.53

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	106.0	223.7	479.7

TABLE 2015 P-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/03/2004
ROADWAY SEGMENT:
Orchard Village Road between McBean Parkway and Wiley Canyon Road
NOTES: Lyons Canyon - 2015 P

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 39000 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.02

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
74.2	153.1	326.6	702.0

TABLE 2015 P-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/03/2004
ROADWAY SEGMENT: Valencia Boulevard between The Old Road and I-5 SB Ramps
NOTES: Lyons Canyon - 2015 P

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 29000 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.28

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL	70 CNEL	65 CNEL	60 CNEL	55 CNEL
	78.7	154.9	326.6	700.1

TABLE 2015 P-12
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/03/2004
ROADWAY SEGMENT:
Valencia Boulevard between Tourney Road and Rockwell Canyon Road
NOTES: Lyons Canyon - 2015 P

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 49000 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 71.56

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
105.6	216.8	461.9	992.5

TABLE 2015 P-14
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/03/2004
ROADWAY SEGMENT: McBean Parkway between I-5 NB Ramps and Tournament Road
NOTES: Lyons Canyon - 2015 P

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 50000 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 71.65

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
106.8	219.6	468.1	1005.9

TABLE 2015 P-16
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/03/2004
ROADWAY SEGMENT: McBean Parkway East of Orchard Village Road
NOTES: Lyons Canyon - 2015 P

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 42000 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.89

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
96.5	196.2	417.0	895.7

TABLE 2015 P-18
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/03/2004
ROADWAY SEGMENT: Pico Canyon Road between The Old Road and Marriott Way
NOTES: Lyons Canyon - 2015 P

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 40000 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.13

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
75.3	155.6	332.1	713.9

TABLE 2015 P-20
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/03/2004
ROADWAY SEGMENT:
Pico Canyon Road between Wiley Canyon Road and Orchard Village Road
NOTES: Lyons Canyon - 2015 P

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 41000 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.24

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
76.4	158.2	337.6	725.7

TABLE 2015 P-22
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/03/2004
ROADWAY SEGMENT: Calgrove Boulevard between The Old Road and I-5 SB Ramps
NOTES: Lyons Canyon - 2015 P

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 15000 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.95

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	64.7	138.9	299.1
