NOISE REPORT
LILAC HILLS RANCH
SAN DIEGO COUNTY, CALIFORNIA

SPECIFIC PLAN
GENERAL PLAN AMENDMENT
REZONE
EIR
TENTATIVE MAP (MASTER)
TENTATIVE MAP (PHASE 1 IMPLEMENTING TM)
MAJOR USE PERMIT

PROJECT APPLICANT:
ACCRETIVE INVESTMENTS, INC.
12275 EL CAMINO REAL, SUITE 110
SAN DIEGO, CA 92130
ATTN: JON RILLING
PH: 858-546-0700

COUNTY OF SAN DIEGO
5510 OVERLAND AVENUE, THIRD FLOOR
SAN DIEGO, CA 92123
KIVA PROJECT: 09-0112513
SP 3810-12-001
GPA 3800-12-001
REZ 3600-12-003
TM 5571 ~~RPL3~~RPL4 and 5572 ~~RPL3~~RPL4
MUP 3300-12-005

PREPARER:

WILLIAM A. MADDUX
COUNTY-APPROVED PREPARER

RECON ENVIRONMENTAL, INC.
1927 FIFTH AVENUE
SAN DIEGO, CA 92101
619-308-9333

~~June 5, 2013~~May 13, 2014

THIS PAGE IS INTENTIONALLY BLANK.

TABLE OF CONTENTS

TABLE OF CONTENTS (cont.)

TABLE OF CONTENTS (cont.)

FIGURES

TABLES

TABLE OF CONTENTS (cont.)

ATTACHMENTS

Glossary of Terms and Acronyms

°F	degrees Fahrenheit
ADT	average daily traffic
Caltrans	California Department of Transportation
~~CAL FIRE~~	~~California Department of Forestry and Fire Protection~~
CNEL	Community Noise Equivalent Level
County	County of San Diego
CRV	California Redemption Value
cy	cubic yards
dB	decibel
dB(A)	A-weighted decibel
DC	Design Consideration
du/ac	dwelling unit per acre
EIR	environmental impact report
~~FUHSD~~	~~Fallbrook Union High School District~~
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GPU	General Plan Update
HVAC	heating, ventilation, and air conditioning
Hz	hertz
in/sec	inches per second
I-15	Interstate 15
L_{eq}	equivalent noise level over a period of time
L_{max}	maximum noise level
~~NA~~	~~noise abatement~~
MUP	Major Use Permit
NAP	not-a-part
NSLU	noise sensitive land use
PPV	peak particle velocity
RF	Recycling Facility
RMS	root mean square
SLM	sound level meter
SR-76	State Route 76
TNM	Traffic Noise Model
~~VCPUSD~~	~~Valley Center Pauma Unified School District~~
VdB	vibration decibel
WRF	Water Reclamation Facility

THIS PAGE IS INTENTIONALLY BLANK.

Executive Summary

The proposed 608-acre Lilac Hills Ranch project site is located within the Valley Center and Bonsall Community Planning areas of the unincorporated county of San Diego with State Route 76 to the north, Valley Center proper to the east, the city of Escondido to the south, and Interstate 15 and Old Highway 395 to the west. Project access would be provided at West Lilac Road, which turns into Main Street within the project site. Additional access would be provided by a connection to West Lilac Road via Covey Lane, and gated access would provide emergency access south of the project site to Circle R Drive via Mountain Ridge Road. An additional emergency vehicle access road would be provided via Street "B" via Rodriguez Road.

~~This report analyzes the noise impacts from both construction and operation of the Lilac Hills Ranch Specific Plan project (project).~~ The project would consist of a mix of residential, commercial, and institutional uses, along with parks and open space. Specifically, the project would include: 90,000 square feet of commercial, office, and retail uses, including a 50-room country inn; 903 traditional single-family detached houses; 164 single-family attached houses; 211 residential units within the commercial mixed-use areas; 468 age-restricted residential houses within a senior citizen's neighborhood; necessary facilities and amenities to serve the senior population (including a senior community center, and 200-bed group residential and group care facility); options for civic facilities, including a fire station and a school site (K-8); and public and private neighborhood parks, a private recreational facility, and other recreational amenities. The mixed-use, commercial, and civic uses, with parks, form a Town Center and two Neighborhood Centers, to which residents can walk for various social and commercial needs.

Also planned within the project site are a Recycling Facility (RF), a Water Reclamation Facility (WRF), and other supporting infrastructure. Open space is proposed to retain some of the existing citrus and avocado groves and add additional agricultural open space along with 104.1 acres of sensitive resources including biological/wetland habitat.

~~This report analyzes the noise impacts from both construction and operation of the Lilac Hills Ranch Specific Plan project (project). The project is located on a 608-acre site located 0.25 mile east of Interstate 15 (I-15), south of West Lilac Road in San Diego County, California within the Bonsall and Valley Center community planning group areas.~~

~~The project would consist of a mix of residential, commercial, and institutional uses, along with parks and open space. Specifically, the project would include: 90,000 square feet of commercial, office, and retail, including a 50-room country inn; 903 traditional single-family detached houses; 164 single-family attached houses, 211 residential units within the commercial mixed-use areas; and 468 age-restricted residential houses within a senior citizen's neighborhood; necessary facilities and amenities to serve the senior population~~

~~(including a senior community center, a 200-bed group residential and group care facility); options for civic facilities (~~would include a ~~fire); station and a school site (K-8),~~,~~ ~~); public and private neighborhood parks, a private recreational facility, and other recreational amenities. Also planned within the project site are a Recycling Facility (RF), a Water Reclamation Facility (WRF), and other supporting infrastructure. The mixed-use, commercial, and civic uses, with parks, form a Town Center and two Neighborhood Centers, to which residents can walk for various social and commercial needs. Open space is proposed to retain some of the existing citrus and avocado groves and add additional agricultural open space along with 103.6~~104.1 ~~acres of sensitive resources including biological/wetland habitat.~~

Noise Sensitive Land Uses Affected By Airborne Noise

Traffic-generated noise at exterior receivers would be significant. Mitigation Measure (MM) N-1 requires the dedication of noise protection easements and ~~that~~ require an analysis of noise compatibility at the time sufficient detail is available to determine site-specific mitigation, such as noise walls or site design. To demonstrate that these measures would be effective, refined modeling, which incorporated the proposed grading, was conducted. Based on the results of the refined modeling, grading along West Lilac Road would provide sufficient attenuation to properties east of Main Street without additional mitigation, while properties west of Main Street ~~would require a 6-foot-high sound wall to comply with the County exterior noise sensitive land use (NSLU) standards. For~~and the properties fronting Main Street, located between West Lilac Road and C Street, would require site-specific design for building placement and inclusion of wing walls ~~would be required~~ to reduce noise levels at exterior noise sensitive land use (NSLU) areas. As demonstrated, this mitigation measure would effectively reduce impacts as it would allow the identification of specifications for noise barriers and site design requirements at the time of construction.

Interior noise levels of second-floor receivers adjacent to the roadways could exceed allowable interior noise levels. MM N-2 requires an interior analysis of those receivers to be conducted when specific building plans are available to determine whether interior noise levels would ~~not~~ exceed the applicable standard for the subject land use. This mitigation measure would be effective in identifying those units where additional noise-reduction measures may be indicated allowing a reduction in interior noise to a level that is less than significant. This mitigation measure would effectively reduce impacts because it will allow the identification of the specifications for structural components and other noise mitigation at the time of construction. Therefore, it is concluded that with mitigation noise impacts to NSLU would be less than significant.

Project-Generated Airborne Noise

Noise at exterior receivers due to the stationary sources would be a potentially significant impact. Stationary sources of concern include mechanical equipment, such as heating, ventilation, and air conditioning (HVAC) units and other venting, electrical generators,

parking lots, loading docks, recreational and educational facilities, and the dog parks. Additionally, the project includes the construction and operation of a WRF and a RF. Thus, MM N-3 through MM N-7 would be required to demonstrate through analysis that airborne noise levels would be reduced to comply with the County property line limits and impacts would be less than significant level~~s~~.

~~As discussed,~~ W~~w~~ith the consideration of project design features, construction noise levels would not exceed the County's construction noise level limit of 75 A-weighted decibel equivalent noise level at adjacent property lines with the exception of properties within the boundary of the project. As these properties are located within the project boundary there is a possibility that on-site residences that are "not-a-part" (NAP) of the project could have construction occur along more than one property line, which would potentially create a doubling (+3) or even quadrupling (+6) of construction noise levels over those calculated if construction were to occur along two or more sides simultaneously. Therefore, if construction were to occur along more than one side of a NAP residence, property construction noise levels would exceed 75 dB(A) L_{eq} (A-weighted decibels equivalent noise level over a period of time). MM N-8 provides restrictions that would limit construction activities and reduce these impacts to less than significant.

As the expansion of Miller Station could occur after development of Phase 1, there is a potential to exceed the County construction noise limit at future occupied residential properties, which is a significant impact. However, potential impacts associated with the expansion of Miller Station would be mitigated with the incorporation of MM N-9.

As the location of rock crushing activities has not been identified, rock crushing activities could exceed the County construction noise level limits and are considered significant. Impacts associated with rock crushing activities would be mitigated with the incorporation of MM N-10.

Potential impulsive noise impacts due to blasting would be mitigated with the incorporation of MM N-11. No other mitigation is required for construction noise control. Therefore, it is concluded that with mitigation, stationary and construction noise impacts would be less than significant.

Groundborne Vibration and Noise Impacts

There are no substantial vibration sources associated with project operation. Therefore, vibration impacts associated with project operation are less than significant.

During project grading and blasting operations, potential impacts associated with the exposure of a noise-sensitive land use to groundborne vibration levels would be significant, which would be reduced by mitigation measure MM N-11. Heavy equipment operation would also result in significant vibrations and would be mitigated by MM N-12. Therefore, it

is concluded that with mitigation groundborne vibration impacts would be less than significant.

1.0 Introduction

This report analyzes the noise impacts from both construction and operation of the Lilac Hills Ranch Specific Plan project (project). This report was prepared by RECON Environmental, Inc. (RECON), for Accretive Investments, Inc. The project site consists of a 608-acre site located 0.25 mile east of Interstate 15 (I-15) south of West Lilac Road in San Diego County, California near the Bonsall and Valley Center community planning group areas (Figure 1).

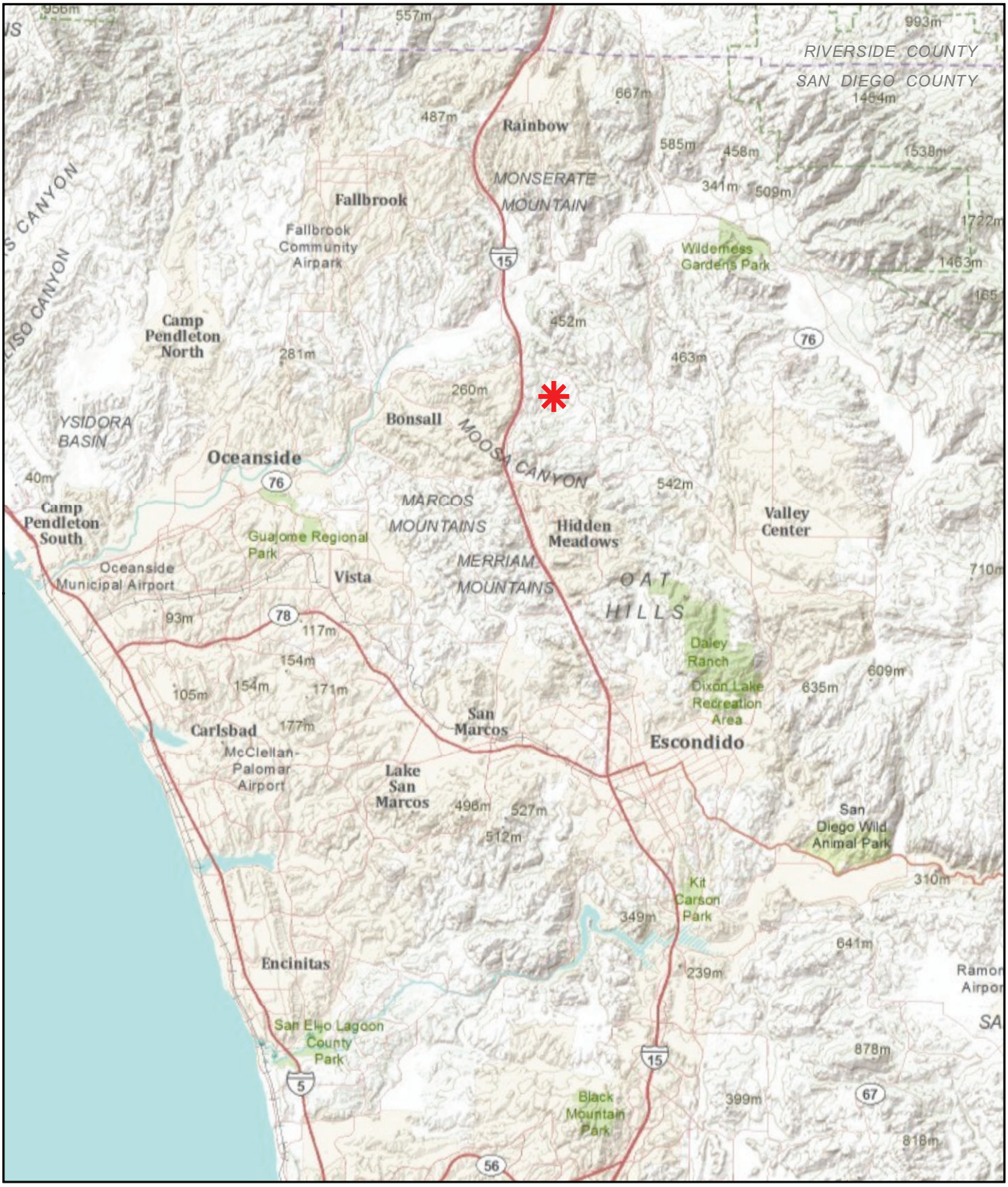
The purpose of this analysis is to characterize the existing noise conditions, identify applicable regulations (i.e., County of San Diego General Plan Noise Element [County of San Diego 2011] and the County Noise Ordinance [County of San Diego 2009a]), assess noise impacts from construction and operation of the project, and identify mitigation measures and/or design considerations to reduce potential impacts. This report was prepared in accordance with the County's Guidelines for Determining Significance and Report Format and Content Requirements, Noise (County's Noise Guidelines) (County of San Diego 2009b). References cited in this report can be found in Attachment 1. The results of this noise report will be incorporated into an environmental impact report (EIR) prepared pursuant to the California Environmental Quality Act.

1.1 Project Description

[Subchapter 1.1 has been updated to clarify the project description.]

The project would consist of a mix of residential, commercial, and institutional uses, along with parks and open space. Specifically, the project would include 90,000 square feet of commercial, office and retail uses, including a 50-room country inn; 903 traditional single-family detached residences; 164 single-family attached residences; 211 residential units within commercial mixed-use areas; 468 age-restricted residences within a senior citizen's neighborhood; necessary facilities and amenities to serve the senior population (including a senior community center, and 200-bed group residential and group care facility); options for civic facilities, including a fire station and a school site (K-8); and public and private neighborhood parks, a private recreational facility, and other recreational amenities. The mixed-use, commercial, and civic uses, with parks, form a Town Center and two Neighborhood Centers, to which residents can walk for various social and commercial needs. As defined in the Lilac Hills Ranch Specific Plan, the residential component of the project consists of 1,746 units with an overall density less than 2.9 dwelling units per acre.

Also planned within the project site are a RF, a WRF, and other supporting infrastructure. Open space is proposed to retain some of the existing citrus and avocado groves, and allows 104.1 acres of sensitive resources including biological/wetland habitat.



Project Location

FIGURE 1

Regional Location

RECON

M:\JOBS4\6153\common_gis\fig1.mxd 9/12/2011

The project application includes a Specific Plan (SP12-001), a General Plan Amendment (GPA 12-001), a Rezone (REZ 12-003), a Master Tentative Map (TM 5571 RPL 4), an implementing Tentative Map for Phase 1 (TM 5572 RPL 4), one site plan (S12-018 for Parks), and a MUP for the WRF (MUP 12-005). The project would be implemented in five phases. Additional discretionary permits may be needed to implement latter phases, as identified in the Specific Plan.

1.1.1 Project Location

The project site is located in the unincorporated portion of San Diego County in the westernmost portion of the Valley Center Community Plan Area and easternmost portion of the Bonsall Community Plan Area, and adjacent to I-15 and Old Highway 395, as illustrated on Figures 1 and 2. From the northwest project corner, West Lilac Road serves as the northern boundary of the project site, while Rodriguez Road serves generally as the project boundary to the south and east. From the southwest project corner, the western boundary of the project runs along Old Highway 395/Shirey Road and extends to Standell Lane. From there, the project site extends back to Shirey Road, which serves as the northwestern project boundary.

1.1.2 Project's Component Parts

1.1.2.1 Plan Amendments

In order to develop the proposed project, a number of land use changes to the General Plan, the Valley Center Community Plan, and Bonsall Community Plan are required. These include an amendment to the Regional Land Use Element Map, an amendment to the Valley Center Community Plan, an amendment to the Bonsall Community Plan, an amendment to the Regional Mobility Element, a rezone, adoption of the Lilac Hills Ranch Specific Plan, two tentative maps, two site plans, and a major use permit.

1.1.2.2 Rezone

The majority of the project site, which lies within the Valley Center Community Plan Area, is zoned "Limited Agriculture"; the portion of the site, which lies within the Bonsall Community Plan Area, is zoned "Rural Residential". The project includes a Rezone (R12-003), as illustrated in Figure 3, which would replace the existing Rural Residential and Limited Agriculture Use Regulations with two new Use Regulations:

1. Outside of the Town Center and two Neighborhood Centers, the project site would be rezoned with the Urban Residential (RU) Use Regulation.
2. The Town Center would be rezoned with the General Commercial–Residential C34 Use Regulation, as would be the two Neighborhood Centers south of the Town Center and the RF.

1.1.2.3 Specific Plan

This Specific Plan (SP12-001) provides the guidelines for implementation of the project, including future approvals and improvement plans, and establishes permitted land uses, densities, maximum number of residential units, required public facilities, and phasing and implementation mechanisms, and demonstrates compliance with applicable County policies. In addition to establishing regulations and zoning for the proposed planning areas, the Specific Plan also sets forth guidelines for the character and design of the project site, including architectural and landscape design guidelines.

a. Specific Plan Planning Areas

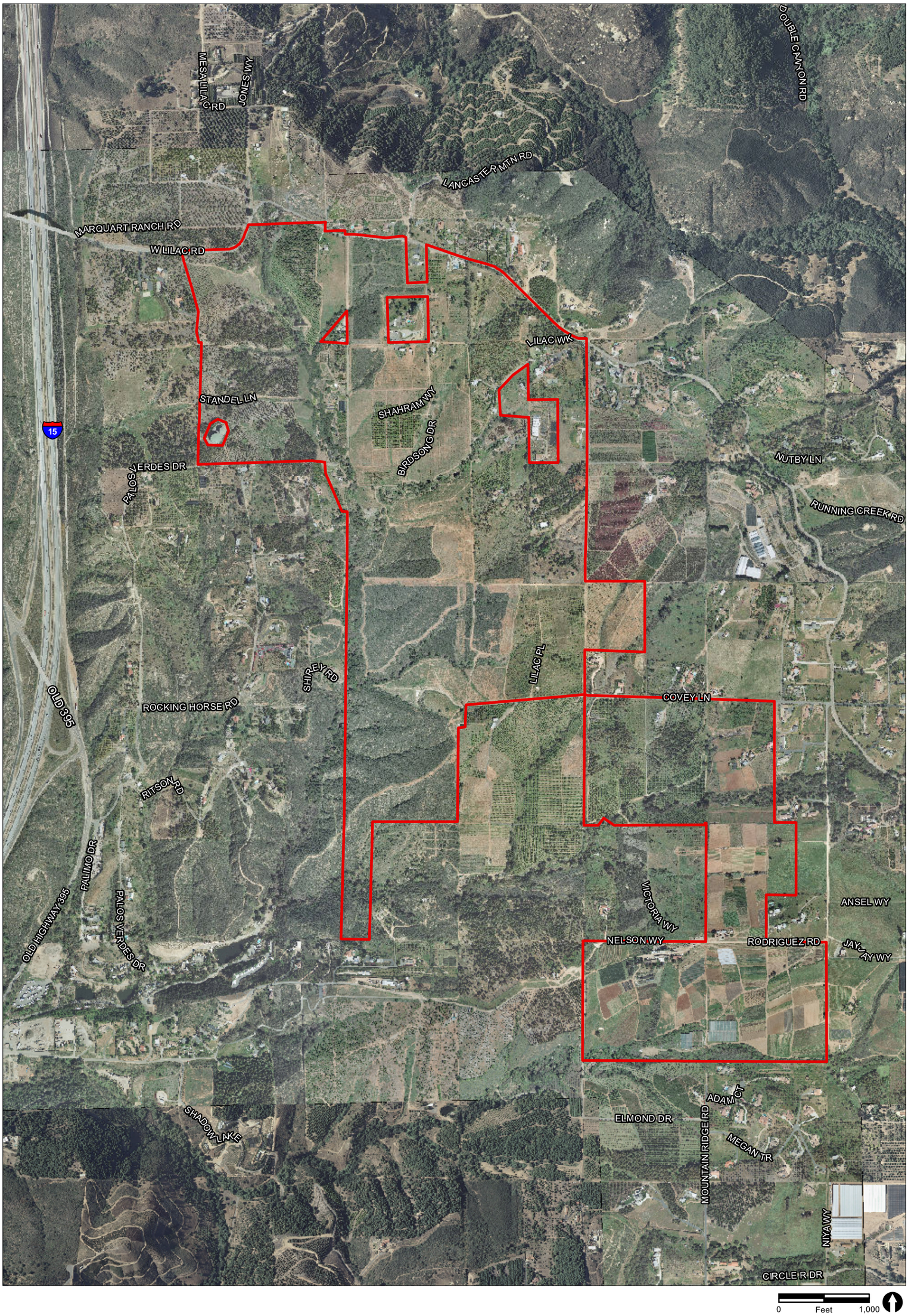
The project would be implemented in five phases, as discussed below. Table 1 provides a summary of the planning areas by category and their associated zoning.

TABLE 1
PLANNING AREA SUMMARY

Land Use	Planning Areas	Gross Acreage	Dwelling Units/ Square Feet (s.f.)
Single-family Detached	SFD	156.9	903
Single-family Senior	SFS	76.9	468
Single-family Attached	SFA	7.9	164
Group Residential/Group Care	GR	6.5	N/A
Commercial and Mixed-Use	C	15.3	211/ (90,000 s.f.)
K-8 School Site	S	12.0	N/A
Institutional Use	I	10.0	N/A
Parks - Dedicated to County	P10	13.5	N/A
Parks - HOA	P	10.1	N/A
Community Purpose Facility	CPF	2.0	N/A
Biological Open Space	OS	104.1	N/A
Common Areas/Agricultural Buffers	--	20.3	N/A
Manufactured Slopes	--	68.2	N/A
Circulating and Non-Circulating Roads	--	83.3	N/A
Water Reclamation Facility	WRF	2.4	N/A
Recycling Facility/Trail Head/Staging Area	RF	0.6	N/A
Detention Basins	DB	7.9	N/A
Wet Weather Storage	WWS	8.1	N/A
TOTAL		**608**	**1,746**

The Specific Plan map (Figure 4) shows the community divided into multiple planning areas with types of land uses ranging from single-family residential to biological open space. The phasing map (see Figure 3) shows how the community has been divided into five phases with Phase 1 at the northeast corner and Phase 5 in the southeast corner of the community.

Image source: Custom image provided by client (flown March 2012), and SanGIS (flown May 2012)



RECON

M:\JOBS4\6153\common_gis\fig2_air.mxd 5/28/2013

FIGURE 2

Project Location on an Aerial Photograph

THIS PAGE IS INTENTIONALLY BLANK.

Map Source: Vance and Associates, 2014

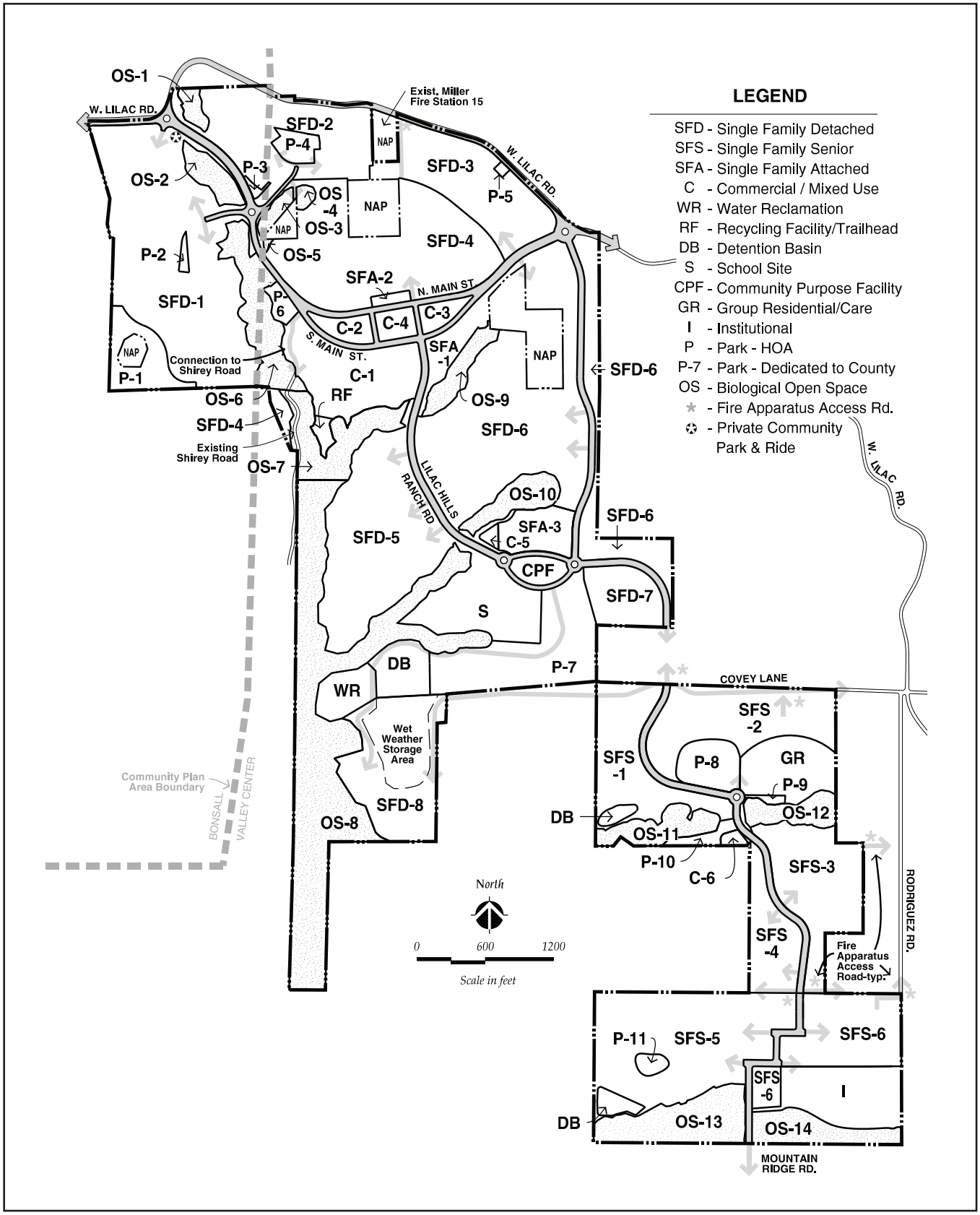
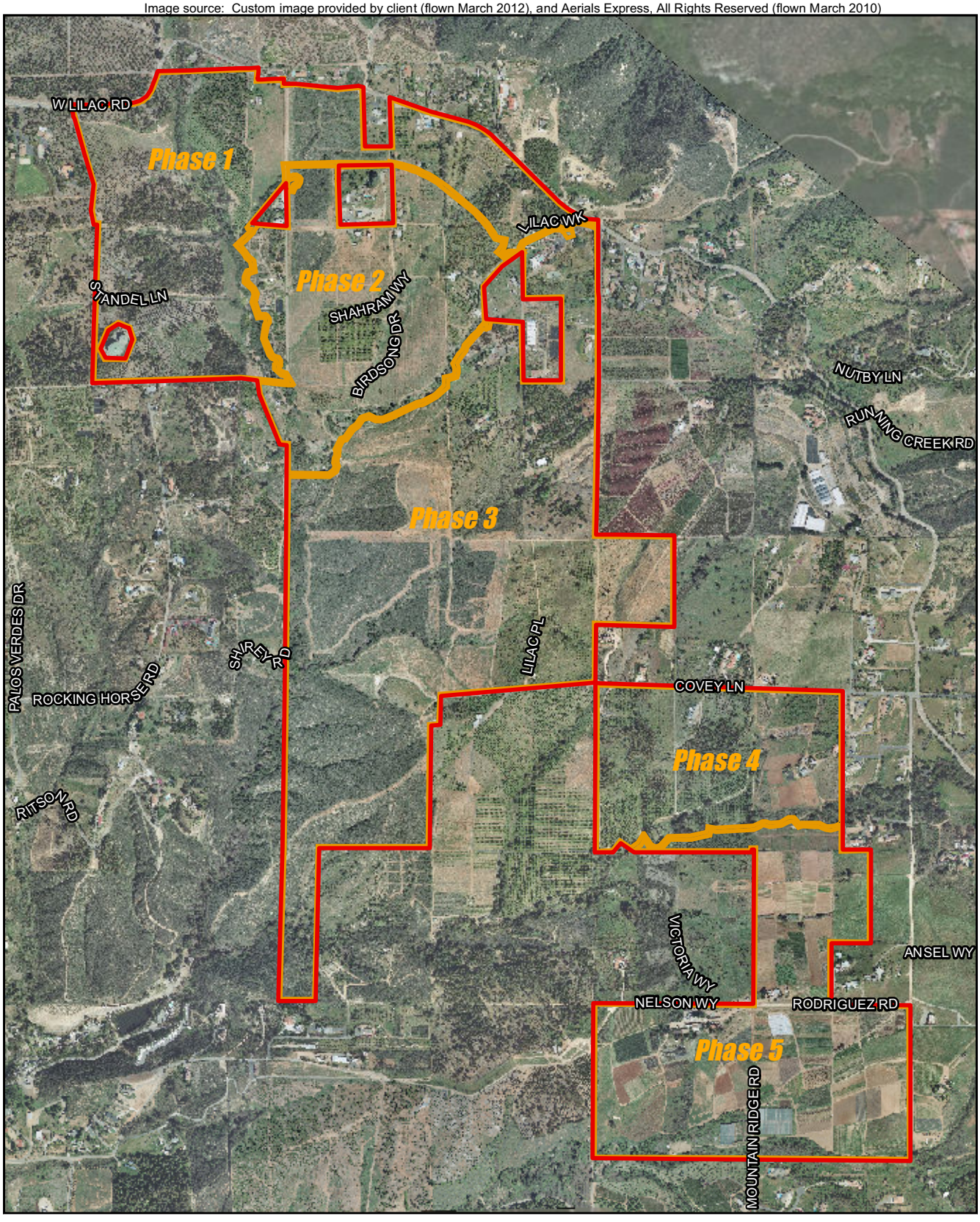


FIGURE 3
Specific Plan Map

RECON

M:\JOBS4\6153\ghg\fig3.ai 04/09/14

Image source: Custom image provided by client (flown March 2012), and Aerials Express, All Rights Reserved (flown March 2010)



RECON

M:\JOBS4\6153\common_gis\fig4_air.mxd 2/6/2013 sab

FIGURE 4

Project Phases

Phase 1 encompasses 121.5 acres and would be located in the northern portion of the project site, adjacent to West Lilac Road. This area would include 352 single-family detached units, along with 4.5 acres of public pocket park(s).

Phase 2 would be located just south of Phase 1, is the only Phase which is entirely surrounded by the other phases of the project (Phases 1 and 3), and is not adjacent to any existing homes or parcels. The 89.6-acre area would include the location of the Town Center and a maximum of approximately 196 single-family detached units, 59 single-family attached units, and 211 mixed-use residential units; 80,000 square feet of commercial space; and 0.8 acres of park, and a 2.0-acre Village Green. The RF would also be located within this phase, south of the Town Center.

Phase 3 encompasses 223 acres and would be located directly south of Phase 2. This phase would include the construction of a maximum of 355 single-family detached and 105 single-family attached dwelling units and 7,500 square feet of commercial space. Also located within Phase 3 would be a 2.0-acre Community Purpose Facility area composed of a fire station and private recreational center not to exceed 40,000 square feet, combined. The WRF, a detention basin, and a 13.5-acre public park are also included with Phase 3.

Phase 4 would be located southeast of Phase 3. A total of 171 age-restricted/single-family detached homes and 2,500 square feet of commercial uses are proposed on 61.5 acres. Primary access to Phase 4 would be via Lilac Hills Ranch Road from Phase 3. Covey Lane would provide alternative access, and secondary emergency access would be provided via Street "B", connecting to Rodriguez Road on the east. Also proposed within Phase 4 are a 3.3-acre senior center, a private park, a 200-unit Group Residential/Group Care facility (these units are permitted to have small private kitchens in addition to the facility group kitchen), a half-acre pocket park, and a detention basin.

Phase 5 would be located directly south of Phase 4. Phase 5 would include 297 age-restricted/single-family senior detached homes, 2,500 square feet of commercial space, and 10.0 acres for a religious/institutional use. Also included in Phase 5 is a detention basin. Primary access would be from a connection to Lilac Hills Ranch Road constructed in Phase 4 to the north, and a secondary fire apparatus access road would be provided via Rodriguez Road to the east and Mountain Ridge Road to the south for the Institutional parcel. Mountain Ridge Road is planned to be a gated road that will be accessible only by a portion of Phase 5 residence and opened during emergencies to facilitate evacuation of residents in the area during an emergency.

b. Construction

Infrastructure

Required roadway improvements and storm drains would be constructed in phases to ensure that improvements are in place at the time of need. The Specific Plan and Traffic

Impact Study prepared for the project detail when roadway improvements occur in relation to residential occupancies of the phases. Water and wastewater facilities, along with dry utilities, would be phased as the residential units are occupied.

On-Site

The project would require on-site grading and improvements, including fuel modification zones, on 505.3 acres of the site, as depicted on the conceptual grading plan. Both cuts and fills are proposed within each grading area. Fill material would be transferred between the areas as required.

All grading would be balanced on-site. The maximum (worst case) grading/construction conditions are based on grading actively 10 acres per day per phase[1]. Blasting would occur by phase and would occur at various times during each phase as the grading reaches an appropriate depth. Rock crushing would be required and would occur on-site, as needed, for continuous periods of less than 30 days.

Grading would be balanced with an estimated 4.07 million cubic yards (cy) of cut and fill (less than 2,300 cy per home), without the need for export or import of soil. The majority of cut and fill slopes would be approximately 10 feet, and approximately 85 percent of all cubic yardage moved would be less than 20 feet deep. The grading plan also includes three hydromodification basins, located throughout the project site.

On-site grading quantities by phase are shown in Table 2, below. A detailed grading plan has been prepared for only Phase 1, in conjunction with the Tentative Map. Grading plans also would be required in conjunction with Tentative Maps for future phases.

TABLE 2
GRADING QUANTITIES BY PHASE (cy)

Phase	Cut	Fill	Net
1	715,000	860,000	(145,000)
2	635,000	830,000	(195,000)
3	1,815,000	1,260,000	555,000
4	295,000	420,000	(125,000)
5	610,000	700,000	(90,000)
TOTAL	4,070,000	4,070,000	-

cy = cubic yards

[1]This is based on a 50,000 cubic yard a day cut, transport, and spread. (50,000 cy/27=X/10 ft=Y/43,560 sq ft =Z acres * 3 activities = ~10 acres, then assume a max of two crews working on site for 20).

c. Off-site Roadway Improvements

The project would improve the following off-site roadways:

- West Lilac Road
- Gopher Canyon Road/I-15 Northbound Ramps
- Gopher Canyon Road/I-15 Southbound Ramps
- Mountain Ridge Road to Circle R Drive
- Covey Lane to West Lilac Road
- Street "B" to Rodriguez Road
- Rodriguez Road from the project site to Covey Lane

d. Blasting

Blasting would be required for several areas within the project site. Deep blasting (greater than 50 feet in depth) would occur in one location within the project site, near the detention basin in Phase 3. Blasting in this location is anticipated to remove 1,500 cy of material. Moderate depth blasting (30–40 feet below existing grade) would occur in several areas across the site and occur within each phase. Blasting in these locations is anticipated to remove 24,000 cy of material. Shallow blasting would occur in two locations (Phases 1 and 4) and would remove approximately 28,000 cy of material. In total, between 1 to 2 percent of the total volume of material (a total of approximately 81,400 cy) to be moved would be the result of blasting.

e. Construction Vehicles and Equipment

A variety of equipment would be used during the construction of the project. All equipment would be Tier III, operational for eight hours per day. The maximum equipment that would be operational at any one particular time includes: 1 concrete/industrial saw, 4 tractors/loaders/backhoes, 6 crawler tractors, 5 rubber-tired loaders, 2 bore/drill rigs, 1 grader, 8 scrapers, 1 crane, 3 forklifts, 2 generator sets, 1 welder, 2 pavers, 2 paving equipment, 2 rollers, and 2 air compressors.

Blasting operations would require three to four drill rigs working per day. To accomplish 81,400 cy of cut, blasting would occur over approximately 9 days during the entire build-out of the project (based on each blast generating approximately 10,000 cy per blast). One or two hoe rams would be working on-site for the majority of grading, along with a mobile rock crusher. The mobile rock crusher would be utilized a total of 2 to 3 months maximum, spread out over 6 to 12 months (may move in and out as needed), per phase.

Construction vehicles would access the project site via I-15, Old Highway 395, and West Lilac Road. Construction staging areas would be located within areas proposed for grading within the project site. The grading equipment to be used for the project would be brought to the site at the beginning of the grading period and would remain on-site until the

completion of the grading period (e.g., equipment would not be hauled to and from the site daily). A traffic control plan, approved prior to grading, would be prepared to minimize traffic impacts to surrounding communities.

1.2 Environmental Settings and Existing Conditions

1.2.1 Noise Terminology

The unit of measurement used to describe a noise level is the decibel (dB). Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used for earthquake magnitudes. A 10 dB increase represents a 10-fold increase in sound intensity, a 20 dB change is a 100-fold difference, 30 dB is a 1,000-fold increase, etc. Thus, a doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dB; a halving of the energy would result in a 3-dB decrease.

The human ear is not equally sensitive to all frequencies within the sound spectrum. Therefore, a method called "A-weighting" is used to filter noise frequencies that are not audible to the human ear. A-weighting approximates the frequency response of the average young ear when listening to most ordinary everyday sounds. When people make relative judgments of the loudness or annoyance of a sound, their judgments correlate well with the "A-weighted" levels of those sounds. Therefore, the A-weighted noise scale is used for measurements and standards involving the human perception of noise. In this report, all noise levels are A-weighted and "dB(A)" is understood to identify the A-weighted decibel.

In addition to noise levels, the duration or exceedance of noise over time is also important for the assessment of potential noise disturbance. Average noise levels over a period of minutes or hours are usually expressed as dB(A) L_{eq}, or the equivalent noise level for that period. The period of time averaged may be specified; $L_{eq(3)}$ would be a 3-hour average; when no period is specified, a 1-hour average is assumed.

The timing of noise is also an important factor to consider in assessing potential noise impacts as noise levels that may be acceptable during the day may create disturbance during evening or nighttime hours. Community Noise Equivalent Level (CNEL) is the energy average of the A-weighted sound levels occurring during a 24-hour period, with a 5 dB(A) penalty added to the sound levels occurring between 7:00 p.m. and 10:00 p.m. and 10 dB(A) added to the sound levels occurring between 10:00 p.m. and 7:00 a.m.

Human perception of noise has no simple correlation with acoustical energy. The perception of noise is not linear in terms of dB(A) or in terms of acoustical energy. Two equivalent noise sources do not sound twice as loud as one source. It is widely accepted that the average

healthy ear can barely perceive changes of 3 dB(A), increase or decrease; that a change of 5 dB(A) is readily perceptible; and that an increase (decrease) of 10 dB(A) sounds twice (half) as loud (California Department of Transportation [Caltrans] 201309). Table 3 provides examples of common activities and the sound levels associated with those activities.

From the source to the receiver, noise changes both in level and frequency spectrum. The most obvious change is the decrease in noise as the distance from the source increases. The manner in which noise reduces with distance depends on the following important factors: ground absorption, atmospheric effects and refraction, shielding by natural and man-made features, noise barriers, diffraction, and reflection. For a point or stationary noise source, such as construction equipment, the attenuation or drop-off in noise level would be at least -6 dB(A) for each doubling of unobstructed distance between source and the receiver and could increase to -7.5 dB(A) depending on the acoustic characteristics of the intervening ground. For a linear noise source, such as vehicles traveling on a roadway, the attenuation or drop-off in noise level would be approximately -3 dB(A) for each doubling of unobstructed distance between source and the receiver and could increase to -4.5 dB(A) depending on the acoustic characteristics of the intervening ground.

TABLE 3
TYPICAL NOISE LEVELS

Common Outdoor Activities	Noise Level dB(A)	Common Indoor Activities
	110	Rock Band
Jet Fly-over at 300 m (1,000 feet)	100	
Gas Lawn Mower at 1 m (3 feet)	90	
Diesel Truck at 15 meter (50 feet), at 80 kilometer/hour (50 mph)	80	Food Blender at 1 meter (3 feet) Garbage Disposal at 1 meter (3 feet)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 meters (100 feet)	70	Vacuum Cleaner at 3 meters (10 feet)
Commercial Area Heavy Traffic at 90 meters (300 feet)	60	Normal Speech at 1 meter (3 feet)
Quiet Urban Daytime	50	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	30	Library
Quiet Rural Nighttime	20	Bedroom at Night, Concert Hall (Background)
	10	Broadcast/Recording Studio
	0	Lowest Threshold of Human Hearing

SOURCE: Caltrans 20092013a.

A large object in the path between a noise source and a receiver can significantly attenuate noise levels at that receiver. The amount of attenuation provided by this "shielding" depends on the size of the object and the frequencies of the noise levels. Natural terrain features, such as hills and dense woods, as well as man-made features, such as buildings and walls, can significantly alter noise levels. Walls or berms are often specifically used to reduce or attenuate noise.

Noise-sensitive receptors are generally considered humans engaged in activities, or occupying land uses, that may be subject to the stress of significant interference from noise. Human activities usually associated with sensitive receptors include, but are not limited to, talking, reading, and sleeping. Land uses associated with noise sensitive human receptors include residential dwellings including mobile homes, hotels/motels, hospitals, nursing homes, educational facilities, and libraries. In addition to human receptors, protected animal species and their habitats may be considered sensitive noise receptors, especially during their breeding season.

1.2.1.1 Settings and Location

The majority of the proposed project site is located in the westernmost portion of the Valley Center Community Plan Area of San Diego County. A small portion is within the southeastern portion of the Bonsall Community Plan Area. The project site is located east of I-15 and Old Highway 395 immediately south of West Lilac Road.

The existing site is predominately zoned agricultural (A70) and rural residential (RR). The A70 zone covers the majority of the site. The RR zone is generally located in the north western portion of the site located north and south of West Lilac Hills Road and west of Shirley Road. The surrounding properties are all zoned A70 or RR5.

1.2.2 Existing Noise Conditions

The primary continuous existing noise source at the project site and within the vicinity is vehicle traffic on I-15 to the west and traffic on local roadways. Secondary and intermittent noise sources include tractors, discing, tree trimming and branch grinding, as well as delivery activities associated with agricultural activities. Existing traffic volumes for I-15 and local roadways are shown in Table 4. These roadways have been included for consistency with the Traffic Impact Study prepared for the project. Additionally, it is generally required that a noise analysis assess the locations where the traffic analysis provides information on volumes.

TABLE 4
MODELING TRAFFIC VOLUMES

Roadway	Segment	ADT Volumes		
		Existing	Phase 1	Phase 1-5
I-15	Riverside County Boundary to Old Highway 395	134,000	134,590	136,550
	Old Highway 395 to SR-76	134,000	134,610	136,640
	SR-76 to Old Highway 395	113,000	113,530	115,320
	Old Highway 395 to Gopher Canyon Rd	110,000	111,160	113,700
	Gopher Canyon Rd to Deer Springs Rd	117,000	118,160	121,580
	Deer Springs Rd to Centre City Pkwy	117,000	117,940	121,050
	Centre City Pkwy to El Norte Pkwy	111,000	111,750	114,210
	El Norte Pkwy to SR-78	127,000	127,690	129,970
	SR-78 to W Valley Pkwy	192,000	192,510	194,200
	W Valley Pkwy to Auto Pkwy	179,000	179,430	180,850
	Auto Pkwy to W Citracado Pkwy	172,000	172,420	173,800
	W Citracado Pkwy to Via Rancho Pkwy	196,000	196,370	197,590
	Via Rancho Pkwy to Bernardo Dr.	198,000	198,340	199,470
	Bernardo Dr. to Rancho Bernardo Rd	201,000	201,320	202,380
	Rancho Bernardo Rd to Bernardo Center Dr.	209,000	209,200	210,290
	Bernardo Center Dr. to Camino Del Norte	214,000	214,290	215,230
E. Dulin Road	Old Highway 395 to SR-76	1,830	2,320	3,960
West Lilac Road	Camino Del Rey to Camino Del Cielo	2,270	2,470	3,160
	Camino Del Cielo to Old Highway 395	2,140	2,410	3,290
	Old Highway 395 to W. Main Street	1,150	4,310	~~12,650~~13,400
	~~W.~~ Main Street to ~~E. Main~~F Street	1,150	1,500	2,960
	~~E. Main~~F Street to Covey Lane	1,150	1,500	1,810
	Covey Lane to Circle R Drive	480	830	~~1,660~~2,130
	Circle R Drive to Lilac Road	1,170	1,490	2,470
Camino Del Cielo	Camino Del Rey to West Lilac Road	630	640	680
Olive Hill Road	Shamrock Road to SR-76	3,380	3,400	3,470
Camino Del Rey	SR-76 to Old River Road	9,350	9,420	9,660
	Old River Road to West Lilac Road	8,640	8,850	9,560
	West Lilac Road to Camino Del Cielo	6,730	6,740	6,790
	Camino Del Cielo to Old Highway 395	4,850	4,870	4,950
Gopher Canyon Road	E. Vista Way to I-15 SB Ramps	15,320	15,450	15,890
	I-15 SB Ramps to I-15 NB Ramps	12,390	12,520	13,~~480~~320
	I-15 NB Ramps to Old Highway 395	11,870	12,000	13,~~440~~140
Circle R Drive	Old Highway 395 to Mountain Ridge Road	4,030	4,060	5,~~940~~210
	Mountain Ridge Road to West Lilac Road	1,770	1,800	2,380~~6,970~~
Old Castle Road	Old Highway 395 to Lilac Road	6,840	6,870	6,970~~15,330~~
E. Vista Way	SR-76 to Gopher Canyon Road	15,120	15,160	15,330~~21,340~~
	Gopher Canyon Road to Osborne Street	21,020	21,090	21,340~~4,690~~
Old River Road	SR-76 to Camino Del Rey	4,070	4,210	4,690~~5,210~~

TABLE 4
MODELING TRAFFIC VOLUMES

Roadway	Segment	ADT Volumes		
		Existing	Phase 1	Phase 1-5
Old Highway 395	Pala Mesa Drive to SR-76	4,770	4,870	5,210~~6,230~~
	SR-76 to E. Dulin Road	4,720	5,070	6,230~~8,010~~
	E. Dulin Road to West Lilac Road	4,340	5,190	8,010~~10,580~~
	West Lilac Road to I-15 SB Ramps	4,450	6,400	~~6,840~~11,340
	I-15 SB Ramps to I-15 NB Ramps	3,600	4,700	~~3,190~~7,450
	I-15 NB Ramps to Camino Del Rey	2,430	2,730	~~6,650~~3,640
	Camino Del Rey to Circle R Drive	5,820	6,080	~~12,670~~7,100
	Circle R Drive to Gopher Canyon Road	10,710	10,940	12,370~~9,050~~
	Gopher Canyon Road to Old Castle Road	8,660	8,750	9,050~~4,440~~
Champagne Boulevard	Old Castle Road to Lawrence Welk Drive	4,170	4,230	~~1,910~~4,440
Pankey Road	Pala Mesa Drive to SR-76	70	70	70
Lilac Road	Couser Canyon Road to West Lilac Road	1,150	1,200	1,380
	West Lilac Road to Old Castle Road	2,640	2,890	3,720
	Old Castle Road to Anthony Road	9,010	9,240	10,020
	Anthony Road to Betsworth Road	8,740	8,870	9,330
	Betsworth Road to Valley Center Road	9,620	9,730	10,100
Valley Center Road	Woods Valley Road to Lilac Road	21,290	21,310	21,370
	Lilac Road to Miller Road	24,280	24,370	24,670
	Miller Road to Cole Grade Rd	22,440	22,530	22,820
	Cole Grade Road to Vesper Road	11,490	11,540	11,710
Miller Road	Misty Oak Road to Valley Center Road	1,460	1,470	1,480
Cole Grade Road	Fruitvale Road to Valley Center Road	10,660	10,690	10,780
Mountain Ridge Road	Project Southern Boundary to Circle R Drive	160	160	2,220
Covey Lane	Project Eastern Boundary to West Lilac Road	190	190	1,110
Lilac Hills Ranch Road	Phase 3 to Phase 4	DNE	DNE	2,060

NOTES: ADT = average daily traffic; DNE = does not exist, SR-# = State Route.
SOURCE: Chen Ryan ~~2013~~2014

1.2.2.1 Noise Measurements and Observations

~~Eight~~Based on noise measurement guidance published by Caltrans, a noise measurement representing an hourly L_{eq} does not need to last the entire hour. As long as noise levels do not change significantly, a shorter time period is sufficient to represent the entire hour of interest (Caltrans 2013a). The recommended length of measurements depends on how much the noise levels fluctuate and generally range from 10 to 30 minutes. Traffic noise also becomes more constant as the distance from the highway increases, because the rate of distance change between a moving vehicle and a receiver diminishes (Caltrans 2013a). As I-15 is the dominant noise source in the project area, observed noise levels in the project area fluctuated little and a measurement duration of 15 minutes was chosen to characterize

typical ambient noise levels. Therefore, eight 15-minute noise measurements were taken within the project site boundaries on July 25, 2012. The locations of the noise measurements are shown in Figure 5. A summary of the measurements is presented in Table 5.

TABLE 5
NOISE MEASUREMENT SUMMARY

ID	Description	Start Time/ Duration	Noise Level dB(A)				Notes
			L_{eq}	L_{Max}	L_{min}	L_{90}	
1	30 feet East of Shirley Road	11:02 a.m./ 15 minutes	45.1	66.7	34.5	37.7	Traffic on I-15 dominant source, Lilac Road traffic minor, as well as aircraft and animal vocalizations.
2	30 feet east of Birdsong Road	11:26 a.m./ 15 minutes	41.9	61.7	32.1	35.4	Traffic on I-15 and aircraft were minor sources.
3	20 feet south of Lilac Walk	11:51 a.m./ 15 minutes	40.7	55.9	31.9	35.8	Traffic on I-15, aircraft, and animal vocalizations were minor sources.
4	50 feet south of West Lilac Road	3:38 p.m./ 15 minutes	58.8	80.4	36.9	41.4	Traffic on I-15 dominant source, aircraft and animal vocalization.
5	50 feet North of West Lilac Road	12:17 p.m./ 15 minutes	52.7	79.0	31.1	34.3	Traffic on I-15, aircraft, and animal vocalizations were minor sources.
6	50 feet north of Covey Lane	12:40 p.m./ 15 minutes	43.9	67.0	33.8	36.4	Traffic on I-15, aircraft, and animal vocalizations were minor sources.
7	30 feet north of Nelson Way	2:23 p.m./ 15 minutes	40.1	61.3	34.9	37.4	Traffic on I-15 aircraft and animal vocalizations were minor sources.
8	30 feet east of Rocking Horse Road	3:09 p.m./ 15 minutes	54.1	61.2	49.0	52.3	Traffic on I-15 dominant source, Lilac Road traffic secondary, aircraft and animal vocalizations were minor sources.

*The Site ID corresponds to locations shown in Figure 5.
L_{eq} – Average noise level for the measurement period; L_{max} – Maximum noise level for the measurement period;
L_{min} – Minimum noise level for the measurement period; L_{90} – Noise level exceeded 90 percent of the time during the measurement period.

~~The dominant noise source at the project site is traffic noise from I-15 with additional traffic noise attributed to local roadways.~~The measurement locations were chosen to represent the general noise environment in the project area and are sufficient to identify major noise sources and to characterize typical noise levels in the project vicinity. The dominant noise source at the project site is traffic noise from I-15. Local roadways also contributed to ambient noise levels; however, the contribution was minor compared to I-15 unless in very close proximity to the roadway when a vehicle passed by. Noise measurements in close proximity to the local roadways included traffic counts and were used to validate the traffic noise model. Secondary noise sources included distant aircraft, tractors, tree-trimming activities, and other noise sources associated with agricultural activities. Background noise levels can be estimated based on the L_{90} measurements (which represent the noise level

exceeded 90 percent of the time during the measurement) for each location. Background noise levels at the project site were measured between 34 and 52 dB(A)$_{L90}$. with the higher ambient noise levels occurring closest to I-15.

1.3 Methodology and Equipment

1.3.1 Noise Measuring Methodology and Procedures

Noise levels were measured within the project site and in the surrounding community with a Larson-Davis Model 820 sound level meter (SLM). All measurements were taken at a height of five feet above existing ground level. SLM calibrations were checked before and after use. The following parameters were used for the noise measurements:

Filter:	A-weighted
Response:	Fast
Interval Period:	1 Minute
Time History Period:	5 Seconds

Short-term noise level measurements were taken within the project site and along local roadways, on July 25, 2012, between the hours of 11:00 a.m. and 3:30 p.m. During the measurement period, the weather was dry and slightly breezy (>3.5 miles per hour), and the temperature ranged between 72 degrees Fahrenheit (°F) and 76°F.

1.3.2 Noise Modeling Software

Existing vehicle traffic noise levels near the project area were modeled by RECON using the Federal Highway Administration (FHWA) Highway Traffic Noise Model (TNM) and traffic data provided by the project traffic report. Existing traffic noise modeling is intended to establish a baseline for existing noise conditions generated from traffic operations adjacent to the project area. The FHWA model is based on reference noise emission factors for automobiles, medium trucks, heavy trucks, motorcycles, and buses with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and ground type. Truck usage and vehicle speeds on study area roadways were estimated from field observations.

Image source: Custom image provided by client (flown March 2012), and SanGIS (flown May 2012)

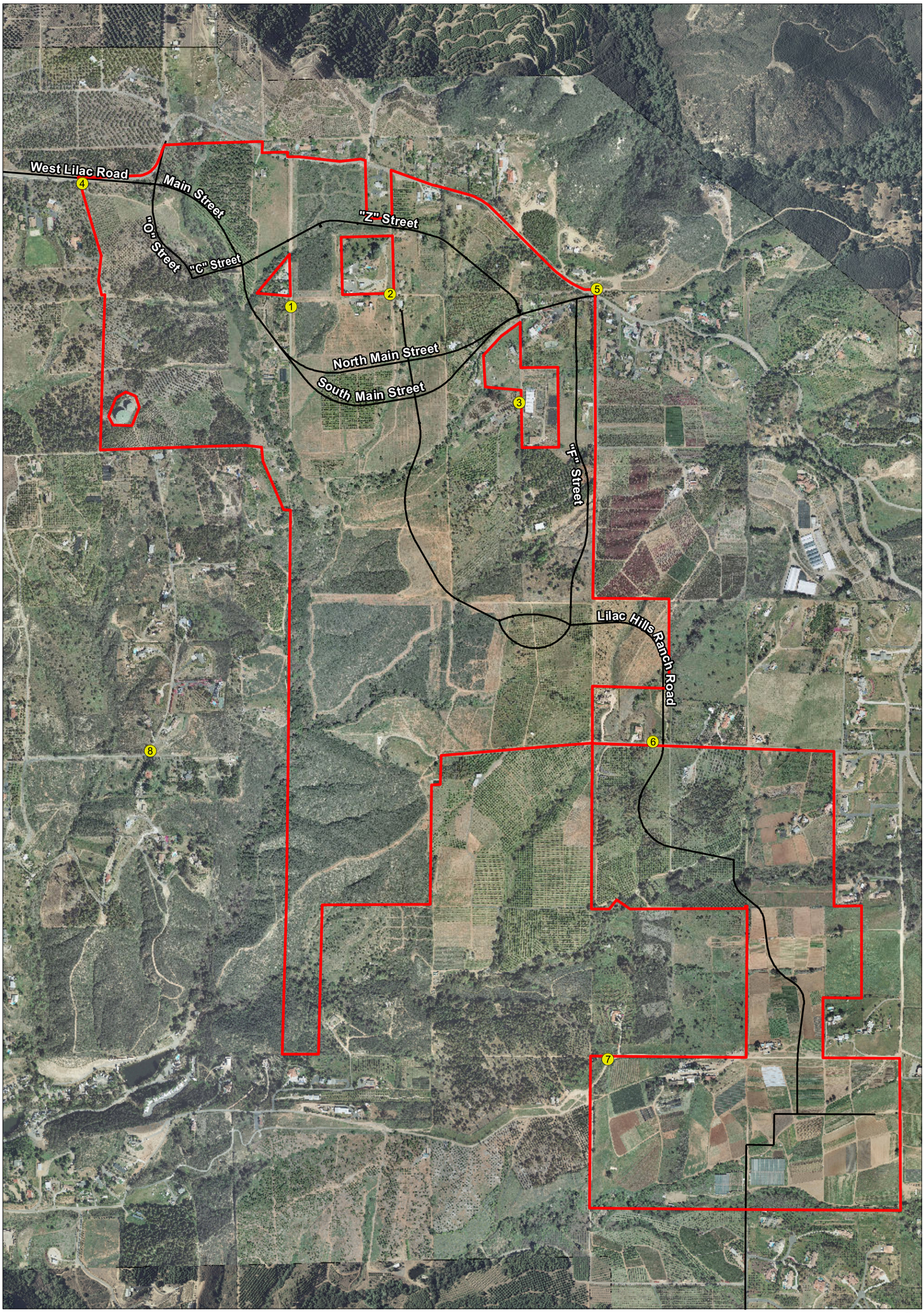


FIGURE 5

Noise Measurement Locations

RECON

M:\JOBS4\6153\common_gis\fig5_nos.mxd 5/28/2013 sab

THIS PAGE IS INTENTIONALLY BLANK.

1.3.3 Noise Formulas and Calculations

1.3.3.1 Construction Noise

Noise impacts from construction are a function of the noise generated by equipment, the distance to and sensitivity of nearby land uses, and the timing and duration of the noise-generating activities. Noise levels from construction activities are typically considered as point sources and would drop off at a rate of -6 dB(A) per doubling of distance over hard site surfaces, such as streets and parking lots. The drop-off rate would be approximately -7.5 dB(A) per doubling of distance for soft site surfaces, such as grass fields and open terrain with vegetation (Federal Transit Administration [FTA] 2006).

The magnitude of construction noise impacts depends on the type of construction activity, the noise level generated by various pieces of construction equipment, the duration of the activity, and the distance between the activity and noise sensitive receivers. As shown in Table 6, maximum noise levels from construction equipment range from approximately 70 dB(A) to 90 dB(A) at 50 feet from the source (FTA 2006). The noise levels vary for each type of equipment, as equipment may come in different sizes and with different engines. Construction equipment noise levels also vary as a function of the activity level or duty cycle. In a typical construction project, the loudest short-term noise levels are those of earth-moving equipment under full load, which are on the order of 85 to 90 dB(A) at a distance of 50 feet from the source.

Typical construction projects, with equipment moving from one point to another, work breaks, and idle time, have long-term noise averages that are lower than louder short-term noise events. Additionally, due to the dynamic nature of a construction site, noise levels are calculated from the center of the activity.

Off-site construction-related worker traffic noise and daily construction trips were compared to existing average daily traffic (ADT) and peak volumes and LOS levels.

1.3.3.2 Operational Noise

On-site noise and land use compatibility ~~where~~were assessed using the FHWA TNM and traffic volumes taken from the project traffic report. All compatibility noise levels and contours were modeled using hard site conditions without consideration of topography or intervening structures. Off-site traffic noise level increases were calculated using accepted mathematical correlations between traffic volume changes and noise levels. Stationary source noise levels were calculated and attenuated based on standard equipment reference data and hard site propagation characteristics.

TABLE 6
CONSTRUCTION EQUIPMENT NOISE EMISSION LEVELS

Equipment	Noise Level at 50 feet	Typical Duty Cycle
Auger Drill Rig	85	20%
Backhoe	80	40%
Blasting	94	1%
Chain Saw	85	20%
Clam Shovel	93	20%
Compactor (ground)	80	20%
Compressor (air)	80	40%
Concrete Mixer Truck	85	40%
Concrete Pump	82	20%
Concrete Saw	90	20%
Crane (mobile or stationary)	85	20%
Dozer	85	40%
Dump Truck	84	40%
Excavator	85	40%
Front End Loader	80	40%
Generator (25 KVA or less)	70	50%
Generator (more than 25 KVA)	82	50%
Grader	85	40%
Hydra Break Ram	90	10%
Impact Pile Driver (diesel or drop)	95	20%
Insitu Soil Sampling Rig	84	20%
Jackhammer	85	20%
Mounted Impact Hammer (hoe ram)	90	20%
Paver	85	50%
Pneumatic Tools	85	50%
Pumps	77	50%
Rock Drill	85	20%
Rock Crusher	95	50%
Scraper	85	40%
Tractor	84	40%
Vacuum Excavator (vac-truck)	85	40%
Vibratory Concrete Mixer	80	20%
Vibratory Pile Driver	95	20%

KVA = kilovolt amps
SOURCE: FHWA 2008.

2.0 Noise Sensitive Land Uses Affected By Airborne Noise

2.1 Guidelines for the Determination of Significance

Guidelines for the determination of significance of environmental noise impacts for this and other impact sections were promulgated by the County in January 2009 in the County's Noise Guidelines (County of San Diego 2009a).

A proposed project would result in a significant impact if the implementation would result in the exposure of any on-site or off-site existing or reasonably foreseeable future noise sensitive land uses (NSLUs) to exterior or interior noise (including noise generated from a project, together with noise from roads, railroads, airports, heliports, and all other noise sources) in excess of any of the following:

A. Exterior Locations:

   i. 60 dB (CNEL); or

   ii. An increase of 10 dB CNEL over preexisting noise.

In the case of single-family residential detached NSLUs, exterior noise shall be measured at an outdoor living area that adjoins and is on the same lot as the dwelling, and that contains at least the following minimum area:

   (1) Net lot area up to 4,000 square feet: 400 square feet

   (2) Net lot area 4,000 square feet to 10 acres: 10% of net lot area

   (3) Net lot area over 10 acres: 1 acre

For all projects, exterior noise shall be measured at all exterior areas provided for group or private usable open space.

B. Interior Locations:

45 dB (CNEL) except for the following cases:

   i. Rooms which are usually occupied only a part of the day (schools, libraries, or similar facilities), the interior 1 hour average sound level due to noise outside should not exceed 50 decibels (A).

ii. Corridors, hallways, stairwells, closets, bathrooms, or any room with a volume less than 490 cubic feet.

County General Plan

The General Plan Update (GPU) was adopted by the County on August 3, 2011. Revisions to the General Plan Noise Element have not been updated in the Guidelines at this time; however, the new GPU noise compatibility guidelines and standards as contained in the GPU are applicable to the project. Table 7 provides County's current noise compatibility guidelines and Table 8 provides the County's noise standards.

TABLE 7
NOISE COMPATIBILITY GUIDELINES

Land Use Category		Exterior Noise Levels					
		55	60	65	70	75	80
A	Residential—single family residences, mobile homes, senior housing, convalescent homes						
B	Residential—multi-family residences, mixed-use (commercial/residential)						
C	Transient lodging—motels, hotels, resorts						
D	Schools, churches, hospitals, nursing homes, child care facilities						
E	Passive recreational parks, nature preserves, contemplative spaces, cemeteries						
F	Active parks, golf courses, athletic fields, outdoor spectator sports, water recreation						
G	Office\professional, government, medical\dental, commercial, retail, laboratories						
H	Industrial, manufacturing, utilities, agriculture, mining, stables, ranching, warehouse, maintenance/repair						
	ACCEPTABLE—Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal construction, without any special noise insulation requirements.						
	CONDITIONALLY ACCEPTABLE—New construction or development should be undertaken only after a detailed noise analysis is conducted to determine if noise reduction measures are necessary to achieve acceptable levels for land use. Criteria for determining exterior and interior noise levels are listed in Table 8, Noise Standards. If a project cannot mitigate noise to a level deemed Acceptable, the appropriate county decision-maker must determine that mitigation has been provided to the greatest extent practicable or that extraordinary circumstances exist.						
	UNACCEPTABLE—New construction or development shall not be undertaken.						

* Denotes facilities used for part of the day; therefore, an hourly standard would be used rather than CNEL, refer to Table 8.

TABLE 8
NOISE STANDARDS

1.	The exterior noise level (as defined in Item 3) standard for Category A shall be 60 CNEL, and the interior noise level standard for indoor habitable rooms shall be 45 CNEL.
2.	The exterior noise level standard for Categories B and C shall be 65 CNEL, and the interior noise level standard for indoor habitable rooms shall be 45 CNEL.
3.	The exterior noise level standard for Categories D and G shall be 65 CNEL and the interior noise level standard shall be 50 dB(A) L_{eq} (one hour average).
4.	For single-family detached dwelling units, "exterior noise level" is defined as the noise level measured at an outdoor living area which adjoins and is on the same lot as the dwelling, and which contains at least the following minimum net lot area: (i) for lots less than 4,000 square feet in area, the exterior area shall include 400 square feet, (ii) for lots between 4,000 square feet to 10 acres in area, the exterior area shall include 10 percent of the lot area; (iii) for lots over 10 acres in area, the exterior area shall include 1 acre.
5.	For all other residential land uses, "exterior noise level" is defined as noise measured at exterior areas which are provided for private or group usable open space purposes. "Private Usable Open Space" is defined as usable open space intended for use of occupants of one dwelling unit, normally including yards, decks, and balconies. When the noise limit for Private Usable Open Space cannot be met, then a Group Usable Open Space that meets the exterior noise level standard shall be provided. "Group Usable Open Space" is defined as usable open space intended for common use by occupants of a development, either privately owned and maintained or dedicated to a public agency, normally including swimming pools, recreation courts, patios, open landscaped areas, and greenbelts with pedestrian walkways and equestrian and bicycle trails, but not including off-street parking and loading areas or driveways.
6.	For non-residential noise sensitive land uses, exterior noise level is defined as noise measured at the exterior area provided for public use.
7.	For noise sensitive land uses where people normally do not sleep at night, the exterior and interior noise standard may be measured using either CNEL or the one-hour average noise level determined at the loudest hour during the period when the facility is normally occupied.
8.	The exterior noise standard does not apply for land uses where no exterior use area is proposed or necessary, such as a library.
9.	For Categories E and F the exterior noise level standard shall not exceed the limit defined as "Acceptable" in Table N-1 or an equivalent one-hour noise standard.

NOTE: Exterior Noise Level compatibility guidelines for Land Use Categories A-H are identified in Table 7, Noise Compatibility Guidelines.

2.2 Potential Noise Impacts

2.2.1 Potential Build-out Noise Conditions and Impacts

Future on-site traffic volumes were taken from the project traffic report (Chen ~~2013~~2014). Compatibility of the project with the future on-site noise environment was assessed using the peak hourly volumes. Peak hour traffic volumes were calculated as 10 percent of the total ADT. Based on traffic data for West Lilac Road and other local roadways, the peak hour noise levels are equal to the CNEL.

The traffic mix used in the modeling for local roadways was developed from traffic counts during noise measurements, which indicated a mix of ~~94~~93.75 percent automobile, 2.75

percent medium trucks, 0.5 percent buses, 1 percent motorcycles, and 2 percent heavy trucks. The traffic count data from the measurements was used for vehicle classification at the project site for future traffic conditions. Traffic classification data for the I-15 was taken from the *Caltrans 2010 Truck Counts Data* collected near the I-15 and State Route (SR-76) interchange at post mile 46.491. ~~It was assumed for~~ For modeling purposes the classification mix would remain the same in the future.

Traffic speeds were taken from observations and the San Diego Association of Governments Transportation Forecast Information Center website (SANDAG; 2012). All posted speed limits were ~~assumed~~ used ~~to be~~ for the actual traffic speeds for ~~purposes of~~ noise modeling. Sixty-five receptors were modeled at proposed residential lot locations or at various locations within the property boundary 50 feet from proposed primary circulation streets, 5 feet above proposed grade elevation. Receptor points on lots located within Phase I were set 10 feet back from the property lines of the first row of properties along West Lilac Road, Lilac Hills Ranch Road and C Street.

Traffic noise impacts at existing land uses (i.e., off-site locations) are assessed in subchapter 2.3.

i. Exterior Locations

The predicted exterior noise levels are presented in Table 9. The traffic generated 60 CNEL noise contour is shown in Figures 6a and 6b. Off-site traffic data sheets are provided in Attachment 2, and ~~TNM~~on-site noise model output and input data sheets are provided in Attachment 3.

As indicated in bold in Table 9 and Figures 6a and 6b, there are potential locations of NSLUs ~~which~~in the vicinity of W. Lilac Road and Lilac Hills Ranch Road that would be exposed to noise levels in excess the County Noise Compatibility Guidelines, see Table 7~~.~~: R-1, R-3, R-14, R-16, R-53, and R-57. This would result in a **potentially significant impact** to future land uses. However, at this point in project design, specific lot configurations and building locations are unknown. Solid barriers can achieve between 5 and 20 dB(A) attenuation depending on height. Therefore, exterior noise levels could be reduced to comply with the County standards when site-specific details and plans are available.

To demonstrate that the proposed walls and future topography would be effective, detailed modeling was conducted using the proposed Phase 1 grading contours and sample building configuration on four lots. Lot layouts used in the modeling are included in Attachment 3. The results of detailed modeling of receivers in Phase 1 lots are shown in Table 10. As shown in Table 10, many of the properties within the noise easement will likely not require any additional mitigation beyond the proposed grading.

Image source: Custom image provided by client (flown March 2012), and SanGIS (flown May 2012)

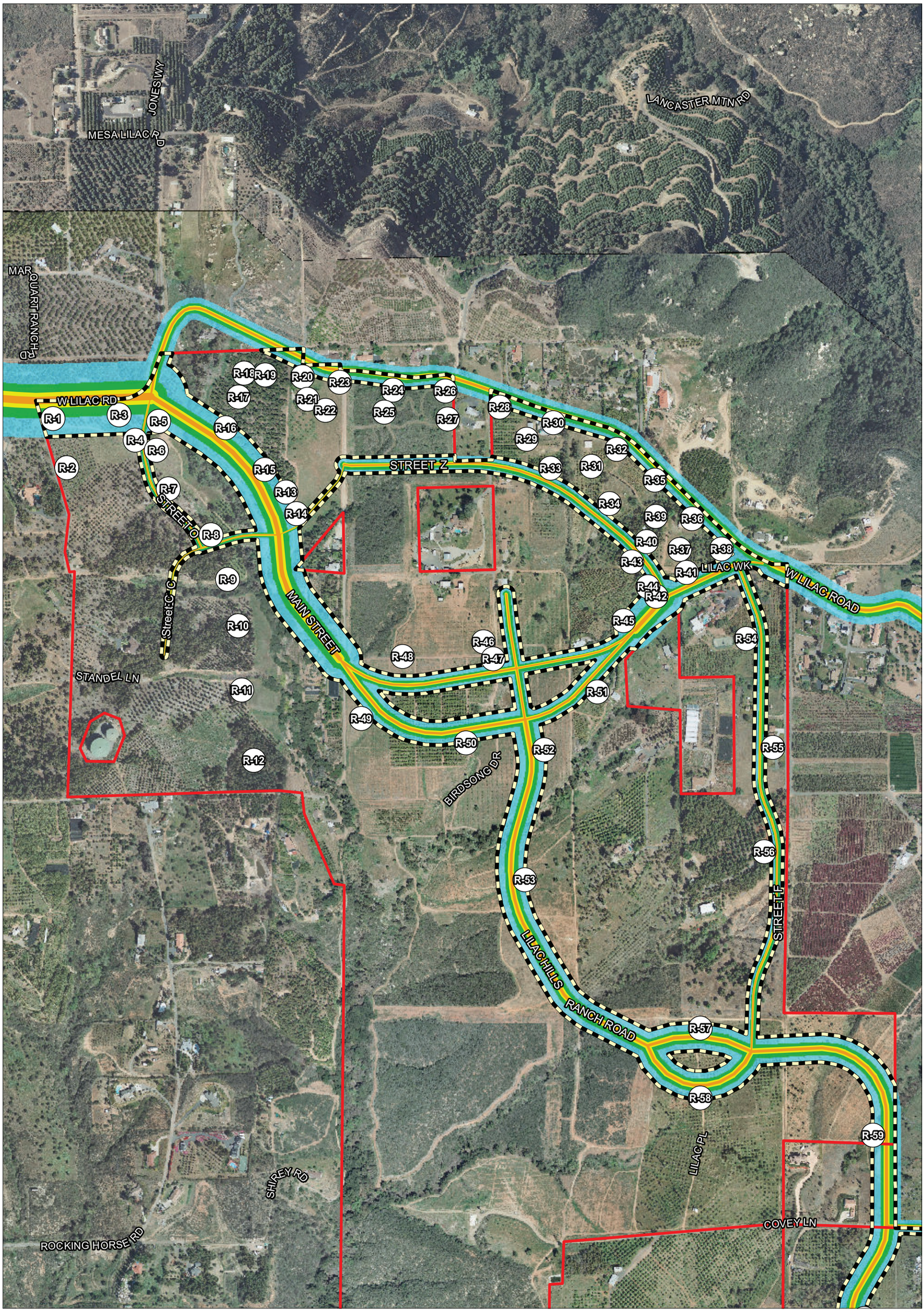


FIGURE 6a

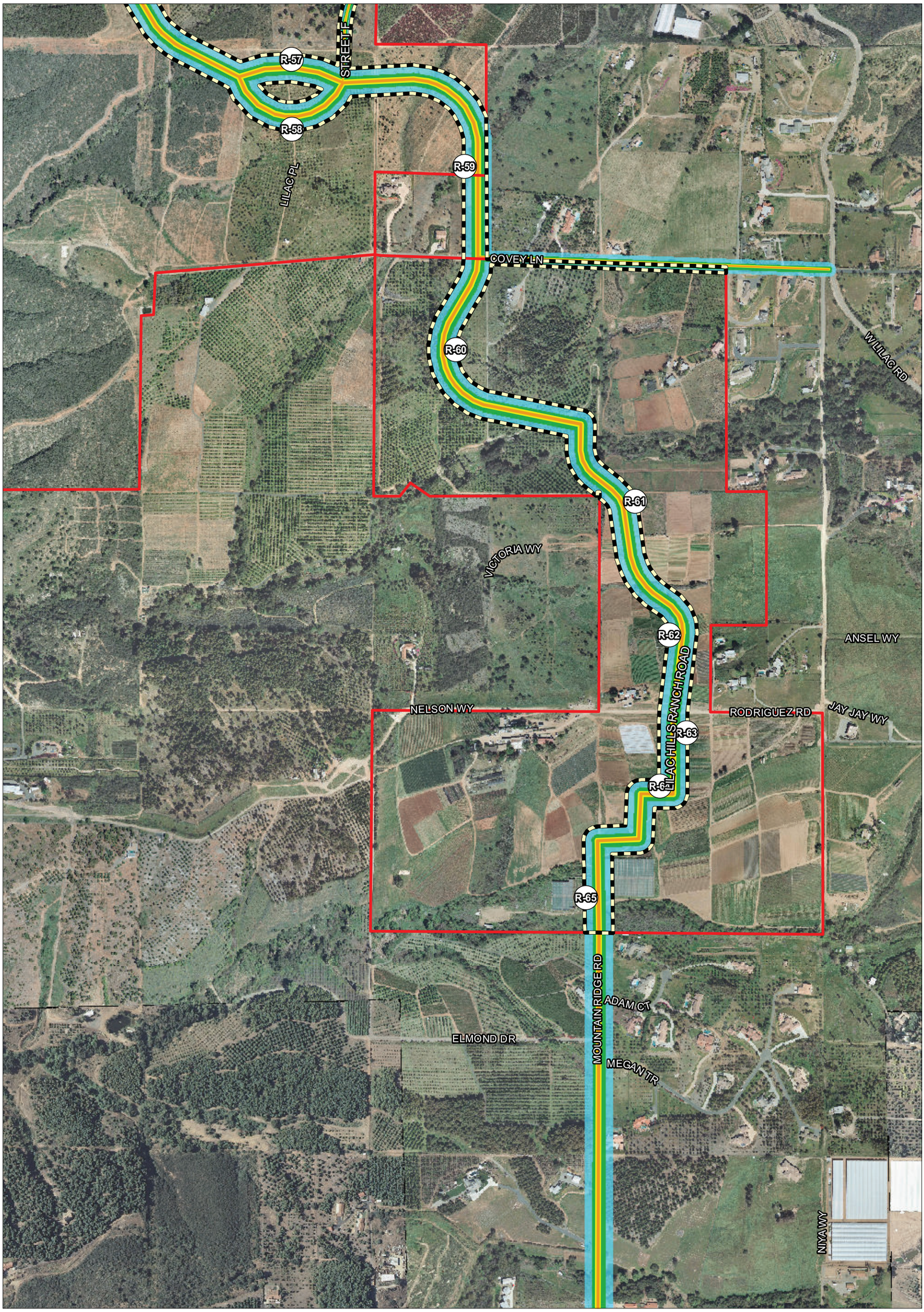
On-site Noise Level Contours (North)

RECON

M:\JOBS4\6153\common_gis\fig6a_nos.mxd 4/21/2014 ccn

THIS PAGE IS INTENTIONALLY BLANK.

Image source: Custom image provided by client (flown March 2012), and SanGIS (flown May 2012)



Project Boundary
Onsite TNM Receivers
Noise Easement
75 CNEL
70 CNEL
65 CNEL
60 CNEL

0 Feet 550

FIGURE 6b

On-site Noise Level Contours (South)

RECON

M:\JOBS4\6153\common_gis\fig6b_nos.mxd 3/26/2014 ccn

THIS PAGE IS INTENTIONALLY BLANK.

TABLE 9
ON-SITE FUTURE NOISE LEVELS

Modeled Point	Land Use/ Acceptable CNEL	Noise Level CNEL	Lot Number	Modeled Point	Land Use/ Acceptable CNEL	Noise Level CNEL	Lot Number
R-1	**A/60**	~~60~~**63**	**10**	R-34	A/60	~~52~~53	294
R-2	A/60	~~55~~53	14	R-35	A/60	~~**62**~~59	342
R-3	**A/60**	~~**64**~~**61**	**3**	R-36	A/60	~~**61**~~57	339
R-4	A/60	~~58~~56	176	R-37	A/60	~~53~~54	331
R-5	B/65	61	HOA CC	R-38	E/65	~~61~~54	Park QQ
R-6	A/60	57	120	R-39	A/60	~~53~~54	227
R-7	A/60	~~56~~55	116	R-40	A/60	~~52~~55	289
R-8	A/60	~~56~~55	110	R-41	A/60	~~54~~56	333
R-9	E/65	~~54~~52	OS	R-42	NA	~~56~~59	NA
R-10	A/60	~~53~~54	70	R-43	A/60	~~52~~56	282
R-11	A/60	~~51~~52	64	R-44	A/60	~~54~~57	285
R-12	A/60	51	57	R-45	A/60	~~56~~57	NA
R-13	A/60	~~58~~57	190	R-46	A/60	~~53~~55	NA
R-14	**A/60**	~~59~~**60**	**193**	R-47	P	~~57~~58	NA
R-15	A/60	~~60~~59	186	R-48	A/60	~~54~~57	NA
R-16	**A/60**	**60**	**179**	R-49	E/65	~~56~~55	NA
R-17	A/60	~~56~~55	208	R-50	E/65	57	NA
R-18	A/60	55	210	R-51	A/60	~~56~~54	NA
R-19	A/60	~~56~~55	211	R-52	A/60	~~57~~58	NA
R-20	A/60	~~60~~57	213	**R-53**	**A/60**	~~56~~**60**	**NA**
R-21	A/60	54	248	R-54	A/60	55	NA
R-22	A/60	~~53~~52	237	R-55	A/60	55	NA
R-23	A/60	~~**62**~~56	215	R-56	A/60	55	NA
R-24	A/60	~~**61**~~54	218	**R-57**	**A/60**	~~55~~**61**	**NA**
R-25	A/60	~~54~~52	244	R-58	A/60	~~53~~55	NA
R-26	A/60	~~**61**~~53	221	R-59	A/60	~~56~~52	NA
R-27	A/60	53	222	R-60	A/60	~~56~~55	NA
R-28	A/60	~~**62**~~57	351	R-61	A/60	~~55~~54	NA
R-29	A/60	~~54~~55	311	R-62	A/60	~~56~~55	NA
R-30	A/60	~~**63**~~59	348	R-63	A/60	~~55~~53	NA
R-31	A/60	~~52~~55	319	R-64	A/60	~~58~~56	NA
R-32	A/60	~~**61**~~58	344	R-65	A/60	~~53~~51	NA
R-33	A/60	~~52~~55	301				

NOTE: Bold numbers and receivers indicate potential traffic noise impacts.

TABLE 10
PHASE 1 FUTURE NOISE LEVELS WITH MITIGATION

Modeled Point	Land Use/ Acceptable	Noise Level CNEL	Lot Number
R-1	A/60	~~60~~46	10
R-2	A/60	~~54~~51	14
R-3	A/60	~~57~~46	3
R-4	A/60	~~59~~54	176
R-5	A/60	~~63~~61	CC
R-6	A/60	~~59~~56	120
R-7	A/60	~~58~~54	116
R-8	A/60	~~59~~55	110
R-10	A/60	~~54~~53	70
R-11	A/60	~~52~~54	64
R-12	A/60	~~49~~52	57
R-13	A/60	~~60~~51	190
R-15~~*~~	A/60	~~**63**~~40	186
R-16~~*~~	A/60	~~**63**~~57	179
R-17	A/60	~~57~~43	208
R-18	A/60	~~57~~42	210
R-19	A/60	~~56~~55	211
R-20	A/60	~~58~~55	213
R-21	A/60	~~56~~55	248
R-22	A/60	~~55~~57	237
R-23	A/60	~~57~~54	215
R-24	A/60	~~55~~52	218
R-25	A/60	~~54~~56	244
R-26	A/60	~~55~~53	221
R-27	A/60	53	222
R-28	A/60	57	351
R-29	A/60	55	311
R-30	A/60	59	348
R-31	A/60	~~54~~55	319
R-32	A/60	~~57~~58	344
R-33	A/60	~~54~~55	301
R-34	A/60	53	294
R-35	A/60	59	342
R-36	A/60	~~60~~57	339
R-37	A/60	~~57~~54	331
R-40	A/60	~~60~~54	289
R-39	A/60	~~56~~55	326
R-40	A/60	55	289
R-41	A/60	~~58~~56	333
R-42	A/60	~~62~~60	ROW
R-43	NA	56	282
R-44	A/60	~~58~~57	285
~~House 1~~	~~A/60~~	~~57~~	~~6~~
~~House 2~~	~~A/60~~	~~52~~	~~182~~
~~House 3~~	~~A/60~~	~~52~~	~~193~~
~~House 4~~	~~A/60~~	~~55~~	~~192~~

*No Abatement modeled at these locations.

Bold numbers and receivers indicate potential traffic noise impacts.

Based on the results of the more refined modeling, two locations are of greatest concern: the residential lots proposed along West Lilac Road, lots 1 through 10, west of the West Lilac Road/~~O Street/~~Main Street intersection and the residences proposed along Main Street, lots 178 through 195, between the West Lilac Road/~~O Street/~~Main Street intersection and the Main Street/C Street intersection. Thus, ~~a~~ sample ~~residence was~~residences were placed on ~~lot 6, representing~~these lots~~ 1 through 10,~~ and ~~a 6-foot-high sound wall was~~were modeled ~~along West Lilac Road west of the West Lilac Road/O Street/Main Street intersection~~between the structures, as shown in ~~Figure~~Figures 6a~~. This wall~~ and 6b. Wing walls, or walls between the structures, would be required to reduce noise levels from traffic to comply with the County exterior noise standards for these lots. ~~Lots 178 through 195 are located~~Based on the ~~east side of Main Street and would be more difficult to mitigate as these properties would front Main Street and a single continuous barrier, as used along~~

~~West Lilac Road, would not be feasible due to access restrictions. Thus, the~~ results of the detailed modeling, ~~was conducted~~ use of ~~using the sample layout~~structures to shield the back yards (NSLU area) of the properties~~.~~ would be effective in further reducing vehicle noise levels. This detailed modeling ~~was conducted at lots 182, 192, and 193 to represent lots 178 through 195, and the modeled~~ layout is shown in Attachment 3. Table 10 shows ~~T~~the results of the detailed modeling ~~are shown in Table 10, which, as shown,~~; the proposed structures with wing walls would reduce noise levels to comply with County standards. Please note R-5 is a~~n HOA~~ Homeowners Association lot and would not be used for residential purposes.

As previously stated, the refined modeling presented is for demonstration purposes. As the final design and layout of individual lots has not been fully developed for the entire project, it is not feasible to develop site-specific mitigation ~~has not been developed for all lots~~ at this ~~point~~time. Therefore, to ensure compliance with all County noise standards, a mitigation measure is included that requires the project ~~would~~applicant to dedicate a noise protection easement over areas that would potentially be exposed to noise levels greater than 60 CNEL as shown in Figure 6a. A noise protection easement requires preparation of a noise study to be submitted to the County prior to approval of the master tentative map or subsequent implementing tentative maps that demonstrate~~s~~ the project would meet all County noise standards and require~~s~~ a dedicated noise easement to be shown on the final map.

ii. Interior Locations

Typical modern residential construction can provide 20 dB(A) attenuation from exterior to interior locations (Egan 1988). Thus, an exterior noise level of 60 CNEL at the building façade would be attenuated to 40 CNEL at interior locations. Based on the noise contours presented in Figures 6a and 6b, exterior noise levels would not exceed 65 CNEL, beyond the roadway pavement, thus interior noise levels would not be anticipated to exceed 45 CNEL at these locations.

To provide a margin of safety, County standards require an interior noise assessment for residential areas exposed to noise levels greater than 60 CNEL. As identified, exterior noise levels at some locations would exceed 60 CNEL. While barriers would be effective for first-floor locations, noise sensitive second-floor locations may require additional attenuation measures, such as acoustically rated windows and doors, structure setbacks, or limiting openings on walls facing local roads. With consideration of these additional measures, closed windows would typically provide sufficient exterior-to-interior noise reduction to reduce traffic noise levels to comply with County interior noise standards. ~~Thus~~Because it is not feasible at this time to develop site-specific mitigation, a mitigation measure has been identified which requires that ~~the project evaluate~~prior to issuance of any building permit for uses within the noise protection easement, the applicant must demonstrate that interior noise levels ~~for properties located in areas exceeding 60 CNEL and provide air conditioning~~

~~or equivalent forced air circulation for any residential structure where the interior standard can only be met~~comply with ~~closed or inoperable windows.~~ County noise standards.

2.2.2 Design Considerations and Mitigation Measures

Due to the potential conflicts with the proposed land uses and predicted future noise levels along West Lilac Road, Main Street, Lilac Hills Ranch Road, and Street F, the following measures would be required to reduce potential traffic noise impacts to a less than significant level and ensure the project complies with the County's noise standards:

i. Exterior Locations

MM N-1: Prior to approval of the master tentative map, or subsequent implementing tentative map, as appropriate, the project applicant shall dedicate "noise protection easements" on the master tentative map and each subsequent implementing tentative map for all lots located within the noise easement contour, as shown on Figures 6a and 6b.

- The noise protection easements shall contain a restriction requiring compliance with the standards for the subject land use as stated in Tables N-1 and N-2 of the County General Plan Noise Element (see Tables 7 and 8 of this report). ~~Thus, the~~Potential feasible measures to achieve compliance include, but are not limited to, altering lot configurations and building locations, varying grading contours, and constructing solid barriers (i.e., sound walls).

- The noise easement shall contain the following language.

  - For single-family lots: The noise level at exterior use areas associated with single-family detached dwelling units shall ~~contain~~be measured at an outdoor living area that adjoins and is on the same lot as the dwelling and that contains at least the following minimum net lot area:
    - for lots less than 4,000 square feet in area, the exterior area shall include 400 square feet,
    - for lots between 4,000 square feet to 10 acres in area, the exterior area shall include 10 percent of the lot area;
    - for lots over 10 acres in area, the exterior area shall include 1 acre.

    Noise levels with the single-family residential exterior use areas shall not exceed 60 CNEL.

  - ~~o~~ For single-family ~~lots along~~ properties fronting West Lilac Road, west of Main Street, ~~would require a 6-foot-high sound wall as shown on Figure~~

~~6a within the Noise Report to comply with the County exterior noise sensitive land use (NSLU) standards.~~

- o ~~For single-family properties~~and fronting Main Street,~~ located~~ between West Lilac Road and C Street, a site-specific design for building placement and inclusion of wing walls would be required to reduce noise levels at exterior NSLU areas.

- o For residential lots other than single-family lots: The noise level at exterior use area is defined as areas which are provided for private or group usable open space purposes (as defined in Table N-2 of the County General Plan Noise Element).

  Noise levels with the exterior use areas for all other residential lots shall not exceed 65 CNEL.

- ~~o~~ For non-residential ~~noise sensitive land use~~NSLUs, ~~the exterior area is the public use provided.~~

  ~~T~~the exterior use areas are subject to the noise level ~~standard for shall be 65 CNEL~~as specified in the County Noise Element, Tables N-1 and ~~the interior noise level standard shall be 50 dBA L_{eq} (one hour average).~~

- o ~~Exterior noise standards do not apply for land uses where no exterior use area is proposed or necessary~~N-2.

- o For all other land uses the exterior noise level standard shall not exceed the limit defined as "Acceptable" in Table N-1 of the County General Plan Noise Element or the equivalent one-hour noise standard.

- The lots with the noise protection easements shall be identified on all final maps.

Implementation: Project applicant(s) and primary contractor(s) of all project phases.

Timing: Prior to approval of the master tentative map and issuance of building permits for lots within the noise easements.

Enforcement: County

ii. Interior Locations

MM N-2: Prior to ~~approval~~issuance of any building permit for properties located within a noise ~~protection easement,~~restriction easements (see Figures 6a and 6b), the building permit applicant shall demonstrate that interior noise levels due to exterior noise sources would not exceed the applicable County noise ordinance

standard shown in Table 8 ~~of this report~~ for the subject land use (see Figures 6a and 6b). In these cases, it is anticipated that the typical method of compliance would be to provide sound walls where appropriate, structure setbacks, acoustically rated windows and doors, or air conditioning or equivalent forced air circulation to allow occupancy with closed windows, which, for most construction, would provide sufficient exterior-to-interior noise reduction.

- An acoustical study shall be prepared to demonstrate and verify that interior noise levels are below 45 CNEL within all residential structures, and below 50 CNEL within schools, churches, medical/dental facilities (i.e., hospitals, laboratories, nursing homes) child care facilities, government facilities, and commercial uses (office and retail).

Implementation: Project applicant(s) and primary contractor(s) of all project phases.

Timing: Prior to issuance of building permits for development of on-site residential areas.

Enforcement: County

2.3 Off-site Direct and Cumulative Noise Impacts

The project would increase traffic volumes on local roadways. Noise level increases would be greatest nearest the project site, which would represent the greatest concentration of project-related traffic. Traffic noise is primarily a function of volume, vehicle mix, speed, and proximity. For purposes of this evaluation, the vehicle mix, speed, and proximity are assumed to remain constant in the future. Thus, the primary factor affecting noise levels would be increased traffic volumes.

Direct impacts were determined by comparing existing average daily traffic volumes with the existing condition plus the project at full build-out. Cumulative impacts were determined by comparing the future with project and no project conditions and determining the project's contribution to the future cumulative noise levels.

2.3.1 Direct Noise Impacts

Table 4 presents the existing average daily traffic volumes for the existing condition, and for the existing condition with the project at full build-out. Off-site traffic noise impacts have been evaluated based on the calculated change in noise levels due to the increase or decrease in traffic volumes from the existing condition.

A substantial noise increase is defined as an increase of 10 dB(A) CNEL above existing conditions as stated in the County of San Diego Noise Report Guidelines Section 4.1-A (ii). However, the Report Format and Content Requirements include a statement that a "doubling of sound energy" is considered a significant impact at a "documented noisy site."

A doubling of sound energy is equivalent to a 3 dB(A) increase. A documented noisy site is ~~assumed~~ to be a location with NSLU that currently exceeds 60 dB(A) CNEL. Thus, a substantial increase is defined as a 10 dB(A) increase, or greater~~,~~ over existing noise levels when existing and future noise levels are below the County's 60 dB(A) CNEL standard, or a 3 dB(A) increase when existing or future noise levels equal or exceed the County's 60 CNEL standard.

As shown in Table 11, upon completion of Phase 5, the project would increase noise levels either by 10 dB(A) CNEL or more over existing levels; or by 3 dB(A) CNEL or greater ~~over existing conditions~~in those cases in which existing or future noise levels equal or exceed the County's 60 CNEL standard along the following segments:

- E. Dulin Road: Old Highway 395 to SR-76
- West Lilac Road: Old Highway 395 to Main Street
  Main Street to Street F
  Covey Lane to Circle R Drive
- Old Highway 395: E. Dulin Road to West Lilac Road
  West Lilac Road to I-15 NB Ramps
- Covey Lane: Eastern Project Boundary to West Lilac Road
- Mountain Ridge Road: Southern Project Boundary to Circle R Drive

~~Rodriquez Road: Project Boundary to **West Lilac Road**~~

- Lilac Hills Ranch Road: Between Phases 3 and 4

~~In addition~~Also as shown in Table 11, based on the increase in traffic volumes the project would result in a noise level increase of ~~10~~11 dB(A) over existing conditions without the project on the segment of West Lilac Road between Old Highway 395 and Main Street. Increases along all other segments would range from 3 to 6 dB(A).

Based on the road segments identified above, NSLUs potentially impacted by substantial noise increase are primarily residential land uses fronting ~~West Lilac Road,~~ E. Dulin Road, West Lilac Road, ~~and~~ Old Highway 395, ~~. Additional NSLU residences potentially impacted are located on~~ Covey Lane, Mountain Ridge Road, ~~Covey Lane,~~ and in the vicinity of the future Lilac Hills Ranch Road. In addition to residential land uses, the Kamp Kuper Retreat Center ~~is~~, located south of West Lilac Road between Old Highway 395 and Main Street, ~~which~~ would be exposed to an 11 dB(A) increase. Each of these road segments is addressed below.

TABLE 11
CHANGES IN OFF-SITE TRAFFIC CNEL AT 100 FEET FROM CENTERLINE

Street	Segment		Existing	Phase 1	Delta	Phases 1-5	Delta
	Start	End					
E. Dulin Road	**Old Highway 395**	**SR-76**	**61**	**62**	**1**	**65**	**~~3~~4**
W. Lilac Road	Camino Del Rey	Camino Del Cielo	62	63	~~0~~1	64	~~1~~2
	Camino Del Cielo	Old Highway 395	59	59	1	61	2
	Old Highway 395	**West Main Street**	**56**	**62**	**6**	**~~66~~67**	**~~10~~11**
	West Main Street	**East Main Street ~~"F"~~**	**56**	**57**	**1**	**60**	**4**
	East Main Street ~~"F"~~	Covey Lane	56	57	1	58	2
	Covey Lane	**Circle R Drive**	**53**	**56**	**~~2~~3**	**~~59~~60**	**~~5~~7**
	Circle R Drive	Lilac Road	59	59	0	~~59~~60	~~0~~1
Camino Del Cielo	Camino Del Rey	W. Lilac Road	65	65	0	65	0
Olive Hill Road	Shamrock Road	SR-76	62	62	0	62	0
Camino Del Rey	SR-76	Old River Road	66	66	0	66	0
	Old River Road	W. Lilac Road	66	66	0	66	0
	W. Lilac Road	Camino Del Cielo	65	65	0	65	0
	Camino Del Cielo	Old Highway 395	63	63	0	64	0
Gopher Canyon Road	E. Vista Way	I-15 SB Ramps	68	68	0	69	0
	I-15 SB Ramps	I-15 NB Ramps	68	68	0	68	0
	I-15 NB Ramps	Old Highway 395	65	65	0	~~66~~65	~~1~~0
Circle R Drive	Old Highway 395	Mountain Ridge Road	63	63	0	~~64~~63	~~2~~0
	Mountain Ridge Road	W. Lilac Road	59	59	0	~~59~~60	~~0~~1
Old Castle Road	Old Highway 395	Lilac Road	65	65	0	65	0
E. Vista Way	SR-76	Gopher Canyon Road	68	68	0	68	0
	Gopher Canyon Road	Osborne Street	70	70	0	70	0
Old River Road	SR-76	Camino Del Rey	62	62	0	62	~~1~~0
Old Highway 395	Pala Mesa Drive	SR-76	65	65	0	66	~~0~~1
	SR-76	E. Dulin Road	63	64	~~0~~1	65	~~1~~2
	E. Dulin Road	**W. Lilac Road**	**63**	**64**	**1**	**66**	**3**
	W. Lilac Road	**I-15 SB Ramps**	**61**	**62**	**2**	**65**	**4**
	I-15 SB Ramps	**I-15 NB Ramps**	**61**	**62**	**1**	**64**	**3**
	I-15 NB Ramps	Camino Del Rey	59	60	1	61	1
	Camino Del Rey	Circle R Drive	63	63	0	64	1
	Circle R Drive	Gopher Canyon Road	66	66	0	66	1
	Gopher Canyon Road	Old Castle Road	65	65	0	65	0
Champagne Boulevard	Old Castle Road	Lawrence Welk Drive	62	62	0	62	0
Pankey Road	Pala Mesa Drive	SR-76	44	44	0	44	0

TABLE 11
CHANGES IN OFF-SITE TRAFFIC CNEL AT 100 FEET FROM CENTERLINE
(continued)

Street	Segment		Existing	Phase 1	Delta	Phases 1-5	Delta
	Start	End					
Lilac Road	Couser Canyon Road	W. Lilac Road	56	56	0	57	1
	W. Lilac Road	Old Castle Road	60	60	0	61	2
	Old Castle Road	Anthony Road	65	65	0	65	0
	Anthony Road	Betsworth Road	65	65	0	65	0
	Betsworth Road	Valley Center Road	65	65	0	66	0
Valley Center Road	Woods Valley Road	Lilac Road	69	69	0	69	0
	Lilac Road	Miller Road	69	69	0	69	0
	Miller Road	Cole Grade Road	69	69	0	69	0
	Cole Grade Road	Vesper Road	66	66	0	66	0
Miller Road	Misty Oak Road	Valley Center Road	57	57	0	57	0
Cole Grade Road	Fruitvale Road	Valley Center Road	66	66	0	66	0
Covey Lane	**Project Eastern Boundary**	**W. Lilac Road**	**44**	**44**	**0**	**56**	**12**
Mountain Ridge Road	**Project Southern Boundary**	**Circle R Drive**	**45**	**45**	**0**	**53**	**8**
Lilac Hills Ranch Road	**Phase 3 Southern Boundary**	**Phase 4 Northern Boundary**	**DNE**	**DNE**	**0**	**~~58~~62**	**~~58~~62**
I-15	Riverside County Boundary	Old Highway 395	82	82	0	82	0
	Old Highway 395	SR-76	82	82	0	82	0
	SR-76	Old Highway 395	81	81	0	81	0
	Old Highway 395	Gopher Canyon Road	81	81	0	81	0
	Gopher Canyon Road	Deer Springs Road	81	81	0	81	0
	Deer Springs Road	Centre City Parkway	84	84	0	84	0
	Centre City Parkway	El Norte Parkway	83	83	0	83	0
	El Norte Parkway	SR-78	84	84	0	84	0
	SR-78	W Valley Parkway	86	86	0	86	0
	W Valley Parkway	Auto Parkway	85	85	0	85	0
	Auto Parkway	W Citracado Parkway	85	85	0	85	0
	W Citracado Parkway	Via Rancho Parkway	86	86	0	86	0
	Via Rancho Parkway	Bernardo Drive	86	86	0	86	0
	Bernardo Drive	Rancho Bernardo Road	86	86	0	86	0
	Rancho Bernardo Road	Bernardo Center Drive	86	86	0	86	0
	Bernardo Center Drive	Camino Del Norte	86	86	0	86	0

NOTE: DNE = Does not exist; **Bold** numbers and receivers indicate potential traffic noise impacts.

E. Dulin Road

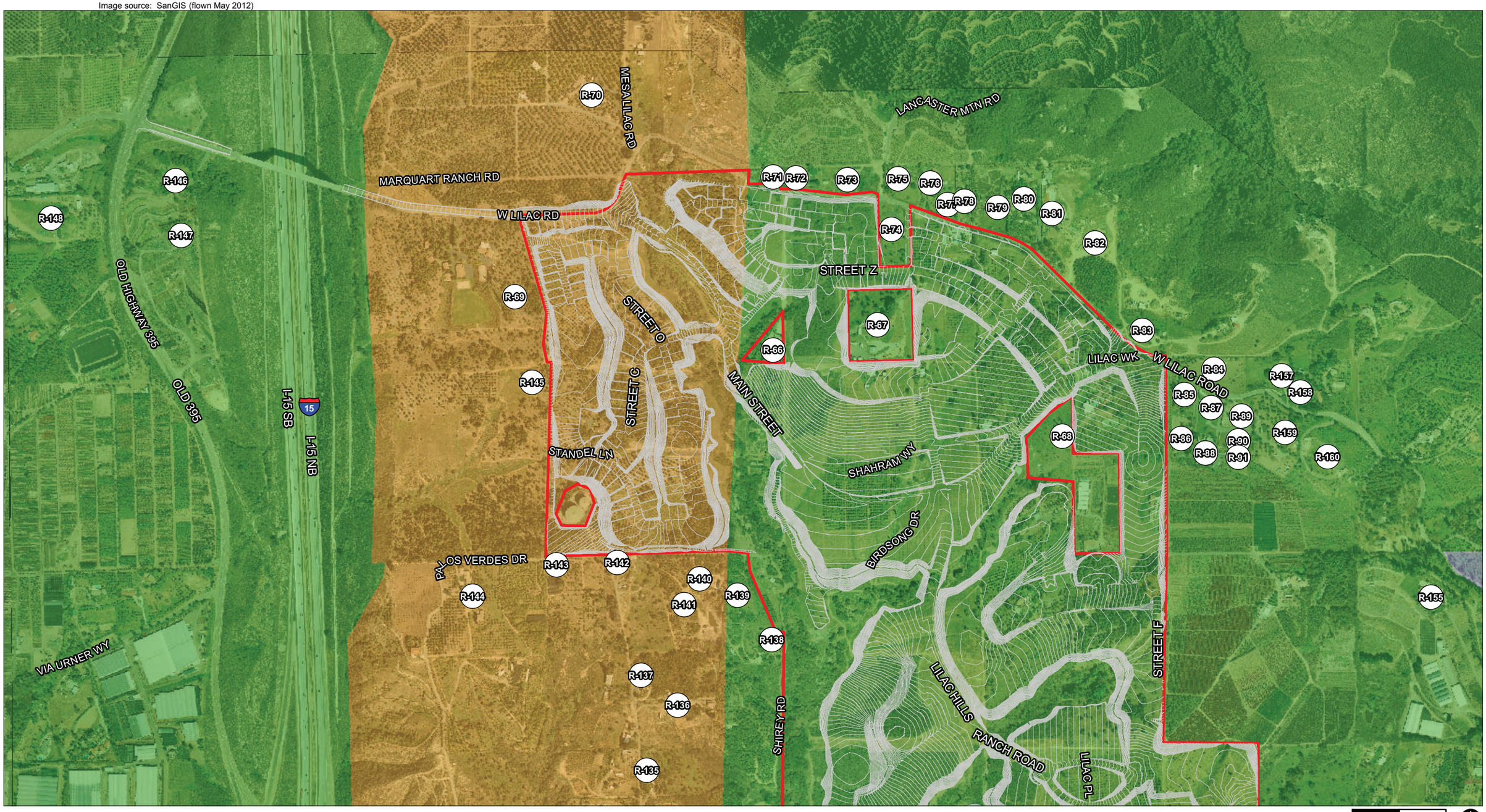
Single-family residences located along E~~,~~. Dulin Road are uniform and set back approximately 20 feet from the roadway edge. At these distances, noise levels would exceed the County's acceptable level for single-family residential uses~~.~~ at the residence front yard. The structures currently provide some shielding for the exterior use areas in the rear of the property further from the roadways; however, there presently are no shared sound walls or similar continuous acoustical barriers due to access requirements. Based on a site survey, the majority of properties have wood fencing with substantial gapping and are not considered effective sound walls. ~~Thus, it is assumed~~However, the spacing of the existing structures would provide between 3 and 5 dB(A) reduction (FHWA 2011). Based on the predicted noise levels along E. Dulin Road shown in Table 11, a 3–5 dB(A) reduction attributable to the spacing of the existing structures would result in future noise levels ranging from 57– to 59 CNEL at exterior NSLU areas, i.e., backyards. Therefore, future noise levels would not exceed the County's "acceptable" level for Category A land uses (60 CNEL~~). The~~), ~~-~~and the predicted ~~3~~4 dB(A) increase in traffic noise would be considered a less than substantial increase in ambient noise levels. Therefore, traffic noise impacts along E. Dulin Road would be **less than significant**.

West Lilac Road

Two off-site NSLUs are located along West Lilac Road between Old Highway 395 and Main Street. One is a residence, 8269 West Lilac Road~~,~~ (R-146), located approximately 650 feet west of I-15 and approximately 250 feet south of West Lilac Road. The nearest exterior use area of the second, Kamp Kuper~~,~~ (R-69), is located approximately 890 feet east of I-15, adjacent to the east of the project site and approximately 340 feet south of West Lilac Road. At these particular locations noise levels are dominated by traffic noise on I-15 and actual noise levels would range from 69 to 67 CNEL at the residence and at Kamp Kuper, respectively, while noise levels from West Lilac Road would be 59 to 57 at the residence and Kamp Kuper, respectively. As the project would not increase traffic noise levels associated with the I-15 by a perceptible amount (< 3 dB), the predicted noise level increase from West Lilac Road would be **less than significant** as the traffic noise generated by West Lilac Road would not affect the ambient noise level at the residence or at Kamp Kuper.

Substantial increase would also occur along the majority of West Lilac Road. However, as with other development in this area, due to the large residential lots located along West Lilac Road substantial ~~increase~~increases in ~~proximity to roadways~~noise levels may not result in significant impacts at existing NSLUs. Due to the proximity to the project site, off-site receivers along West Lilac Road between the project entrances and immediately to the west and east, were included in the TNM model to represent exterior NSLU at the majority of these residences, which were used to calculate existing and future noise levels. Receiver locations are shown in ~~Figure 7.~~Figures 7a and 7b. If modeled noise levels at these locations indicate noise levels in excess of the County's "acceptable" levels, the predicted increase would result in a substantial increase. The results of the modeling are shown in

Image source: SanGIS (flown May 2012)



Project Boundary

R-1 Off-site Receivers

Final Grading

Zoning

- A70
- A72
- C36 and C40
- RR.25
- RR.5
- S88

RECON

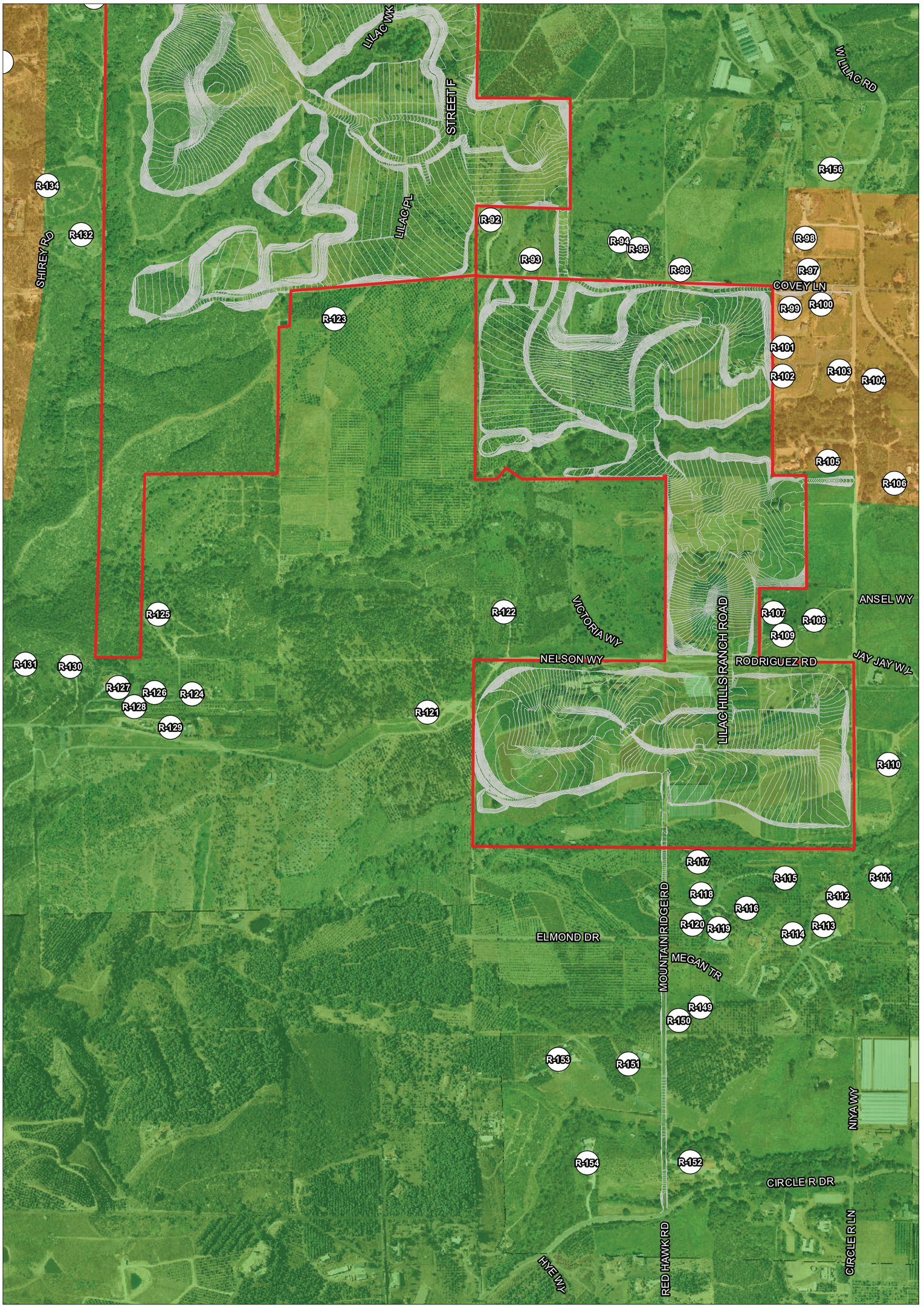
M:\JOBS4\6153\common_gis\fig7a_nos.mxd 4/21/2014 ccn

FIGURE 7a

Off-site NSLU (North)

THIS PAGE IS INTENTIONALLY BLANK.

Image source: Custom image provided by client (flown March 2012), and SanGIS (flown May 2012)



0 Feet 550

Project Boundary

R-1 Off-site Receivers

Final Grading

Zoning

A70

A72

C36 and C40

RR.25

RR.5

S88

FIGURE 7b

Off-site NSLU (South)

RECON

M:\JOBS4\6153\common_gis\fig7b_nos.mxd 4/21/2014 ccn

THIS PAGE IS INTENTIONALLY BLANK.

Table 12. Based on the noise levels shown in Table 12, ~~one~~two existing NSLUs (R-~~66),~~146 and R-147), located at 8269 West Lilac Road and~~,~~ 32163 Old Highway 395, respectively, would potentially be exposed to noise levels in excess of the County's land use compatibility guidelines "acceptable" level~~.~~, i.e., 60 CNEL. Due to the future noise level calculated with TNM, additional detailed modeling was conducted to determine the amount of the increase associated with the project at this location by modeling the existing traffic conditions in TNM for ~~this~~the Old Highway 395/West Lilac Road interchange. Based on the additional modeling, the existing noise level at ~~R-66~~both R-146 and R-147 is 60.~~3~~1 CNEL and the future noise level would be 61.~~5~~6 CNEL at R-146 and 60.7 CNEL at R-147, which represent~~s~~ an increase ~~of~~ranging from 0.6 to 1.~~2~~5 dB(A) and is a **less than significant impact**. Detailed modeling input and output data sheets are included in Attachment 2.

~~Traffic noise impacts to proposed on-site land uses are discussed in Section 2.2.~~

Old Highway 395

One off-site NSLU is located along Old Highway 395 between the West Lilac Road and I-15 northbound on-ramps. The residence is approximately 400 feet from the roadway and at this distance traffic noise levels would attenuate to approximately 54 CNEL, thus the increase of ~~3~~4 dB(A) is not considered a significant noise level increase and a **less than significant impact** would occur along this portion of Old Highway 395.

TABLE 12
FUTURE OFF-SITE NOISE LEVELS AT SPECIFIC LOCAL RECEIVER LOCATIONS

Modeled Point	Land Use/ Acceptable CNEL	Noise Level CNEL	APN	Modeled Point	Land Use/ Acceptable CNEL	Noise Level CNEL	APN
R-66	A/60	~~62~~57	~~127-07-22800~~ 128-280-4400	R-~~90~~114	A/60	~~49~~43	~~128-29-07600~~ 129-430-0600
R-67	A/60	~~57~~50	~~127-07-22800~~ 128-280-5600	R-~~91~~115	A/60	~~54~~43	~~128-29-07700~~ 129-430-0200
R-68	A/60	~~55~~51	~~125-23-25100~~ 128-440-1100	R-~~92~~116	A/60	~~51~~44	~~128-29-03600~~ 129-430-0500
R-69	A/60	~~53~~56	~~125-23-23100~~ 127-072-2800	R-~~93~~117	A/60	~~50~~47	~~128-29-03700~~ 129-430-0300
R-70	A/60	~~54~~53	~~125-23-21000~~ 125-232-3100	R-~~94~~118	A/60	~~48~~47	~~128-29-06400~~ 129-430-0400
R-71	A/60	~~54~~56	~~128-28-05300~~ 128-280-5300	R-~~95~~119	A/60	~~54~~45	~~128-29-06500~~ 129-430-1100
R-72	A/60	55	~~128-28-05200~~ 128-280-5200	R-~~96~~120	A/60	~~51~~48	~~129-01-08300~~ 129-430-1200
R-73	A/60	~~56~~54	~~128-28-02300~~ 128-280-2300	R-~~97~~121	A/60	~~53~~45	~~129-01-08400~~ 129-300-4600
R-74	A/60	51	~~128-28-02800~~ 128-280-2800	R-~~98~~122	A/60	~~46~~45	~~129-01-08500~~ 129-011-2300
R-75	A/60	~~51~~52	~~128-28-00700~~ 128-280-0700	R-~~99~~123	A/60	~~45~~47	~~129-01-08600~~ 129-010-6100
R-76	A/60	50	~~128-28-03200~~ 128-280-3200	R-~~100~~124	A/60	~~45~~47	~~129-01-06500~~ 129-300-0400
R-77	A/60	~~51~~54	~~128-28-03300~~ 128-280-3300	R-~~101~~125	A/60	~~44~~47	~~129-01-06600~~ 129-010-7800

TABLE 12
FUTURE OFF-SITE NOISE LEVELS AT SPECIFIC LOCAL RECEIVER LOCATIONS

Modeled Point	Land Use/ Acceptable CNEL	Noise Level CNEL	APN	Modeled Point	Land Use/ Acceptable CNEL	Noise Level CNEL	APN
R-78	A/60	~~50~~51	~~128-28-03400~~ 128-280-3400	R-~~102~~126	A/60	~~50~~47	~~129-01-11800~~ 129-300-3700
R-79	A/60	~~57~~50	~~128-28-04300~~ 128-280-5100	R-~~103~~127	A/60	~~45~~47	~~129-01-12100~~ 129-300-3600
R-80	A/60	~~50~~48	~~128-28-05600~~ 128-280-3800	R-~~104~~128	A/60	47	~~129-01-11900~~ 129-300-2600
R-81	A/60	~~50~~48	~~128-28-05100~~ 128-280-6100	R-~~105~~129	A/60	~~51~~47	~~129-43-00300~~ 129-300-0500
R-82	A/60	48	~~128-28-06100~~ 128-280-6200	R-~~106~~130	A/60	48	~~129-43-00400~~ 129-300-2100
R-83	A/60	~~51~~56	~~128-31-05000~~ 128-280-3900	~~R-107~~ R-131	A/60	~~50~~48	~~129-30-03500~~ 129-300-3000
R-84	A/60	~~51~~52	~~128-44-01100~~ 128-310-5000	~~R-108~~ R-132	A/60	~~47~~49	~~129-43-01200~~ 128-290-5300
R-85	A/60	53	128-310-3100	R-133	A/60	51	127-450-0400
R-86	A/60	49	128-310-4600	R-134	A/60	50	128-290-5200
R-87	A/60	52	128-310-3800	R-135	A/60	51	127-060-3300
R-88	A/60	47	128-310-4700	R-136	A/60	51	127-061-1000
R-89	A/60	51	128-310-3600	R-137	A/60	52	127-061-0900
R-90	A/60	47	128-310-4500	R-138	A/60	50	128-290-4300
R-91	A/60	47	128-310-4400	R-139	A/60	50	128-290-7300
R-92	A/60	49	128-290-7600	R-140	A/60	51	127-061-0800
R-93	A/60	55	128-290-7700	R-141	A/60	51	127-061-0700
R-94	A/60	51	128-290-3600	R-142	A/60	52	127-061-0600
R-95	A/60	50	128-290-3700	R-143	A/60	54	127-061-0500
R-96	A/60	57	128-290-6700	R-144	A/60	57	127-061-0300
R-97	A/60	54	128-290-6500	R-145	A/60	55	127-072-4800
R-98	A/60	47	128-290-6400	**R-146**	**A/60**	**62**	**125-231-3300**
R-99	A/60	51	129-010-8300	**R-147**	**A/60**	**61**	**127-071-4500**
R-100	A/60	53	129-010-8400	R-148	A/60	56	127-071-1600
R-101	A/60	46	129-010-8500	R-149	A/60	47	129-430-1400
R-102	A/60	45	129-010-8600	R-150	A/60	52	129-430-1300
R-103	A/60	46	129-010-6400	R-151	A/60	46	129-390-3800
R-104	A/60	45	129-090-0100	R-152	A/60	49	129-390-1800
R-105	A/60	44	129-010-6600	R-153	A/60	44	129-390-3800
R-106	A/60	44	129-380-0100	R-154	A/60	44	129-390-4000
R-107	A/60	49	129-011-1800	R-155	A/60	47	128-290-4000
R-108	A/60	45	129-011-1900	R-156	A/60	48	128-290-3400
R-~~85~~109	A/60	~~48~~47	~~128-44-00700~~ 129-011-2100	~~R-109~~ R-157	A/60	~~52~~50	~~129-43-01300~~ 128-310-5200
R-~~86~~110	A/60	~~51~~43	~~128-31-03800~~ 129-211-0100	~~R-110~~ R-158	A/60	~~46~~52	~~129-43-01400~~ 128-310-5100
R-~~87~~111	A/60	~~50~~43	~~28-31-04600~~ 129-211-1100	~~R-111~~ R-159	A/60	~~46~~49	~~129-39-03800~~ 128-310-4000
R-~~88~~112	A/60	~~47~~43	~~128-31-04700~~ 129-430-0100	~~R-112~~ R-160	A/60	~~46~~47	~~129-39-01800~~ 128-310-3900
R-~~89~~113	A/60	~~50~~43	~~128-31-05100~~ 129-430-0700				

Based on the detailed TNM modeling of cumulative traffic volumes, while ~~receivers~~off-site NSLU along West Lilac Road between Old Highway 395 and the future Main Street would experience a substantial increase in ambient noise levels from West Lilac Road (+10 CNEL), the noise levels at these receivers would be less than 60 CNEL. ~~Residences~~Additionally, as discussed under direct impacts, due to the higher noise levels generated by I-15, the actual total ambient noise level~~s~~ increases would be less than predicted from West Lilac Road. NSLUs located further from these roadways would experience lower noise levels due to attenuation~~, such as residences further south~~. As an example, the NSLU along West Lilac Road~~. Such as the residence at West Lilac Road~~, where ~~due to the distance from the roadway~~ the future cumulative noise level~~, 58 CNEL~~ at 100 feet~~,~~ is calculated to be ~~approximately 54 CNEL, without consideration of ground interference or atmospheric absorption~~58 CNEL, would attenuate to 54 CNEL at the nearest residence. Therefore, future noise levels along West Lilac Road would not expose off-site residences to noise levels in excess of the County noise and land use "acceptable" compatibility standards.

Covey Lane

Based on the traffic noise modeling, existing receivers along Covey Lane between the project site and West Lilac Road would experience a potentially substantial increase in ambient noise levels (12 CNEL); however, the noise levels within 100 feet of the roadway centerline would be 59 CNEL or less. With a few exceptions, existing residences located along Covey Lane are located further than 100 feet from the centerline. The exceptions are 9550~~,~~ (R-93), 9869~~,~~ (R-96), 9852~~,~~ (R-97), and 9877 (R-100) Covey Lane, where portions of the structures are located within 100 feet of the roadway. Based on the ~~location of the 59~~detailed modeling summarized in Table 12, noise levels would not exceed 57 CNEL ~~and assessor parcel data, all~~at any of these properties ~~have still~~. Additionally, these properties contain sufficient land ~~located in area~~ with noise levels below 60 CNEL to comply with the compatibility standard of the County General Plan. ~~Therefore~~Nonetheless, existing residences would experience a substantial increase (12 CNEL) in future noise levels, i.e., greater than 10 CNEL, and the increase is considered **significant**.

Mountain Ridge Road

According to Table 11, existing receivers along Mountain Ridge Road south of the project site would experience a potentially substantial increase in ambient noise levels of 8 CNEL; however, noise levels within 100 feet of the roadway centerline would be 53 CNEL or less. Based on the distance to this noise level, the 60 CNEL would fall about 50 feet from the centerline of Mountain Ridge Road. The nearest residence to the future centerline of Mountain Ridge Road is approximately 50 feet to the west or east. Based on this distance, no off-site NSLU along Mountain Ridge Road would be exposed to noise levels in excess of 60 CNEL. Therefore, while existing residences would experience an increase of 8 CNEL in future noise levels, the increase would not expose off-site NSLUs to noise levels in excess

of the County noise and land use "acceptable" compatibility standards, i.e., 60 CNEL, and the increase is considered **less than significant**.

Lilac Hills Ranch Road

Similarly to Covey Lane, existing receivers along the future Lilac Hills Ranch Road between Phases 3 and 4 of the project site would experience a substantial increase in ambient noise levels. The proposed Lilac Hills Ranch Road is calculated to generate noise levels of ~~58~~62 CNEL at 100 feet. Based on the modeling of residences along Covey Lane, existing noise levels at the nearest residence to Lilac Hills Ranch Road, 9550 Covey Lane, are 44 CNEL. Thus, the proposed Lilac Hills Ranch Road is predicted to increase existing noise levels by approximately ~~14~~18 dB(A). When Covey Lane and Lilac Hills Ranch Road are combined, ~~there is~~ The ~~potential to~~ result ~~in~~is a combined noise level that is the same as that of Lilac Hills Ranch alone, i.e., an increase of ~~16~~18 dB(A) over the existing noise levels. The nearest residence to the future centerline of Lilac Hills Ranch Road is approximately 200 feet to the west and 50 feet north of Covey Lane, which would result in a combined noise level of ~~61~~58 CNEL at the façade. The next nearest residence is approximately 375 feet to the east of Lilac Hills Ranch Road and 200 feet north of Covey Lane; at these ~~distance~~distances the combined noise levels would be approximately ~~50~~54 CNEL. Therefore, while existing residences would not be exposed to noise levels in excess of the County "acceptable" noise compatibility standards, i.e., 60 CNEL, the substantial increase is considered **significant**.

Potential Mitigation Measures

While several methods are available to attenuate traffic noise, such as noise barriers, road surface improvements, regulatory measures (such as lower speed limits), and traffic calming devices (such as speed bumps), many of these measures are ~~generally~~ beyond the scope of the proposed project's authority, such as constructing barriers on private property where the issues of liability and maintenance into perpetuity becomes a concern. Furthermore, noise walls at existing land uses, even within a right-of-way, are not feasible for noise attenuation, as they must be broken for access points, such as walkways and driveways, which create short lengths with many openings or they must be limited by height when close to a travel way for safety reasons. Additionally, some measures, such as wall barriers, may not be desired by the local residents due to visual impacts or they may not be effective due to needs for driveways and other access points limiting the continuity of the wall. Measures such as reduced speed limits or traffic calming devices may have an unacceptable traffic impacts.

~~The analysis of future off-site traffic noise levels has shown that project-related traffic itself would result in a direct noise-related significant impact, i.e., traffic generated by the project would not increase noise levels along affected roadways with off-site sensitive receptors and would result in a substantial increase, i.e., an increase greater than 10 CNEL along Covey Lane and the future Lilac Hills Ranch Road. thereby resulting in significant impacts at these locations. However, the future noise levels at these locations would not exceed t he~~

~~General Plan noise level and land use compatibility limits for residential uses. Off-site noise Increase along all other roadway segments would result is less than significant impacts.~~

2.3.2 Cumulatively Significant Noise Impacts

Similar to direct traffic noise impacts, a cumulative traffic noise impact occurs when the noise level would exceed the applicable standard and a substantial noise level increase over existing noise occurs. The difference between direct and cumulative traffic noise impact is that the cumulative impacts are caused by project traffic in combination with traffic from other closely related past, present, and reasonably foreseeable probably future projects rather than only traffic. The project's contribution to the future noise level is determined by comparing the future with project and no project conditions~~.~~, and a determination made whether the project's contribution is "cumulatively considerable."

The cumulative assessment area for noise differs by the noise source. While construction noise is limited to areas within 500 feet of active construction and at the adjacent properties for stationary noise sources, such as heating, ventilation, and air conditioning (HVAC) systems, traffic noise would affect land uses along all roadways experiencing an increase in traffic. For roadways, this is generally limited to roadways experiencing an increase in ADT of 12 percent or greater as this would result in a measurable change in noise levels, i.e., an increase greater than 0.5 CNEL. Table 13 presents the future noise levels for the existing, future cumulative condition (i.e., no project), and for the future cumulative condition with the proposed project for affected roadways. Off-site traffic noise impacts have been evaluated based on the calculated change in noise levels due to the increase or decrease in traffic volumes. As shown in Table 13, at most locations, the project would not ~~noticeably~~have a readily noticeable increase (less than a 5 ~~dBA~~ CNEL change) noise levels over conditions without the proposed project. Additionally, the project's contribution along most segments would be less than cumulatively considerable, ~~i.e.,~~defined by the County Guidelines as an increase less than 2 CNEL~~.~~ (County of San Diego 2009a). The only exceptions to this occur along the following segments:

- E. Dulin Road: Old Highway 395 to SR-76
- West Lilac Road: Old Highway 395 to W. Main Street
  E. Main Street to W. Main Street
  Covey Lane to Circle R Drive
- Old Highway 395: E. Dulin Road to West Lilac Road
  West Lilac Road to I-15 SB Ramps
  I-15 SB Ramps to I-15 NB Ramps
- Covey Lane: Eastern Project Boundary to West Lilac Road
- Mountain Ridge Road: Southern Project Boundary to Circle R Drive
- Lilac Hills Ranch Road: Between Phases 3 and 4

Noise level ~~increase~~increases attributable to the project along Covey Lane, the future Lilac Hills Ranch Road, and West Lilac Road would increase by 10 CNEL or more. The project contribution to the noise level increases along the remaining segments would range from 3 to 8 CNEL. As indicated, increases of 2 dB(A) and greater are considered cumulatively considerable and potentially significant. However, as with direct off-site noise impacts, if the future noise level is not predicted to exceed the County's "acceptable" compatibility standard at the NSLU, the increase is not considered a significant impact since the land use would remain compatible with the noise environment. ~~Based~~

E. Dulin Road

For example, as shown on Table 13, based on traffic noise modeling, the noise level increase along East Dulin Road would be 6 CNEL and the project would contribute 3 dB(A). ~~However, as discussed previously,~~Based on the ~~absolute~~predicted noise levels along E. Dulin Road shown in Table 13, a 3~~–~~5 dB(A) reduction attributable to the spacing of the existing structures would result in future noise levels ~~(57 to 59~~ ranging from 62~~–~~ to 64 CNEL~~)~~ at ~~the~~ exterior NSLU ~~area would be less than 60 CNEL, which~~areas, i.e., backyards. Therefore, future noise levels would ~~be compatible with the affected NSLU and,~~not exceed the County's "acceptable" level for Category A land uses (60 CNEL), thus, the increase along E. Dulin Road between Old Highway 395 and SR-76 is considered a ~~**less than**~~ **significant impact**.

West Lilac Road

Noise level increases along West Lilac Road would range from 4 dB(A) to 10 dB(A) with the greatest increase occurring between Old Highway 395 and the future Main Street. As indicated in the direct impact assessment, two receptors of concern are located along this segment. Based on the distances to local roads and I-15, noise levels at these locations are dominated by traffic noise from I-15, which would range from 69 to 67 CNEL at the residence and at Kamp Kuper, respectively, while noise levels from West Lilac Road would be 60 to 58 at the residence and Kamp Kuper, respectively. As the project would not increase traffic noise levels associated with the I-15 by a perceptible amount, the predicted noise level increase from West Lilac Road would not be significant as the traffic noise generated by West Lilac Road would not affect the ambient noise level at the residence or at Kamp Kuper. Thus, the increase at these receivers attributable to the project is considered a **less than significant impact**.

Cumulative increases along West Lilac Road, between E. Main Street to W. Main Street, would be greater than 2 dB(A); however, the noise level at 100 feet from the roadway centerline would be 60 CNEL or less. Based on a review of the properties within this area, there are some residential structures that would be located within 100 feet of the roadway centerline. Thus, portions of these properties would be exposed to noise levels in excess of the "acceptable" level for residential properties. However, due to the intervening structures and/or distance from the roadway, none of the NSLU areas associated with the properties

TABLE 13
CUMULATIVE OFF-SITE TRAFFIC CNEL AT 100 FEET FROM CENTERLINE

Street/Freeway	Segment		Existing	Phases 1-5, Build-out	Cumulative	Total Increase	Project Contribution
	Start	End					
E. Dulin Road	**Old Highway 395**	**SR-76**	**61.2**	**64.5**	**67.2**	**6.0**	**3.3**
W. Lilac Road	Camino Del Rey	Camino Del Cielo	62.1	63.5	63.8	1.7	1.4
	Camino Del Cielo	Old Highway 395	58.7	60.6	60.9	2.2	1.9
	Old Highway 395	**West Main Street**	**56.0**	**66.4**	**66.57**	**10.57**	**10.4**
	West Main Street	**East Main Street ~~"F"~~**	**56.0**	**60.1**	**60.3**	**4.3**	**4.1**
	East Main Street ~~"F"~~	Covey Lane	56.0	58.0	58.1	2.1	2.0
	Covey Lane	**Circle R Drive**	**53.3**	**~~58.7~~60.3**	**~~59.6~~60.5**	**~~6.3~~7.2**	**~~5.4~~7.0**
	Circle R Drive	Lilac Road	59.0	59.3	59.6	0.6	0.3
Camino Del Cielo	Camino Del Rey	W. Lilac Road	64.9	65.0	66.7	1.8	0.1
Olive Hill Road	Shamrock Road	SR-76	61.8	61.9	63.0	1.2	0.1
Camino Del Rey	SR-76	Old River Road	66.2	66.4	66.7	0.5	0.2
	Old River Road	W. Lilac Road	65.9	66.3	67.3	1.4	0.4
	W. Lilac Road	Camino Del Cielo	64.8	64.9	66.3	1.5	0.1
	Camino Del Cielo	Old Highway 395	63.4	63.5	64.0	0.6	0.1
Gopher Canyon Road	E. Vista Way	I-15 SB Ramps	68.4	68.5	68.6	0.2	0.1
	I-15 SB Ramps	I-15 NB Ramps	67.5	67.8	69.2	1.7	0.3
	I-15 NB Ramps	Old Highway 395	65.0	65.~~5~~4	66.~~9~~8	1.~~9~~8	0.~~5~~4
Circle R Drive	Old Highway 395	Mountain Ridge Road	62.6	~~64.3~~62.6	~~65.3~~63.7	~~2.7~~1.1	~~1.7~~0.0
	Mountain Ridge Road	W. Lilac Road	59.0	~~59~~60.3	~~59.6~~60.5	~~0.6~~1.5	0.3
Old Castle Road	Old Highway 395	Lilac Road	64.9	65.0	66.7	1.8	0.1
E. Vista Way	SR-76	Gopher Canyon Road	68.3	68.4	69.7	1.4	0.1
	Gopher Canyon Road	Osborne Street	69.8	69.8	70.8	1.0	0.0
Old River Road	SR-76	Camino Del Rey	61.5	62.1	62.2	0.7	0.6
Old Highway 395	Pala Mesa Drive	SR-76	65.3	65.7	69.0	3.7	0.4
	SR-76	E. Dulin Road	63.3	64.5	66.5	3.2	1.2
	E. Dulin Road	**W. Lilac Road**	**62.9**	**65.6**	**67.6**	**4.7**	**2.7**
	W. Lilac Road	**I-15 SB Ramps**	**60.7**	**64.~~5~~8**	**65.47**	**4.7**	**3.8**
	I-15 SB Ramps	**I-15 NB Ramps**	**61.0**	**~~63.8~~64.1**	**65.~~6~~9**	**4.6**	**2.8**
	I-15 NB Ramps	Camino Del Rey	59.3	~~60.5~~61.0	63.~~5~~8	4.2	1.2
	Camino Del Rey	Circle R Drive	63.1	63.~~6~~9	65.~~0~~2	1.9	0.5
	Circle R Drive	Gopher Canyon Road	65.7	66.~~4~~3	67.~~4~~3	1.7	0.7
	Gopher Canyon Road	Old Castle Road	64.8	65.0	65.4	0.6	0.2
Champagne Boulevard	Old Castle Road	Lawrence Welk Drive	61.6	61.9	64.3	2.7	0.3
Pankey Road	Pala Mesa Drive	SR-76	43.9	43.9	67.~~4~~6	23.~~5~~7	0.0

TABLE 13
CUMULATIVE OFF-SITE TRAFFIC CNEL AT 100 FEET FROM CENTERLINE
(continued)

Street/Freeway	Segment		Existing	Phases 1-5, Build-out	Cumulative	Total Increase	Project Contribution
	Start	End					
Lilac Road	Couser Canyon Road	W. Lilac Road	56.0	56.8	58.4	2.4	0.8
	W. Lilac Road	Old Castle Road	59.6	61.1	61.2	1.6	1.5
	Old Castle Road	Anthony Road	65.0	65.4	66.1	1.1	0.4
	Anthony Road	Betsworth Road	64.8	65.1	65.7	0.9	0.3
	Betsworth Road	Valley Center Road	65.2	65.5	66.2	1.0	0.3
Valley Center Road	Woods Valley Road	Lilac Road	68.7	68.7	69.3	0.6	0.0
	Lilac Road	Miller Road	69.3	69.3	69.7	0.4	0.0
	Miller Road	Cole Grade Road	68.9	69.0	69.4	0.5	0.1
	Cole Grade Road	Vesper Road	66.0	66.1	66.5	0.5	0.1
Miller Road	Misty Oak Road	Valley Center Road	57.1	57.1	59.0	1.9	0.0
Cole Grade Road	Fruitvale Road	Valley Center Road	65.7	65.7	67.6	1.9	0.0
Covey Lane	**Project Eastern Boundary**	**W. Lilac Road**	**44.2**	**55.7**	**55.7**	**11.2**	**11.2**
Mountain Ridge Road	**Project Southern Boundary**	**Circle R Drive**	**45.0**	**52.7**	**52.7**	**7.7**	**7.7**
Lilac Hills Ranch Road	**Phase 3 Southern Boundary**	**Phase 4 Northern Boundary**	**DNE**	**57.3**	**57.7**	**57.7**	**57.7**
I-15	Riverside County Boundary	Old Highway 395	81.6	81.7	83.4	1.8	0.1
	Old Highway 395	SR-76	81.6	81.7	84.1	2.5	0.1
	SR-76	Old Highway 395	80.8	80.9	82.6	1.8	0.1
	Old Highway 395	Gopher Canyon Road	80.7	80.9	82.5	1.8	0.2
	Gopher Canyon Road	Deer Springs Road	81.0	81.2	82.5	1.5	0.2
	Deer Springs Road	Centre City Parkway	83.5	83.7	85.1	1.6	0.2
	Centre City Parkway	El Norte Parkway	83.3	83.4	84.8	1.5	0.1
	El Norte Parkway	SR-78	83.9	84.0	85.2	1.3	0.1
	SR-78	W. Valley Parkway	85.7	85.7	86.2	0.5	0.0
	W Valley Parkway	Auto Parkway	85.4	85.4	85.9	0.5	0.0
	Auto Parkway	W Citracado Parkway	85.2	85.3	85.7	0.5	0.1
	W Citracado Parkway	Via Rancho Parkway	85.8	85.8	86.1	0.3	0.0
	Via Rancho Parkway	Bernardo Drive	85.8	85.9	86.6	0.8	0.1
	Bernardo Drive	Rancho Bernardo Road	85.9	85.9	86.2	0.3	0.0
	Rancho Bernardo Road	Bernardo Center Drive	86.1	86.1	86.2	0.1	0.0
	Bernardo Center Drive	Camino Del Norte	86.2	86.2	86.2	0.0	0.0

NOTE: DNE= Does not exist; **Bold** numbers and receivers indicate potential traffic noise impacts.

would be exposed to noise levels greater than 60 CNEL. Thus, impacts to NSLU along West Lilac Road, between E. Main Street to W. Main Street, would be **less than significant ~~impact~~**.

Old Highway 395

Cumulative noise levels would be approximately 2 dB(A) higher than under the direct impacts along Old Highway 395, between E. Dulin Road and the I-15 NB ramps, which would result in a future noise level ~~at this NSLU~~ of 56 to 57 CNEL at the following segments. Thus, this would not represent a cumulatively considerable impact.

- ~~Old Highway 395: E. Dulin Road to West Lilac Road~~
  ~~West Lilac Road to I-15 NB Ramps~~

West Lilac Road and Mountain Ridge Road

Similarly, noise level increases along the following segments would be potentially significant at 6 dB(A) or greater with the project contribution of 5 to 14 dB(A). However, as shown in Table 13, noise levels at 100 feet from the roadway would be less than 60 CNEL; therefore, the increase would not be considered cumulatively considerable along ~~the following segments~~Mountain Ridge Road: Southern Project Boundary to Circle R Drive.

~~**West Lilac Road**~~: **Covey Lane** ~~to Circle R Drive~~ **and Lilac Hills Ranch Road**

- ~~Mountain Ridge Road: Southern Project Boundary to Circle R Drive~~

As previously discussed, significant project level impacts would occur along Covey Lane and the future Lilac Hills Ranch Road as residences along these roadway segments would experience a substantial increase (+10 CNEL) in ambient noise levels. When Covey Lane and Lilac Hills Ranch Road are combined there is the potential to result in a combined noise level increase of 16 dB(A) over the existing noise levels in proximity to the intersection of these roads. The nearest residence to the future centerline of Lilac Hills Ranch Road is approximately 200 feet to the west and 50 feet north of Covey Lane, which~~-~~, based on Table 13, would result in a combined noise level of 61 CNEL at the building façade. As this noise level is based on the conservative modeling, it does not account for intervening topography, the ~~receptor~~NSLU was included in the detailed modeling shown in Table 12. Based on the detailed modeling, the future noise level would be 54 CNEL. The next nearest residence is approximately 375 feet to the east of Lilac Hills Ranch Road and 200 feet north of Covey Lane at these distance the combined noise levels would be approximately 50 CNEL. Based on the calculated noise levels, no off-site NSLU would be exposed to noise levels in excess of 60 CNEL. However, because the increase in ~~the existing~~ noise level would exceed 10 CNEL, the increase is considered a **significant impact**.

Summary

Based on the project design, the project could place future on-site NSLUs in areas where the projected cumulative noise levels from road traffic could exceed the County's exterior noise limits, thus implementation of MM N-1 would be required to reduce traffic noise levels at NSLUs at completion of project build-out to a **less than significant** level. Additionally, ~~as noise walls are not effective at reducing~~with respect to interior noise levels~~ at second-floor locations~~, MM N-2 would be required to verify that interior noise levels comply with the County interior noise levels limits~~. However, even after implementation of mitigation measure MM N-1 and MM N-2~~ and, therefore, cumulative impacts to on-site NSLU would be **less than significant**.

With respect to off-site NSLUs, while the off-site land uses would experience a 10 dB or greater change in future noise levels, which is considered a significant impact, the same locations would be exposed to noise levels in excess of County compatibility levels. Additionally, for the reasons previously discussed, there is no feasible mitigation that would reduce the identified significant impacts and, therefore, off-site cumulative traffic noise impacts along Covey Lane and the future Lilac Hills Ranch Road would ~~continue to~~ be **significant and unavoidable**.

2.3.3 Design Considerations and Mitigation Measure Calculations

2.3.3.1 Design Considerations

No design considerations are included in the project for noise generated at off-site locations

2.3.3.2 Mitigation Measures

~~As previously identified,~~As previously identified, while the future noise levels at these locations would not exceed the General Plan noise level and land use compatibility limits for residential uses, there would be substantial increases in noise levels. ~~s~~Several methods are available to attenuate traffic noise, such as noise barriers, road surface improvements, regulatory measures (such as lower speed limits), and traffic calming devices (such as speed bumps). However, none of these measures are considered feasible as these measures are beyond the scope of the proposed project's authority. As example, constructing barriers on private property would be effective, but the issue of liability over who is responsible for the wall, say if in an earthquake it fell on a parked car, or the maintenance into perpetuity, which is required for most noise barriers to maintain their effectiveness over many years. In addition, some measures may not be desired by the local residents due to visual or traffic impacts. Some measures, such as barriers, may not be effective due to needs for driveways and other access points limiting the continuity of the barrier. As sound walls may not be constructed for these reasons, the mitigation may not

reduce or avoid the impact, thus, off-site sound walls are considered infeasible for purposes of mitigating impacts. Finally, measures such as reduced speed limits or traffic calming devices require legal or government enforcement and may have ~~an~~ unacceptable impacts in other areas, such as speed bumps lengthening emergency response calls. Due to these reasons, mitigation of off-site impacts from noise level increases along Covey Lane and the future Lilac Hills Ranch Road are considered **significant and unmitigable direct and cumulatively considerable impacts** of the project.

3.0 Project-generated Airborne Noise

3.1 Guidelines for the Determination of Significance

The County Noise Ordinance, Section 36.404, sets limits on the noise levels generated from one property to another, such as from mechanical equipment. Unless a variance has been applied for by an applicant and granted by the County, it is unlawful for a person to cause or allow noise generated on a particular property to exceed the 1-hour average sound level, at any point on or beyond the boundaries of the property, as shown in Table 14.

Section 36.409 states:

Except for emergency work, it shall be unlawful for any person to operate construction equipment or cause the construction equipment to be operated, exceeding an average sound level of 75 dB(A) for an 8-hour period, between 7 a.m. and 7 p.m., when measured at the boundary line of the property where the noise source is located or on any occupied property where the noise is being received.

TABLE 14
COUNTY OF SAN DIEGO NOISE ORDINANCE SOUND LEVEL LIMITS

Zone	Applicable Hours	Sound Level Limit dB L_{eq} (1 hour)
(1) RS, RD, RR, RMH, A70, A72, S80, S81, S90, S92, RV, and RU with a General Plan Land Use Designation density of less than 10.9 dwelling units per acre.	7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	50 45
(2) RRO, RC, RM, S86, V5, RV and RU with a General Plan Land Use Designation density of 10.9 or more dwelling units per acre.	7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	55 50
(3) S-94, V4 and all other commercial zones.	7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	60 55
(4) V1, V2 V1 V2 V3	7 a.m. to 10 p.m. 10 p.m. to 7 a.m. 10 p.m. to 7 a.m. 7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	55 55 50 70 65
(5) M-50, M-52, and M-54	Anytime	70
(6) S82, M56 and M58	Anytime	75
(7) S88 (see subsection (c) below)		

Source: County of San Diego Noise Ordinance, Section 36.404
Notes:
(a) Except as provided in section 36.409 of this chapter, it shall be unlawful for any person to cause or allow the creation of any noise, which exceeds the one-hour average sound level limits in Table 36.404, when the one-hour average sound level is measured at the property line of the property on which the noise is produced or at any location on a property that is receiving the noise
(b) Where a noise study has been conducted and the noise mitigation measures recommended by that study have been made conditions of approval of a Major Use Permit, which authorizes the noise-generating use or activity and the decision making body approving the Major Use Permit determined that those mitigation measures reduce
potential noise impacts to a level below significance, implementation and compliance with those noise mitigation measures shall constitute compliance with subsection (a) above.
(c) S88 zones are Specific Planning Areas which allow for different uses. The sound level limits in Table 14 above that apply in an S88 zone depend on the use being made of the property. The limits in Table 14, subsection (1) apply to property with a residential, agricultural or civic use. The limits in subsection (3) apply to property with a commercial use. The limits in subsection (5) apply to property with an industrial use that would only be allowed in an M50, M52 or M54 zone. The limits in subsection (6) apply to all property with an extractive use or a use that would only be allowed in an M56 or M58 zone.
(d) If the measured ambient noise level exceeds the applicable limit in Table 36.404, the allowable one-hour average sound level shall be the one-hour average ambient noise level, plus three decibels. The ambient noise level shall be measured when the alleged noise violation source is not operating.
(e) The sound level limit at a location on a boundary between two zones is the arithmetic mean of the respective limits for the two zones. The one-hour average sound level limit applicable to extractive industries, however, including but not limited to borrow pits and mines, shall be 75 decibels at the property line regardless of the zone in which the extractive industry is located.
(f)A fixed-location public utility distribution or transmission facility located on or adjacent to a property line shall be subject to the sound level limits of this section, measured at or beyond 6 feet from the boundary of the easement upon which the facility is located.

Section 36.410 states:

In addition to the general limitations on sound levels in Section 36.404 and the limitations on construction equipment in Section 36.409, the following additional sound level limitations shall apply:

(a) Except for emergency work or work on a public road project, no person shall produce or cause to be produced an impulsive noise that exceeds the maximum sound level shown in Table 15, when measured at the boundary line of the property where the noise source is located or on any occupied property where the noise is received, for 25 percent of the minutes in the measurement period, as described in subsection (c) below. The maximum sound level depends on the use being made of the occupied property. The uses in Table 15 are as described in the County Zoning Ordinance.

TABLE 15
COUNTY OF SAN DIEGO CODE SECTION 36.410, MAXIMUM SOUND LEVEL (IMPULSIVE) MEASURED AT OCCUPIED PROPERTY IN DECIBELS

Occupied Property Use	Decibels dB(A)
Residential, village zoning or civic use	82
Agricultural, commercial or industrial use	85

(b) Except for emergency work, no person working on a public road project shall produce or cause to be produced an impulsive noise that exceeds the maximum sound level shown in Table 16, when measured at the boundary line of the property where the noise source is located or on any occupied property where the noise is received, for 25 percent of the minutes in the measurement period, as described in subsection (c) below. The maximum sound level depends on the use being made of the occupied property. The uses in Table 16 are as described in the County Zoning Ordinance.

TABLE 16
COUNTY OF SAN DIEGO CODE SECTION 36.410, MAXIMUM SOUND LEVEL (IMPULSIVE) MEASURED AT OCCUPIED PROPERTY IN DECIBELS FOR PUBLIC ROAD PROJECTS

Occupied Property Use	Decibels dB(A)
Residential, village zoning or civic use	85
Agricultural, commercial or industrial use	90

(c) The minimum measurement period for any measurements conducted under this section shall be 1 hour. During the measurement period a measurement shall be conducted every minute from a fixed location on an occupied property. The measurements shall measure the maximum sound level during each minute of the measurement period. If the sound level caused by construction equipment or the producer of the impulsive noise exceeds the maximum sound level for any portion of any minute, it will be deemed that the maximum sound level was exceeded during that minute.

The project would ~~also~~ result in a significant impact if it would result in a substantial permanent increase in ambient noise levels in the vicinity. A substantial noise increase is defined as an increase of 10 dB(A) CNEL above existing conditions as stated in the County of San Diego Noise Report Guidelines Section 4.1-A (ii).

3.2 Potential Operational Noise Impacts (Non-Construction Noise)

3.2.1 Potential Build-out Noise Conditions without Mitigation

Project operational noise impacts were evaluated by review of the most recent project plans, proposed operations, and noise data. Traffic noise impacts were evaluated by review of data in the project traffic report, Traffic Impact Study – Lilac Hills Ranch Specific Plan Project (Chen Ryan ~~2013~~2014).

3.2.1.1 Stationary Source Noise

Project implementation would create many instances of on-site residential land uses located adjacent to or sharing a boundary with commercial and mixed-use land uses as well as recreational and institutional uses. All proposed land uses would introduce on-site stationary noise sources, including rooftop heating, ventilation, and air conditioning (HVAC) equipment; mechanical equipment; emergency electrical generators; parking lot activities; loading dock operations; and parks, schools, and recreation activities.

3.2.1.2 Mechanical HVAC Equipment

HVAC equipment could be a primary noise source associated with commercial or industrial uses. HVAC equipment is often mounted on rooftops, located on the ground, or located within mechanical rooms. The noise sources could take the form of fans, pumps, air compressors, chillers, or cooling towers.

Noise levels from HVAC equipment vary substantially depending on unit efficiency, size, and location, but generally range from 45 to 70 dB(A) L_{eq} at a distance of 50 feet (U.S. EPA 1971). Accounting for typical attenuation rates of 6 dB per doubling of distance, noise levels attributed to unshielded HVAC mechanical systems could exceed the County property line noise limit (50 dB(A) L_{eq}) within 475 feet of the source. In addition, sources located within 800 feet of a NSLU property line could exceed the County noise limit for nighttime stationary-source noise. As a result, the impact of noise from HVAC equipment under the project would be **significant.**

3.2.1.3 Emergency Electrical Generators

Emergency generators may be used to supply necessary power requirements to vital systems within constructed facilities such as medical facilities and the WRF. Emergency generators are typically operated under two conditions: loss of main electrical supply or preventive maintenance/testing. The operation of mechanical equipment associated with emergency operations is exempt from the noise standards outlined in the San Diego County Municipal Code; thus, this analysis focuses on routine preventive maintenance and testing operations, which are conducted on a periodic basis.

Reference noise-levels of emergency generators with rated power outputs of 1,500 kilowatts are approximately 95 dB(A) at 7 meters (23 feet) (Cummins Power Generation 2009). Based on this reference noise level, emergency electrical generators located within 3,500 feet of noise-sensitive land uses could exceed the County noise limit for daytime stationary-source noise. In addition, generators located within 6,000 feet of NSLU could exceed the County property line noise limit for nighttime stationary-source noise. Section 36.417 of the County Code exempts emergency generators for “hospital[s] or other medical or surgical facility that [are] providing emergency medical services” from the property line noise level limits, thus electrical generators associated with medical facilities would be exempt, but not generators associated with the WRF or other facilities. As specific locations for generators have not been developed, the project includes a Design Consideration (DC)-1 to require noise levels from electrical generators to comply with the County property line noise level limits at all adjacent properties. Therefore, this impact would be **less than significant**.

3.2.1.4 Parking Lot Activities

Parking lots would ~~are expected to~~ be included in the Town Center and Neighborhood Centers, multi-family residential developments, the group residential and group care facility, senior center, school, and parks. The details required to accurately predict noise emissions from car parking activities, location, size, and parking demand are not yet available. Therefore, the potential impact of noise generated by parking lot operations is evaluated in this analysis using a representative scenario.

Activities making up a single parking event include vehicle arrival, limited idling, occupants exiting the vehicle, door closures, conversations among passengers, occupants entering the vehicle, startup, and departure of the vehicle. A representative parking lot with 200 stalls and 400 parking events per hour would produce a noise level that exceeds the County standard for the daytime at distances up to 200 feet and exceeds the nighttime noise standard at distances up to 350 feet. It is possible that the distance between parking lots and residential land uses would be less than 350 feet because shared boundaries between non-residential uses exist under the project. Therefore, the impact of noise generated from parking lot activities is considered a **significant** impact.

3.2.1.5 Loading Dock and Delivery Activity

Noise sources associated with loading dock and delivery activities can include trucks idling, on-site truck circulation, trailer-mounted refrigeration units, pallets dropping, and the operation of forklifts. Typical hourly noise levels for loading dock operations range from 55 to 60 dB(A) L_{eq} and from 80 to 84 dB(A) L_{max} (maximum noise level) at a distance of 50 feet (EDAW 2006). Based on these measured noise levels, the County's daytime stationary noise criterion would be exceeded approximately 125 feet from the acoustic center of the loading dock and the nighttime stationary noise criterion would be exceeded approximately 200 feet from the acoustic center of the loading dock.

It is possible that the distance between loading docks and residential land uses could be less than 200 feet because shared boundaries between commercial and residential land uses are planned under the project. Therefore, noise generated from loading dock and delivery activities is considered a **significant** impact.

3.2.1.6 Recreational and Educational Activities

Activities in the proposed parks, open spaces, and schools would also be sources of noise. The County Noise Ordinance considers noise from public or private schools exempt from the Code. Noise associated with outdoor recreation areas would generally take place during daylight hours and at distances at least 50 feet from on-site residences. In addition, any activities taking place within parks that are considered a nuisance would be illegal under the County Noise Ordinance and would be enforced by the San Diego County Sheriff's Department. Thus, since noise would either be exempt from standards or controlled by law enforcement, no standard violation would be expected to occur from recreational and education activities. This impact is considered a **less than significant** impact.

3.2.1.7 Special Events

Special events are identified in the Specific Plan and may include farmers markets, public holiday festivals, sports tournaments/ceremonies, parades, marathons, walkathons, or bike races. ~~and T~~the Town Green (P-8) is intended to be the primary location for special events

within the community. According to the Specific Plan "Special Events will be allowed and the County's normal special events permitting process will be followed for events held on private property." A Community Event Permit is a written approval from the County to operate a community event. The Department of Environmental Health serves as the coordinator for all Community Event permits and coordinates with other County agencies during the permitting and approval process. As part of the permit requirements a noise assessment would be required by the County if noise sources, such as live or amplified music, would be included as part of the event. The noise assessment must determine if an impact would occur and identify mitigation to reduce noise levels to comply with the permit requirements. Thus, since any proposed special event would be subject to the County permit process, no standard noise violation would be expected to occur from special event activities. This impact is considered a **less than significant** impact.

3.2.1.8 Dog Parks

The Specific Plan envisions dog parks within all of the public and private parks throughout the project. Conceptual locations have been identified in the Specific Plan. Based on the conceptual layouts, proposed dog parks would generally be located away from ~~local~~ NSLUs and would be excluded from small parks adjacent to residential uses. However, some of the potential locations would be within a 100 feet to residential property lines. As the dog park locations are conceptual and may be relocated during the final design, the following analysis focuses on developing constraints to assist in the siting of the dog parks.

Principal noise sources from the dog park would be from dogs barking, and owners calling and issuing commands to pets. To determine operational noise impacts, noise measurements of activities conducted by AECOM in 2011 were used as reference noise levels. Estimated noise levels from future activity were compared to noise limits based on the zoning of adjacent properties.

Based on observations of similar activities at two other dog parks in the County (Griffen and Maddox Park), typical visits to the park last for 30 to 45 minutes and the majority of the activities and dog noise occur close to seating areas and the entrance to the runs (AECOM 2011).

Dog park noise is generally sporadic and an individual dog barking generally lasts less than a few seconds (AECOM 2011). Based on 1-second intervals, an individual dog bark can reach approximately 68 to 70 dB(A) L_{max} at 50 feet (AECOM 2011). The hourly equivalent reference noise level for the various activities at the proposed dog parks, including vocalizations of owners, would be approximately 64 dB(A) L_{eq} and 81 dB(A) L_{max} at 50 feet.

Due to the potential movement and speculative nature of specifically locating each source at any given time within the dog park, noise calculations are determined from the center of the dog park. For a conservative assessment of noise impacts, an acoustically hard surface ~~is assumed~~ was used for determining noise propagation. Based on the maximum hourly noise

levels measured at local dog parks, the hourly noise level would potentially exceed the property line noise ordinance limit of 50 dB(A) L_{eq} within 255 feet and 55 dB(A) L_{eq} within 145 feet. As the final location of dog parks is ~~are~~ not available, dog park noise may exceed the property line limits and the impact would be **significant**.

The proposed dog park does not include facilities that are likely to have mechanical equipment, such as HVAC units.

Potential maintenance activity associated with the dog park would generate similar noise levels to maintenance activities at any park. The proposed dog park would include trash cans for animal waste; however, use of trash cans was not found to be a substantial source of noise during observations at similar facilities and is not anticipated to be a significant noise source at the proposed dog park. Thus, the proposed dog park would result in a **less than significant** noise impact from on-site maintenance operations.

3.2.1.9 Water Reclamation Facility

The project includes the construction and operation of a WRF on an approximately 2.4-acre site. Noise associated with operation of the on-site WRF was analyzed to ensure that noise levels would not exceed the applicable County Noise Ordinance standards. South of the WRF would be zoned residential and would have noise limits of 50 dB(A) L_{eq} from 7:00 a.m. to 10:00 p.m. and 45 dB(A) L_{eq} from 10:00 p.m. to 7:00 a.m. The WRF site would be subject to these hourly average noise limits.

A reference noise level of 70 dB(A) L_{eq} at 50 feet from the edge of the nearest noise source was used to assess potential impacts from operation of the WRF. The noise-producing equipment is anticipated to include a blower room, odor scrubbers, screens and augers, mixers, exhaust fans, air compressors, and air conditioners. The majority of the sources associated with the proposed WRF would be located inside structures; however, the reference noise level does not account for noise reduction provided by locating any equipment inside enclosed buildings or orientation of the source. Therefore, the reference level of 70 dB(A) L_{eq} at 50 feet is reduced by 15 dB(A) to account for the proposed WRF.

~~This analysis assumed that t~~The main noise source associated with the operation of the WRF would be located at the center of the operations and sludge dewatering buildings at the south end of the site. Based on the MUP site plan, the nearest residential property line would be located approximately 100 feet south of the center of the operations and sludge dewatering buildings. Based on a~~Assuming~~ 6 dB reduction for every doubling of distance, 70 dB(A) L_{eq} at 50 feet would attenuate to 49 dB(A) L_{eq} at 100 feet. Therefore, the noise level at the residential property line due to the WRF would be 49 dB(A) L_{eq} without mitigation. Therefore, noise generated from the WRF is considered a **significant** impact.

3.2.1.10 Recycling Facility

According to the Specific Plan, "the purpose of the recycling facility is to provide and encourage recycling [by] project residents in addition to the weekly collection of green waste." As envisioned in the Specific Plan, the facility would include office functions as well as storage for any equipment or materials. The facility would also include temporary roll-off bins or storage containers where recyclables and/or green waste generated from local residents can be consolidated for efficient off-site processing. Additionally, the Specific Plan considers a future buy-back center at this location for residents to redeem California Redemption Value (CRV) containers.

The proposed collection of recycling and green waste is initially seen as a simple storage operation with little on-site operation other than the delivery of empty containers and the pick-up of full containers by large trucks, noise associated with vehicles accessing the site and dropping off, and general site maintenance activities. Noise levels associated with these activities are anticipated to be similar to typical commercial loading noises and dumpster use, which are not anticipated to exceed County property line noise level limits.

However, a small-scale neighborhood CRV buy-back facility would include stationary processing equipment and limited mobile equipment. Anticipated stationary processing equipment would include material conveyors and an aluminum can compactor while mobile equipment would typically be limited to natural gas- or propane-powered forklifts with occasional heavy trucks to haul material to larger facilities.

The proposed RF would be located in the central-western portion of the Specific Plan area. The property would be bound by commercial uses to the north (zoned C-34), with open space to the east, south and west. Residential and other uses would be ~~are~~ separated from the RF by an open space area. The conceptual site plan in the Specific Plan indicates the facility's main building would be located along the western property line. The primary dropoff location is anticipated ~~assumed~~ to be located immediately east of the building with sorting and minor processing occurring within the facility building. The southern portion of the site would be used primarily for bin storage and processed and classified materials storage until a sufficient quantity is accumulated to be delivered a processing facility. It is anticipated a facility of this scale would generate an average of approximately 2 two-way heavy truck trips per day.

Noise sources associated with the RF would include trucks idling, on-site truck circulation, material dropping, and the operation of forklifts as well as patron vehicles. Based on samples taken at similar facilities, typical unshielded hourly noise levels from these sources would range from 60 to 75 dB(A) L_{eq} at a distance of 50 feet with occasional higher maximums from materials falling into empty sorting bins, banging of sorting and transport bins, and backup alarms. Based on the Master TM and Conceptual Site Plan for the RF, the noise level at the nearest property line is anticipated to be as near as 50 feet from the center of activities and approximately 300 feet to the nearest residential property line. Based on

these parameters noise levels are anticipated to attenuate to reach up to 75 dB(A) at the nearest property line and approximately 57 dB(A) L_{eq} at the next closest property line.

However, a site plan has not been developed for the proposed RF; therefore, specific facility components have not been identified nor designed and it is possible that the loading or sorting areas or other noise sources could be placed in closer proximity to residential land uses than assessed in this analysis. Therefore, noise generated from the RF is considered a **significant** impact.

3.2.2 Design Considerations and Mitigation Measures

3.2.2.1 Design Considerations

The inclusion of the following design feature as a policy in the Lilac Hills Ranch Specific Plan was considered in the preceding analysis and would reduce annoyance to affected sensitive receptors.

DC-1: All emergency generators within 500 feet of a property line shall be located within enclosures, behind barriers, or oriented within the site design to eliminate the line of site between sensitive receptors and generators ~~and noise~~. Noise testing ~~will~~shall be conducted to verify generator noise levels comply with County standards, Section 36.404, at the nearest property line prior to full operation.

3.2.2.2 Mitigation Measures

Implementation of the following mitigation measures is required by the project in order for all noise standards to be obtained.

MM N-3: **Summary**: Implement best engineering practices and consider the placement of noise generating equipment and shielding when installing stationary noise sources associated with HVAC systems and standby generators.

- Prior to the issuance of ~~a~~any building permit~~,~~ for stationary noise-generating equipment such as HVAC systems or standby generators, the applicant, or its designee, ~~will~~shall prepare an acoustical study(s) of the proposed ~~mechanical equipment including generators, which will~~stationary noise sources associated with HVAC systems and standby generators for submittal to the County for review and approval. The acoustical study shall identify all noise-generating equipment~~,~~ and predict noise levels at the applicable property lines from all identified equipment~~, and recommended~~. Where predicted noise levels would exceed those levels established by County Noise Ordinance Section 36.40, the acoustical study shall identify mitigation ~~to be implemented~~ measures shown to be effective in reducing noise levels (e.g., enclosures,

barriers, site orientation), to be implemented as necessary, to comply with the County Noise Ordinance Section 36.404~~.~~, and such mitigation measures shall be implemented by the applicant or its designee prior to issuance of any building permit.

Implementation: Project applicant(s) and primary contractor(s) of all project phases.

Timing: Prior to issuance of building permits.

Enforcement: County

MM N-4: **Summary:** Best engineering practices shall be used in the placement of noise generating equipment when developing site plans for commercial land uses containing loading docks, delivery areas, and parking lots such that noise levels at the property line comply with County standards. Development plans shall be accompanied by an acoustical analysis demonstrating compliance with County standards for approval prior to issuance of building permits.

The following stationary source noise mitigation measure is required to minimize noise impacts to receptors and reduce the identified impacts to less than significant:

- Prior to the issuance of ~~a~~any building permit for commercial land uses containing loading docks, delivery areas, and/or parking lots, the applicant, or its designee, ~~will~~shall prepare an acoustical study(s) of the proposed commercial land use site plans~~, which will~~ for submittal to the County for review and approval. The acoustical study shall identify all noise-generating areas and associated equipment~~, predict~~ and shall calculate predicted noise levels at the applicable property lines from all identified ~~areas, and recommended~~sources. Where predicted noise levels would exceed those established by County Noise Ordinance Section 36.404, the acoustical study shall identify mitigation measures to be implemented (e.g., enclosures, barriers, site orientation, reduction of parking stalls), to be implemented as necessary, to comply with the property line noise level limits established by County Noise Ordinance Section 36.404, and such measures shall be implemented by the applicant or its designee prior to the issuance of a building permit.

Implementation: Project applicant(s) and primary contractor(s) of all project phases~~.~~

Timing: Prior to issuance of building permits~~.~~

Enforcement: County

~~**Implementation:** Project applicant(s) and primary contractor(s) of all project phases.~~

~~**Timing:** Prior to issuance of building permits.~~

~~**Enforcement:** County~~

MM N-5: **Summary:** Best engineering practices shall be used and considered in the placement and design of dog parks, such that noise levels at surrounding property lines comply with County standards for the applicable zone. Development plans shall be accompanied by an acoustical analysis demonstrating compliance with County standards for approval prior to issuance of building permits.

The following stationary source noise mitigation measure is required to minimize noise impacts to receptors and reduce the identified impacts to less than significant:

- Prior to the issuance of ~~a~~any building permit associated with the dog parks, the applicant, or its designee, ~~will~~shall prepare an acoustical study(s) of the proposed dog parks~~, which will predict~~ for submittal to the County for review and approval. The acoustical study shall calculate predicted noise levels at potentially affected property lines from all potential sources~~, and recommended~~. Where predicted noise levels would exceed those established by County Noise Ordinance Section 36.404, the acoustical study shall identify mitigation ~~to be implemented~~ measures shown to be effective in reducing noise levels (e.g., barriers, site location, etc~~.), .~~) to be implemented as necessary~~,~~ to comply with the property line noise levels established by County Noise Ordinance Section 36.404, and such measures shall be implemented by the applicant or its designee prior to the issuance of any building permit.

Implementation: Project applicant(s) and primary contractor(s) of all project phases~~.~~

Timing: Prior to issuance of building permits~~.~~

Enforcement: County

~~**Implementation:** Project applicant(s) and primary contractor(s) of all project phases.~~

~~**Timing:** Prior to issuance of building permits.~~

~~**Enforcement:** County~~

MM N-6: **Summary:** Best engineering practices shall be used and considered in the placement of noise generating equipment when developing site plans for the WRF such that noise levels at the property line comply with County standards. Development plans shall be accompanied by an acoustical analysis demonstrating compliance with County standards for approval prior to issuance of building permits.

The following stationary source noise mitigation measure is required to minimize noise impacts to receptors and reduce the identified impacts to less than significant:

- Prior to the issuance of a building permit for the Water Reclamation Facility, the applicant, or its designee, ~~will~~shall prepare an acoustical study(s) of the proposed WRF~~, which will~~ for submittal to the County for review and approval. The acoustical study shall identify all noise-generating sources and associated equipment~~, predict~~ and calculate predicted noise levels at potentially affected property lines from all identified sources~~, and recommended~~. Where predicted noise levels would exceed those established by County Noise Ordinance Section 36.404, the acoustical study shall identify mitigation ~~to be implemented~~ measures shown to be effective in reducing noise levels (e.g., enclosures, barriers, site orientation, etc.~~),~~) to be implemented, as necessary, to comply with the property line noise levels limits established by County Noise Ordinance Section 36.404, and such measures shall be implemented by the applicant or its designee prior to issuance of a building permit.

Implementation: Project applicant(s) and primary contractor(s) of all project phases~~.~~

Timing: Prior to issuance of building permits~~.~~

Enforcement: County

~~**Implementation:** Project applicant(s) and primary contractor(s) of all project phases.~~

~~**Timing:** Prior to issuance of building permits.~~

~~**Enforcement:** County~~

MM N-7: **Summary:** Best engineering practices shall be used and considered in the placement of noise generating equipment when developing site plans for the RF such that noise levels at the property line comply with County standards. Development plans shall be accompanied by an acoustical analysis demonstrating compliance with County standards for approval prior to issuance of building permits.

The following stationary source noise mitigation measure is required to minimize noise impacts to receptors and reduce the identified impacts to less than significant:

- Prior to the issuance of a building permit for the Recycling Facility, the applicant, or its designee, ~~will~~shall prepare an acoustical study(s) of the proposed recycling/green waste collection facility~~, which will~~ for submittal to the County for review and approval. The acoustical study shall identify all noise-generating sources and associated equipment~~,~~ ~~predict~~ and calculate predicted noise levels at potentially affected property lines from all identified sources~~, and recommended~~. Where predicted noise levels would exceed those established by the County Noise Ordinance Section 36.40, the acoustical study shall identify mitigation ~~to be implemented~~ measures shown to be effective in reducing noise levels (e.g., enclosures, barriers, site orientation, etc.~~), as necessary,~~) to be implemented to comply with the property line noise level limits of County Noise

Ordinance Section 36.404, and such measures shall be implemented by the applicant or its designee prior to issuance of a building permit.

Implementation: Project applicant(s) and primary contractor(s) of all project phases

Timing: Prior to issuance of building permits

Enforcement: County

3.3.2.3 Summary

MM N-3 through MM N-7 would ensure that on-site stationary noise sources associated with the project would be reduced to a **less than significant** level at the nearest sensitive land uses.

3.3 Potential General Construction Noise Impacts

3.3.1 Potential On-Site Temporary Construction Noise Impacts without Mitigation

The project includes development of a variety of land uses (e.g., residential, assisted care facilities, a school, parks, open space, commercial, etc.) and supporting on-site roadway and infrastructure improvements. Construction of the proposed land uses and improvements would occur by phase, within the specific plan area, in a sequence established by individual land owners (project applicant[s]) and influenced by market demand. Construction phasing is currently set to commence in 2014 and finishing all five phases by 2024.

Construction noise typically occurs intermittently and varies depending upon the nature or phase of construction (e.g., demolition/land clearing, grading and excavation, erection). Construction noise in any one particular area would be temporary and short-term and would include noise from activities such as site preparation, truck hauling of material, pouring of concrete, and use of power tools. Noise would also be generated by construction equipment, including earthmovers, material handlers, and portable generators, and could reach high levels for brief periods.

Although noise ranges are generally similar for all construction phases, the grading phase tends to involve the most equipment. The noisiest equipment types operating at construction sites typically range from 88 dB to 91 dB L_{max} at 50 feet. Typical operating cycles may involve 2 minutes of full power, followed by 3 or 4 minutes at lower settings. Average noise levels from the center of construction sites typically range from approximately 65 to 83

dB(A) L_{eq} at 50 feet, depending on the activities performed. Typically, a 12-hour L_{eq} is lower than an hourly $L_{eq.}$

Construction may also involve blasting to break up bedrock close to the ground surface. Noise generated by blasting is very low in frequency, below the frequency range audible to humans. Use of impulsive noise equipment (e.g., pile driving or explosives blasting) is discussed in Section 3.4.

Grading activities generate the greatest amount of noise, as this phase requires the largest and heaviest pieces of equipment. It is anticipated the development would involve phased grading on-site and may overlap grading activities associated with off-site improvements. Each phase of the proposed project would be located adjacent to NSLU property lines. The nearest occupied properties would be the properties located within the project boundary, but are not a part of the project. The actual physical residences are generally located over 100 feet from the property boundary. Assuming a typical daily work area of 10 acres, that is basically square, would result in a box with the approximate dimensions of 650 by 665 feet, and an average distance of 325 feet for construction noise assessment. At 325 feet, short-term noise levels may reach as high as 78 dB(A) L_{max} for short periods, typically less than one minute, when several pieces of equipment are in proximity and the engines are under full load. Average hourly noise levels would be approximately 75 dB(A) L_{eq}. While this would comply with the County standards, there is a possibility that residences that are not-a-part (NAP) of the project, as shown in Figure 3, could be exposed to noise levels in excess of the County's standard. This would potentially happen when construction occurs along more than one boundary of a given property, which would allow for the potential doubling (+3), if construction occurred along two property lines simultaneously, or even quadrupling (+6) of construction noise levels over those calculated, if construction were to occur along four sides simultaneously. Therefore, if construction were to occur along more than one side of an NAP property construction noise levels would exceed 75 dB(A) L_{eq} and, the proposed project would violate the County Noise Ordinance~~.~~, thereby resulting in a **potentially significant impact**.

In addition, future on-site residences that would be built prior to the final development of the project site would be affected. While the ~~complete~~ development plan is not available, ~~it has been assumed that~~ future residential development sites would be separated by roadways and would be as near as 50 feet from active construction. At a distance of 50 feet, noise levels could reach as high as 88 dB(A) L_{max} during peak construction activity at site boundaries. Such levels could create temporary annoyance; however, it should be noted that peak noise levels would occur only sporadically since not all equipment would be operating at all times. Also, most construction activity would actually take place at further distances from the receivers. ~~Assuming~~ Based on construction would occur in increments of approximately 10 acres, hourly noise levels at the edge of construction would be at or below 75 dB(A) L_{eq}, and, therefore, impacts would be **less than significant**.

3.3.2 Off-site

In addition to on-site construction, off-site construction would also be required for roadway and utility line improvements and potentially activities associated with the expansion of Miller Station. Roadway and utility line improvements along West Lilac Road, Gopher Canyon Road/I-15 Northbound Ramps, Gopher Canyon Road/I-15 Southbound Ramps, Lilac Hills Ranch Road between Phases 3 and Phase 4 boundaries, Mountain Ridge Road to Circle R Drive, Covey Lane to West Lilac Road, and Street "B" to Rodriguez Road; see Figure 7. Unlike construction associated with on-site development, utility pipeline or roadway construction is linear and usually extends up to 400 feet along a pipeline/roadway's alignment. Excavation and grading equipment used for pipeline and roadway ~~project~~projects would generate similar noise levels. Based on a construction area of approximately 50 feet by 400 feet, the average hourly roadway construction noise levels would be approximately 75 dB(A) L_{eq} at the edge of the roadways and 72 dB(A) L_{eq} or lower at 50 feet from the edge of roadway construction. The nearest occupied residences to off-site construction are located adjacent to several identified roadway segments. During maximum effort with several pieces of equipment operating at the same time in close proximity or during pavement removal, maximum noise levels of 76-80 dB(A) L_{max} may be experienced at local residences; however, these would last for a few seconds at any specific location. Noise levels on this order would not exceed the County's construction noise levels limits and impacts would be **less than significant**.

Improvements to Miller Station would generate noise levels from grading and construction activities. However, the construction activity associated with expanding an ~~operation~~operating fire station would be less intense than activity associated with typical construction anticipated on-site as there would be fewer pieces of equipment operating simultaneously. It is projected that ~~assumed~~ the average maximum hourly noise level would be approximately 81 dB(A) L_{eq} at a distance of 50 feet from the center of the construction activity.

The nearest existing occupied residence that would remain after the construction of Phase 1 is located directly across West Lilac Road. ~~Assuming~~ As the expansion would not move the station nearer to West Lilac Road, the near point of construction would be 150 feet from the nearest property line. ~~Assuming~~ Based on an acoustically hard site due to the driveway and roadway, at this distance, construction noise would attenuate to 71 dB(A) or less. Therefore, the expansion of Miller Station would not exceed the County's construction noise levels limits at an existing residence and impacts would be **less than significant**.

Depending on the timing of the expansion, construction could potentially occur adjacent to future residences. The existing structure is approximately 70 feet from the nearest property line; thus, the center of construction would likely be as near as 50 feet from future residential property lines and noise levels would be on the order of 81 dB(A) L_{eq} at the property line. If these properties are occupied, the expansion of the fire station would exceed the County's

construction noise levels limits and impacts would be **significant**. Therefore, mitigation measures have been identified that would be required if the properties adjacent to the fire station are occupied at the time of expansion.

Project construction would also result in a short-term increase in off-site traffic on the local area's roadway network, but this increase would not be sufficient to increase traffic noise levels a substantial amount. It is expected that up to 100 material delivery-truck trips and 260 employee commute trips would occur during the periods of maximum construction activity. Construction-related traffic would be distributed over the local and regional roadway network and would access the site primarily from I-15, Old Highway 395, and West Lilac Road.

Typically, traffic volumes must double to create an increase in perceptible (3 dB(A)) traffic noise (Caltrans 2011). The addition of construction-related trips to the roadway network would result in a maximum daily noise increase of 1 dB(A) CNEL and 2 dB(A) L_{eq} during the existing peak hour. Therefore, construction traffic would not result in a 3 dB(A) increase in the daily or peak hour traffic noise levels. Furthermore, project construction traffic is not anticipated to result in changes to LOS operations on the affected roadways. Therefore, the additional construction-related traffic would have a **less than significant** temporary increase in overall traffic noise levels.

3.3.3 Rock Crushing

Rock crushing may also occur on-site. A rock crusher generates higher noise levels than typical construction equipment as noise is generated by the breaking of rocks as well as the diesel engine operating the crusher. However, because it does not move and the material stockpiles can be located in close proximity, the work area is easier to define for a rock crushing operation. Rock crushing would typically include the use of a dozer and a loader for loading the rock crusher. The combined noise level from all these pieces of equipment would be on the order of 92 dB(A) L_{eq} at 50 feet and 95 dB(A) L_{max} at 50 feet. No potential rock crushing locations have been identified as the location would typically be chosen based on distance to material and accessibility of haul trucks. Based on a conservative attenuation rate of 6 dB(A) per doubling of distance, noise levels from rock crushing activities would attenuate to 75 dB(A) L_{eq} at approximately 350 feet, which would comply with the County's noise level limit for construction noise. However, if rock crushing occurs over longer periods the County could impose stricter limits, such as 60 dB(A) CNEL, which would require a separation of approximately 2,000 feet between the rock crushing activities and the nearest property line. As no locations for rock crushing have been identified, impacts are considered **potentially significant**. Mitigation measures have been included that would provide adequate setbacks to limit rock crushing noise levels at surrounding property lines and for on-site property lines if necessary to comply with County standards.

While construction noise levels would be temporary in nature at any individual construction site and no construction work would be performed during hours prohibited by the County Noise Ordinance, there is a potential that construction could exceed County noise level standards for construction activities at NAP properties. Additionally, as no specific locations have been chosen for rock crushing activities, rock crushing may exceed the County's Noise Ordinance. Therefore, this impact would be **significant.**

3.3.4 Design Considerations and Temporary Mitigation Measures

As construction activities have the potential to generate sporadic short-term noise levels during peak construction activity in excess of 75 dB(A) L_{eq} at future residential properties~~.~~ ~~The~~, the following design considerations will be included in the project design.

3.3.4.1 Design Considerations

DC-2: All construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation.

DC-3: Whenever feasible, electrical power shall be used to run air compressors and similar power tools.

DC-4: Equipment staging areas should be located as far as feasible from occupied residences or schools.

DC-5: For all construction activity on the project site, noise attenuation techniques ~~should~~shall be employed as needed to ensure that noise ~~remains~~levels remain below 75 dB(A) L_{eq} at future and existing residences. Such techniques may include, but are not limited to, the use of sound blankets on noise-generating equipment and the construction of temporary sound barriers adjacent to construction sites, between affected uses.

3.3.4.2 Mitigation Measures

As identified in the preceding analysis, construction-related noise impacts are considered significant; therefore, mitigation would be required for construction activities in proximity to NAP properties, potential construction activities associated with the expansion of Miller Station, and rock crushing.

MM N-8 Construction shall not be allowed to occur along more than one property line of any single existing on-site property that is identified as NAP on the implementing map.

Implementation: Project applicant(s) and primary contractor(s) of all project phases involving on-site properties identified as NAP on the implementing map.

Timing: During project-related construction activities.

Enforcement: County

MM N-9 If residential properties adjacent to the Miller Station property are occupied, a temporary 12-foot-high noise barrier shall be erected along the eastern and western property lines of Miller Station and ~~will~~shall be of sufficient length to block the line of sight from the adjacent properties to the construction activities. The noise barrier shall be constructed of material with a minimum weight of 2 pounds per square foot with no gaps or perforations. Noise barriers may be constructed of, but are not limited to, 5/8-inch plywood, 5/8-inch oriented strand board, or hay bales.

Implementation: Project applicant(s) and primary contractor(s) of the expansion of Miller Station.

Timing: Prior to and during project-related construction activities.

Enforcement: County

MM N-10 All rock crushing activities shall be located a minimum distance of 350 feet from the nearest property line where an occupied structure is located and shall comply with County noise standards pursuant to the County Noise Ordinance, Section 36.409. The 350-foot setback distance may be reduced if a noise study is conducted for rock processing activities and such ~~activities~~ noise levels are within acceptable County limits at modified distances determined by the noise study.

Implementation: Project applicant(s) and primary contractor(s) of all project phases involving rock crushing.

Timing: Prior to and during project-related rock crushing activities.

Enforcement: County

3.3.5 Summary

MM N-8 through MM N-10 would ensure that construction-related noise levels associated with the project would comply with County noise standards. Therefore, with ~~consideration~~implementation of design considerations and mitigation measures, construction noise impacts **would be less than significant.**

3.4 Potential Impulsive Noise Impacts

3.4.1 Potential Impulsive Noise Impacts without Mitigation

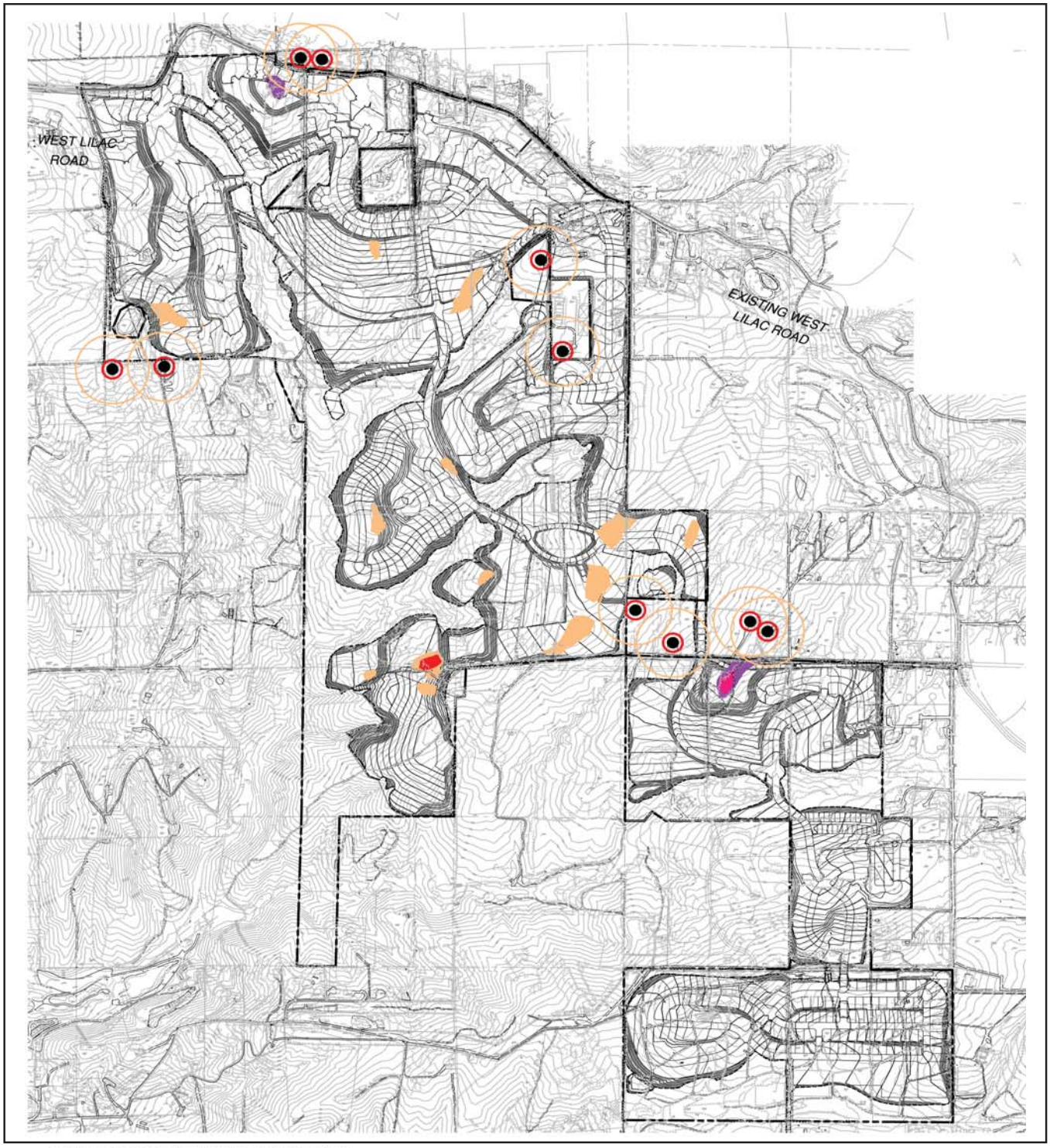
Impulsive noise sources associated with construction activities generated by project implementation could include rock drilling, blasting, and pile driving. No operational impulsive noise sources are proposed as part of the proposed project.

Blasting involves drilling bore holes and placing small amounts of explosives in each hole. By limiting the amount of explosives in each hole the blasting contractor can limit the fraction of the total energy released at any single time, which can limit noise and vibration levels. Rock drilling generates impulsive noise from the striking of the hammer with the anvil within the drill body, which drive the drill bit into the rock. Rock drilling generates noise levels of approximately 85 dB(A) L_{max} at 50 feet. Giving the load factor, this would equate to 78 dB(A) L_{eq} at 50 feet.

When explosive charges detonate in rock, almost all of the available energy from the explosion is used in breaking and displacing the rock mass. However, some blast energy escapes into the atmosphere as a sequence of airborne sound waves, a phenomenon known as “air blast over-pressure.” These sound waves are very low frequency, below the audible range. Very high blast over-pressure levels can rattle or in some cases break windows. However, air-blast over pressure rarely reaches levels that could cause building damage with modern blasting practices. Conceptual blasting locations are shown in Figure 8. Exact blast charge weights and locations are not known at this time, thus air-blast pressures cannot be predicted. Therefore, since it is feasible that some damage to nearby structure may occur, impacts associated with blasting is **significant.**

The construction of the larger buildings may require pile driving during foundation construction that could produce impulsive noise. ~~For purposes of analysis, it is assumed no more than~~ Based on the type of development, it is estimated that only one pile driver would be active on any single construction site or within 500 feet of another active pile driver if multiple building sites were active at once. A single impact pile driver typically produces maximum noise levels of 95 dB(A) L_{max} at a distance of 50 feet (FTA 2006). ~~Assuming~~ Using a conservative hard site condition, a single unshielded pile driver could exceed the County’s

Map Source: Landmark Consulting



POSSIBLE BLASTING IN DEEPER CUT AREAS

BLASTING DEEPER THAN 50'

BLASTING 30' TO 40'

POSSIBLE BLASTING IN SHALLOW AREAS WHERE ROCKS EXPOSED

BLASTING 20' TO 30'

BLASTING 10' TO 20'

300' RADIUS FROM CENTER OF STRUCTURE
(Blasting with special precautions)

80' RADIUS FROM CENTER OF STRUCTURE
(Avoid blasting if possible)

CENTER OF STRUCTURE

FIGURE 8

Conceptual Blasting Locations

RECON

M:\JOBS4\6153\nos\graphics\fig8.ai 03/08/13

impulsive noise level threshold within 1,000 feet. However, a pile driver does not generate maximum impulsive noise levels continuously, rather maximum impulsive noise levels are generated for short periods during peak power buildup and the pile strike. This cyclical pattern is called the equipment usage factor. Based on the FHWA Road Construction Noise Model, a pile driver has a usage factor of 20 percent (FHWA 2008). Thus, while the maximum noise levels from a pile driver could exceed the County's maximum noise level threshold within 1,000 feet of active pile driving, as pile driving would only generate maximum noise levels 20 percent of an hour, ~~and~~ maximum noise levels would not exceed the County impulsive threshold for 25 percent or more of an hour. Based on duration and distances, impulsive noise levels are anticipated to be below the County's 82 dB(A) threshold. No impacts are anticipated and no mitigation measures are required.

3.4.2 Design Considerations and Mitigation Measures

MM N-11: Prior to approval of the grading permit for any implementing tentative map, the project applicant or the designated contractor shall have a blast-drilling and monitoring plan prepared with an estimate of noise and vibration levels of each blast at NSLU within 1,000 feet of each blast. Where potential exceedance of the County Noise Ordinance are identified, the blast-drilling and monitoring plan shall identify mitigation measures shown to be effective in reducing noise and vibration levels (e.g., altering orientation of blast progression, increased delay between charge detonations, presplitting), to be implemented to comply with the noise level limits of County Noise Ordinance Sections 36.409 and 36.410 and the vibration level limits of 1.0 in/sec peak particle velocity (PPV), and such measures shall be implemented by the applicant or its designee prior to the issuance of the grading permit. Additionally, all project phases involving blasting shall conform to the following requirements:

- All blasting shall be performed by a blast contractor and blasting personnel licensed to operate in the County.
- Each blast shall be monitored and recorded with an air blast over-pressure monitor and groundborne vibration accelerometer approved by the County that is located outside the closest residence to the blast.
- A blasting plan, including estimates of the drill noise levels, maximum noise levels (L_{max}), air blast over-pressure levels, and groundborne vibration levels at each residence within 1,000 feet of the blasting location shall be submitted to the County for review prior to the first blast. Blasting shall not commence until the County has approved the blast plan.

- Blasting shall not exceed 0.1 inches per second (in/sec) peak particle velocity (PPV) at the nearest occupied residence in accordance with County of San Diego Noise Guidelines Section 4.3.

Implementation: Project applicant(s) and primary contractor(s) of all project phases involving blasting.

Timing: Prior to and during project-related blasting activities.

Enforcement: County

3.4.3 Summary

Implementation of MM N-11 would provide a mechanism to verify that impulsive noise sources associated with the project would be reduced to a less-than-significant level at the nearest NSLU.

3.5 Cumulative or Combined Noise Impacts

3.5.1 Potential Combined Noise Impacts

Project implementation would result in significant noise impacts associated with the combination of construction activities; increases in traffic noise levels at existing and potential future noise sensitive receptors near some roadways where the project is forecast to increase traffic volumes; and the creation of noise-sensitive land uses in areas where traffic noise levels are forecast to exceed County noise standards.

Noise is a localized occurrence and attenuates rapidly with distance. Therefore, only future development projects in the direct vicinity of the project site could add to construction or stationary source noise generated by the project and result in a cumulative noise impact.

The areas surrounding the project site are developed residential areas and thus generate a similar level of noise as the residential portion of the project and a lower level of stationary source noise than the commercial portion of the proposed project. It is unlikely that project implementation would create cumulative impacts due to stationary source noise because the surrounding developments and much of the development proposed at the boundaries of the project site is residential development or for commercial development located at such a distance as to not contribute to cumulative nose levels. In addition, MM N-3 through MM N-7 would ensure that stationary source noise associated with the project would conform to County standards. Therefore, it is concluded that this cumulative impact would be less than significant.

3.5.2 Design Considerations and Mitigation Measures

Measures MM N-3 through N-11 are applicable and would reduce project level and cumulative level impacts to less than significant levels from airborne noise sources.

4.0 Groundborne Vibration and Noise Impacts

4.1 Guidelines for the Determination of Significance

Project implementation could expose the uses listed in Tables 17 and 18 to groundborne vibration and noise levels equal to or in excess of the levels shown.

TABLE 17
GUIDELINES FOR DETERMINING THE SIGNIFICANCE OF GROUNDBORNE VIBRATION AND NOISE IMPACTS

Land Use Category	Groundborne Vibration Impact Levels (inches/sec RMS)		Groundborne Noise Impact Levels (dB re 20 micro Pascals)	
	Frequent Events[1]	Occasional or Infrequent Events[2]	Frequent Events[1]	Occasional or Infrequent Events[2]
Category 1: Buildings where low ambient vibration is essential for interior operations (research & manufacturing facilities with special vibration constraints)[6]	0.0018[3]	0.0018[3]	Not applicable[4,5]	Not applicable[4,5]
Category 2: Residences and buildings where people normally sleep (hotels, hospitals, residences, & other sleeping facilities)[6]	0.0040	0.010	35 dB(A)	43 dB(A)
Category 3: Institutional land uses with primarily daytime use (schools, churches, libraries, other institutions, & quiet offices)[6]	0.0056	0.014	40 dB(A)	48 dB(A)

RMS = root mean square; re = relative

[1] "Frequent Events" is defined as more than 70 vibration events per day. Most rapid transit projects fall into this category.

[2] "Infrequent Events" is defined as fewer than 70 vibration events per day. This category includes most commuter rail systems.

[3] This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration-sensitive manufacturing or research will require detailed evaluation to define acceptable vibration levels. Ensuring lower vibration levels in a building often requires special design of the HVAC systems and stiffened floors.

[4] Vibration-sensitive equipment is not sensitive to groundborne noise.

[5] There are some buildings, such as concert halls, TV and recording studios, and theaters that can be very sensitive to vibration and noise but do not fit into any of the three categories. Table 14 gives criteria for acceptable levels of groundborne vibration and noise for these various types of special uses.

[6] For Categories 2 and 3 with occupied facilities, isolated events such as blasting are significant when the peak particle velocity (PPV) exceeds 1 inch per second. Nontransportation vibration sources such as impact pile drivers or hydraulic breakers are significant when their PPV exceeds 0.1 inch per second. More specific criteria for structures and potential annoyance were developed by Caltrans (2004) and will be used to evaluate these continuous or transient sources in the County of San Diego.

SOURCE: FTA 2006.

TABLE 18
GUIDELINES FOR DETERMINING THE SIGNIFICANCE OF GROUNDBORNE VIBRATION AND NOISE IMPACTS FOR SPECIAL BUILDINGS

Type of Building or Room	Groundborne Vibration Impact Levels (inches/sec rms)		Groundborne Noise Impact Levels (dB re 20 micro Pascals)	
	Frequent Events[1]	Occasional or Infrequent Events[2]	Frequent Events[1]	Occasional or Infrequent Events[2]
Concert Halls, TV Studios, and Recording Studios	0.0018	0.0018	25 dB(A)	25 dB(A)
Auditoriums	0.0040	0.010	30 dB(A)	38 dB(A)
Theaters	0.0040	0.010	35 dB(A)	43 dB(A)

RMS = root mean square; re = relative
[1] "Frequent Events" is defined as more than 70 vibration events per day. Most rapid transit projects fall into this category.
[2] "Infrequent Events" is defined as fewer than 70 vibration events per day. This category includes most commuter rail systems.
SOURCE: FTA 2006.

As stated in note 6 of Table 17, Caltrans criteria shall be used for piles drivers and transient sources such as those associated with project construction. Therefore, for the purposes of this vibration analysis, impacts from pile driving would occur if vibration levels exceed 0.1 in/sec PPV and impacts from general construction would occur if vibration levels exceed 0.~~04~~004 in/sec ~~PPV (Caltrans 2004~~RMS (County of San Diego 2009b).

4.2 Potential Groundborne Vibration and Noise Impacts

4.2.1 Potential Groundborne Vibration and Noise Impacts without Mitigation

4.2.1.1 Operations

No operational components of the project include significant groundborne noise or vibration sources and no significant vibrations sources currently exist, or are planned, in the project area. Thus, no significant groundborne noise or vibration impacts would occur with the operation of the proposed project.

4.2.1.2 Construction

Construction activities produce varying degrees of ground vibration, depending on the equipment and methods employed. While ground vibrations from typical construction activities very rarely reach levels high enough to cause damage to structures, special consideration must be made when sensitive or historic land uses are near the construction

site. (Caltrans 2013b). The construction activities that typically generate the highest levels of vibration are blasting and impact pile driving.

As discussed above, on-site construction equipment that would cause the most noise and vibration would be associated with site grading and driving of piles for foundations. According to the FTA, vibration levels associated with the use of bulldozers range from approximately 0.003 to 0.089 in/sec PPV and 58 to 87 vibration decibels (VdB referenced to 1 microinch per second and based on the root mean square [RMS] velocity amplitude) at 25 feet, as shown in Table 19. Using FTA's recommended procedure for applying a propagation adjustment to these reference levels, vibration levels would exceed County-recommended Caltrans thresholds (0.04 PPV004 in/sec RMS) within 45150 feet of large bulldozers and 40135 feet of loaded trucks. but would be below the County's threshold for a small bulldozer as close as 15 feet from the equipment. For pile driving, vibration levels would exceed County-recommended Caltrans thresholds (0.1 PPV) within 90 feet of impact pile driving. The nearest existing NSLU to these activities would be a minimumNSLUs, consisting of 100 feet across property lines from potential construction activities. However,off-site residences (including NAP properties), future medical facilities of later phases, and future residences of later phases may be closer than 100located within 90 feet of pile driving and within 150 feet; therefore of areas where large bulldozers may be used for grading or construction. Thus, vibration levels may exceed 0.040004 in/sec RMS or 0.1 in/sec PPV from general grading and pile driving construction activities on- and off-site at the nearest residenceNSLUs. This impact would be **significant. .**

TABLE 19
TYPICAL CONSTRUCTION- EQUIPMENT VIBRATION LEVELS

Equipment	PPV at 25 feet (in/sec)[1]	Approximate Noise Level at 25 feet[2]
Large Bulldozer	0.089	87
Trucks	0.076	86
Impact Pile Driver	0.650	Not Available
Small Bulldozer	0.003	58

[1] Where PPV is the peak particle velocity.
[2] Where noise level is the velocity level in decibels (VdB) referenced to 1 microinch/second and based on the root mean square (RMS) velocity amplitude.
SOURCE: FTA 2006, Caltrans 20042013b.

4.2.1.3 Blasting

Due to the geologic character of the project site, explosive blasting and/or on-site rock breaking is anticipated during site preparation activities for the project. Thus, significant vibrations or groundborne noise impacts may be associated with construction of the

proposed project. At the current stage of the project design, a blasting study has not been completed and no specific blasting timelines, blast numbers, or locations are proposed or available.

When explosive charges detonate in rock, almost all of the available energy from the explosion is used in breaking and displacing the rock mass. However, a small portion of the energy is released in the form of vibration waves that radiate away from the charge location. The strength, or 'amplitude,' of the waves reduces as the distance from the charge increases. The rate of amplitude decay depends on local geological conditions but can be estimated with a reasonable degree of consistency, which allows regulatory agencies to control blasting operations by means of relationships between distance and explosive quantity.

The explosive charges used in mining and mass grading are typically wholly contained in the ground. The nearest residential receptor to the blasting activities, a single-family residence within the overall project site boundaries, is approximately 500 feet from the nearest potential blasting site. At this distance, it is unlikely that blasting vibration or materials handling would generate substantial groundborne vibration or noise impacts. However, as the necessary geotechnical data or blasting and materials handling plans are not available, a noise analysis assessing the proposed blasting and materials handling associated with the project would be required prior to issuance of County grading permits~~.~~ and, therefore, for purposes of this analysis, **impacts are considered potentially significant**.

4.2.2 Design Considerations and Mitigation Measures

To reduce impacts associated with groundborne vibration generated by project-related construction activities, the project applicant(s) of all project phases shall implement MM N-11 and the following measure:

M N-12: ~~Restrict heavy-equipment operations in areas within 100 feet of inhabited residential units.~~Prior to beginning construction of any project component within 150 feet of an existing or future occupied residence or medical facility, a vibration monitoring plan shall be submitted to the County Noise Control Officer for review and approval. At a minimum the vibration monitoring plan shall require data be sent to the County Noise Control Officer or designee on a weekly basis or more frequently as determined by the Noise Control Officer. The data shall include vibration level measurements taken during the previous work period. In the event that the County Noise Control Officer determines there is reasonable probability that future measured vibration levels would exceed allowable limits, the County Noise Control Officer or designee shall take the steps necessary to ensure that future vibration levels do not exceed such limits, including, but not limited to suspending those further construction activities that would result in excessive

vibration levels until either alternative equipment or alternative construction procedures can be used that generate vibration levels that do not exceed 0.004 in/sec RMS at the nearest residential structure. Construction activities not associated with vibration generation could continue.

The vibration monitoring plan shall be prepared and administered by a County-approved noise consultant. In addition to the data described above, the vibration monitoring plan shall at a minimum also include the location of vibration monitors, the vibration instrumentation utilized, a data acquisition and retention plan, and exceedance notification and reporting procedures. A description of these plan components is provided below.

Location of Vibration Monitors: The vibration monitoring plan shall include a scaled plan indicating monitoring locations, including the location of measurements to be taken at construction site boundaries and at nearby residential properties.

Vibration Instrumentation: Vibration monitors shall be capable of measuring maximum unweighted RMS and PPV levels triaxially (in three directions) over a frequency range of 1 to 100 hertz (Hz). The vibration monitor will be set to automatically record daily events during working hours and to record peak triaxial PPV values in 5-minute interval histogram plots. The method of coupling the geophones to the ground will be described and included in the report. The vibration monitors shall be calibrated within one year of the measurement, and a certified laboratory conformance report will be included in the report.

Data Acquisition: The information to be provided in the data repots shall include at a minimum daily histogram plots of PPV versus time of day for three triaxial directions and maximum peak vector sum PPV and maximum frequency for each direction. The reports will also identify the construction equipment operation during the monitoring period and their locations and distances to all vibration measurement locations.

Exceedance Notification and Reporting Procedures: A description of the notification of exceedance and reporting procedures will be included and the follow-up procedures taken to reduce vibration levels to below the allowable limits.

Implementation: Project applicant(s) and primary contractor(s) of all project phases involving blasting.

Timing: Prior to and during construction activities.

Enforcement: County

4.2.2.1 Summary

Implementation of measures MM N-11 and N-12 would reduce groundborne vibration impacts associated with blasting and heavy construction equipment to a **less than significant** level at the nearest NSLU.

5.0 Summary of Project Impacts, Design Considerations, Mitigation, and Conclusion

The proceeding analysis provides an evaluation of compatibility of the proposed land uses with the existing and future noise environment of the project site, potential noise and vibration impacts due to construction of the project, and the direct and indirect noise generated by operation of the project.

5.1 Land Use Compatibility

The majority of the residential land uses planned for the project site would be compatible with the existing and future noise environment, with the exception of any proposed NSLU located within 100 feet of West Lilac Road and major internal roadways. None of the proposed noise sensitive land uses would be adversely affected by aircraft operations. The majority of potential noise effects are either less than significant or would be mitigated to **less than significant** levels by the measures identified in this report. However, mitigation to reduce significant impacts to certain existing NSLUs located on Covey Lane and along the future Lilac Hills Ranch Road is infeasible and, therefore, impacts to these identified uses would remain **significant and unavoidable**.

5.1.1 Mitigation Measures

The following traffic noise mitigation measures are required to minimize noise impacts to receptors and reduce identified impacts to future on-site NSLU to less than significant:

MM N-1: Prior to approval of the master tentative map, or subsequent implementing tentative map, as appropriate, the project applicant shall dedicate "noise protection easements" on the master tentative map and each subsequent implementing tentative map for all lots located within the noise easement contour, as shown on Figures 6a and 6b.

- The noise protection easements shall contain a restriction requiring compliance with the standards for the subject land use as stated in Tables N-1 and N-2 of the County General Plan Noise Element (see Tables 7 and 8 of this report). ~~Thus, the~~Potential feasible measures to achieve compliance include, but are not limited to, altering lot configurations and building locations, varying grading contours, and constructing solid barriers (i.e., sound walls).

- The noise easement shall contain the following language.

- For single-family lots: The noise level at exterior use areas associated with single-family detached dwelling units, shall be measured at an outdoor living area that adjoins and is on the same lot as the dwelling, and that contains at least the following ~~minimum net~~ lot area:
  - for lots less than 4,000 square feet in area, the exterior area shall include 400 square feet,
  - for lots between 4,000 square feet to 10 acres in area, the exterior area shall include 10 percent of the lot area;
  - for lots over 10 acres in area, the exterior area shall include 1 acre.

  Noise levels with the single-family residential exterior use areas shall not exceed 60 CNEL.

- For single-family properties fronting West Lilac Road, west of Main Street and fronting Main Street, between West Lilac Road and C Street, a site-specific design for building placement and inclusion of wing walls may be required to reduce noise levels at exterior NSLU areas.

- For residential lots other than single-family lots: The noise level at exterior use area is defined as areas which are provided for private or group usable open space purposes (as defined in Table N-2 of the County General Plan Noise Element).

  Noise levels ~~with~~within the exterior use areas for all other residential lots other than single-family lots shall not exceed 65 CNEL.

- For non-residential noise sensitive land uses, the exterior area is the public use provided.

  The exterior noise level standard for non-residential noise sensitive land uses shall be 65 CNEL ~~and the interior noise level standard shall be 50 dBA L_{eq} (one hour average).~~.

- Exterior noise standards do not apply for land uses where no exterior use area is proposed or necessary.

- For all other land uses the exterior noise level standard shall not exceed the limit defined as "Acceptable" in Table N-1 of the County General Plan Noise Element or the equivalent one-hour noise standard.

- The lots with the noise protection easements shall be identified on all final maps.

Implementation: Project applicant(s) and primary contractor(s) of all project phases.

Timing: Prior to issuance of building permits for lots within the noise easements.

Enforcement: County

MM N-2: ~~Where residences are~~Prior to issuance of any building permit for properties located ~~in areas forecast to exceed 60 CNEL without abatement~~within a noise protection easement (see noise report Figures 6a and 6b), the ~~Building Permit~~building permit applicant shall demonstrate that interior noise levels due to exterior noise sources would not exceed the applicable County noise ordinance standard shown in Table ~~7~~8 of this report for the subject land use~~.~~ (see Figures 6a and 6b). In these cases, it is anticipated that the typical method of compliance would be to provide ~~the houses with~~sound walls where appropriate, structure setbacks, acoustically rated windows and doors, or air conditioning or equivalent forced air circulation to allow occupancy with closed windows, which, for most construction, would provide sufficient exterior-to-interior noise reduction.

- An acoustical study shall be prepared to demonstrate and verify that interior noise levels are below 45 CNEL within all residential structures, and below 50 CNEL within schools, churches, medical/dental facilities (i.e., hospitals, laboratories, nursing homes) child care facilities, government facilities, and commercial uses (office and retail).

Implementation: Project applicant(s) and primary contractor(s) of all project phases~~.~~

Timing: Prior to design and implementation of development of on-site residential areas~~.~~

Enforcement: County

5.1.2 Summary

Implementation of MM N-1 and N-2 would ensure that traffic noise impacts associated with area traffic would be reduced to a **less than significant** level at affected ~~NSLU~~future NSLUs located within the project site. However, identified significant impacts to existing NSLUs located on Covey Lane and along the future Lilac Hills Ranch Road would remain **significant and unavoidable.**

5.2 Airborne Noise

5.2.1 Operations

Stationary noise sources associated with the project would include mechanical equipment associated with the residential and commercial developments, emergency generators,

parking lots, delivery activities associated with the commercial land uses, and recreational and educational activities. At this stage of project development, even with design considerations, the data necessary to fully evaluate all the potential on-site sources are unavailable; therefore, mitigation measures, including applicable performance standards, have been included that require the developer to prepare an applicable acoustical study studies to specifically identify potential impacts and mitigate them as necessary.

5.2.2.1 Design Considerations

DC-1: All emergency generators within 500 feet of a property line shall be located within enclosures, behind barriers, or oriented within the site design to eliminate the line of site between sensitive receptors and generators and noise testing will be conducted to verify generator noise levels comply with County standards, Section 36.404, at the nearest property line prior to full operation.

5.2.2.2 Mitigation Measures

The following stationary source noise mitigation measures are required to minimize noise impacts to receptors and reduce the identified impacts to less than significant:

MM N-3: **Summary:** Implement best engineering practices and consider the placement of noise generating equipment and shielding when installing stationary noise sources associated with HVAC systems and standby generators.

The following stationary source noise mitigation measure is required to minimize noise impacts to receptors:

- Prior to the issuance of a any building permit, for stationary noise-generating equipment such as HVAC systems or standby generators, the applicant, or its designee, will shall prepare an acoustical study(s) of the proposed mechanical equipment including generators, which will stationary noise sources associated with HVAC systems and standby generators for submittal to the County for review and approval. The acoustical study shall identify all noise-generating equipment, predict and calculate predicted noise levels at the applicable property lines from all identified equipment, and recommended. Where predicted noise levels would exceed those levels established by County Noise Ordinance Section 36.404, the acoustical study, shall identify mitigation to be implemented measures shown to be effective in reducing noise levels (e.g., enclosures, barriers, site orientation), as necessary, to be implemented to comply with the property line noise level limits established by County Noise Ordinance Section 36.404, and such mitigation measures shall be implemented by the applicant or its designee prior to issuance of any building permit.

Implementation: Project applicant(s) and primary contractor(s) of all project phases

Timing: Prior to design and implementation of on-site stationary noise sources, such as HVAC systems and standby generators

Enforcement: County

MM N-4: ~~Implement best~~**Summary:** Best engineering practices ~~and consider~~shall be used in the placement of noise-generating equipment when developing site plans for commercial land uses containing loading docks, delivery areas, and parking lots such that noise levels at the property line comply with County standards. Development plans shall be accompanied by an acoustical analysis demonstrating compliance with County standards for approval prior to issuance of building permits.

The following stationary source noise mitigation measure is required to minimize noise impacts to receptors~~:~~ and reduce the identified impacts to less than significant:

- Prior to the issuance of ~~a~~any building permit for commercial land uses containing loading docks, delivery areas, and/or parking lots, the applicant, or its designee, ~~will~~shall prepare an acoustical study(s) of the proposed commercial land use site plans~~, which will~~ for submittal to the County for review and approval. The acoustical study shall identify all noise-generating ~~areas~~ and associated equipment~~, predict~~ and shall calculate predicted noise levels at the applicable property lines from all identified ~~areas, and recommended~~sources. Where predicted noise levels would exceed those established by County Noise ordinance Section 36.404, the acoustical study shall identify mitigation ~~to be implemented~~ measures shown to be effective in reducing noise levels (e.g., enclosures, barriers, site orientation, reduction of parking stalls), to be implemented as necessary, to comply with the property line noise level limits established by County Noise Ordinance Section 36.404, and such measures shall be implemented by the applicant or its designee prior to the issuance of a building permit.

Implementation: Project applicant(s) and primary contractor(s) of all project phases involving commercial uses.

Timing: Prior to design and implementation of development of commercial areas.

Enforcement: County

MM N-5: **Summary:** Best engineering practices shall be used and considered in the placement and design of dog parks, such that noise levels at the property line comply with County standards for the applicable zone. Development plans shall be accompanied by an acoustical analysis demonstrating compliance with County standards for approval prior to issuance of building permits.

The following stationary source noise mitigation measure is required to minimize noise impacts to receptors~~:~~ and reduce the identified impact to less than significant:

- Prior to the issuance of ~~a~~any building permit~~,~~ associated with the dog parks, the applicant, or its designee, ~~will~~shall prepare an acoustical study(s) of the proposed dog park~~s, which will predict~~ for submittal to the County for review and approval. The acoustical study shall calculate predicted noise levels at potentially affected property lines from all potential source~~s, and recommended~~. Where predicted noise levels would exceed those established by County Noise Ordinance Section 36.404, the acoustical study shall identify mitigation ~~to be implemented~~measures shown to be effective in reducing noise levels (e.g., barriers, site orientation/location, etc.), to be implemented, as necessary, to comply with the property line noise level limits established by County Noise Ordinance Section 36.404, and such measures shall be implemented by the applicant or its designee prior to the issuance of any building permit.

Implementation: Project applicant(s) and primary contractor(s) of all project phases.

Timing: Prior to issuance of building permits.

Enforcement: County

MM N-6: ~~Implement best~~**Summary:** Best engineering practices shall be used and ~~consider~~considered in the placement of noise-generating equipment when developing site plans for the WRF such that noise levels at the property line comply with County standards. Development plans shall be accompanied by an acoustical analysis demonstrating compliance with County standards for approval prior to issuance of building permits.

The following stationary source noise mitigation measure is required to minimize noise impacts to receptors~~:~~ and reduce the identified impact to less than significant:

- Prior to the issuance of a building permit for the Water Reclamation Facility, the applicant, or its designee, ~~will~~ shall prepare an acoustical study(s) of the proposed WRF~~, which will~~ for submittal to the County for review and approval. The acoustical study shall identify all noise-generating sources and associated equipment~~, predict~~ and calculate predicted noise levels at potentially affected property lines from all identified sources~~, and recommended~~. Where predicted noise levels would exceed those established by County Noise Ordinance Section 36.404, the acoustical study shall identify mitigation ~~to be implemented~~ measures shown to be effective in reducing noise levels (e.g., enclosures, barriers, site orientation, etc.), to be implemented as necessary, to comply with the property line noise level limits established by County Noise Ordinance Section 36.404, and such measures shall be implemented by the applicant or its designee prior to issuance of a building permit.

Implementation: Project applicant(s) and primary contractor(s) of the WTRP

Timing: Prior to design and implementation of development of the WTRP

Enforcement: County

MM N-7: ~~Implement best~~**Summary:** Best engineering practices shall be used and ~~consider~~considered in the placement of noise-generating equipment when developing site plans for the recycling/green waste collection facility (RF) such that noise levels at the property line comply with County standards. Development plans shall be accompanied by an acoustical analysis demonstrating compliance with County standards for approval prior to issuance of building permits.

The following stationary source noise mitigation measure is required to minimize noise impacts to receptors and reduce the identified impact to less than significant:

- Prior to the issuance of a building permit for the Recycling Facility, the applicant, or its designee, ~~will~~shall prepare an acoustical study(s) of the proposed ~~RF, which will~~recycling/green waste collection facility for submittal to the County for review and approval. The acoustical study shall identify all noise-generating sources and associated equipment~~, predict~~ and calculate predicted noise levels at potentially affected property lines from all identified sources~~, and recommended~~. Where predicted noise levels would exceed those established by County Noise Ordinance Section 36.404, the acoustical study shall identify mitigation ~~to be implemented~~ measures shown to be effective in reducing noise levels (e.g., enclosures, barriers, site orientation, etc.), to be implemented as necessary, to comply with the property line noise level limits of County Noise Ordinance Section 36.404, and such measures shall be implemented by the applicant or its designee prior to the issuance of a building permit.

Implementation: Project applicant(s) and primary contractor(s) of the recycling/green waste collection facility.

Timing: Prior to design and implementation of development of the recycling/green waste collection facility.

Enforcement: County

5.2.2 Construction

As construction activities have the potential to generate sporadic short-term noise levels during peak construction activity in excess of 75 dB(A) L_{eq} at future residential properties, the following design considerations will be included in the project design.

5.2.2.1 Design Considerations

DC-2: All construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation.

DC-3: Whenever feasible, electrical power shall be used to run air compressors and similar power tools.

DC-4: Equipment staging areas ~~should~~shall be located as far as feasible from occupied residences or schools.

DC-5: For all construction activity on the project site, noise attenuation techniques ~~should~~shall be employed as needed to ensure that noise level remains below 75 dB(A) L_{eq} at future and existing residences. Such techniques may include, but are not limited to, the use of sound blankets on noise-generating equipment and the construction of temporary sound barriers adjacent to construction sites, between affected uses.

5.2.2.2 Mitigation Measures

As identified in Section 3.3.4, noise construction-related noise impacts are considered significant; therefore, mitigation would be required for construction activities in proximity to NAP properties, potential construction activities associated with the expansion of Miller Station, and rock crushing.

MM N-8: Construction shall not be allowed to occur along more than one property line of any single existing on-site property that is identified as NAP on the Implementing Map.

Implementation: Project applicant(s) and primary contractor(s) of all project phases involving on-site properties identified as NAP on the implementing map.

Timing: During project-related construction activities.

Enforcement: County

MM N-9: If residential properties adjacent to the Miller Station property are occupied, a temporary 12-foot-high noise barrier shall be erected along the eastern and western property lines of Miller Station and ~~will~~shall be of sufficient length to block the line of sight from the adjacent properties to the construction activities. The noise barrier shall be constructed of material with a minimum weight of 2 pounds per square foot with no gaps of perforations. Noise barriers may be

constructed of, but are not limited to, 5/8-inch plywood, 5/8-inch oriented strand board, or hay bales.

Implementation: Project applicant(s) and primary contractor(s) of the expansion of Miller Station.

Timing: During project-related construction activities.

Enforcement: County

MM N-10: All rock crushing activities shall be located a minimum distance of 350 feet from the nearest property line where an occupied structure is located and shall comply with County noise standards pursuant to County Code Noise Ordinance, Section 36.409. The 350-foot setback distance may be reduced if a noise study is conducted for rock processing activities and such ~~activities~~ noise levels are within acceptable County limits at modified distances determined by the noise study.

Implementation: Project applicant(s) and primary contractor(s) of all project phases involving rock crushing.

Timing: Prior to and during project-related rock crushing activities.

Enforcement: County

MM N-11: Prior to approval of the grading permit for any implementing tentative map, the project applicant or the designated contractor shall have a blast and monitoring plan prepared with a an estimate of noise and vibrations levels of each blast at NSLU within 1,000 feet of each blast. Where potential exceedances of the County Noise Ordinance are identified, the blast-drilling and monitoring plan shall identify mitigation measures shown to be effective in reducing noise and vibration levels (e.g., altering orientation of blast progression, increased delay between charge detonations, pre-splitting), to be implemented to comply with the noise level limits of County Noise Ordinance Sections 36.409 and 36.410, and the vibration level limits of 21.0 in/sec PPV, and such measures shall be implemented by the applicant or its designee prior to the issuance of the grading permit. Additionally, all project phases involving blasting shall conform to the following requirements:

- All blasting shall be performed by a blast contractor and blasting personnel licensed to operate in the County.
- Each blast shall be monitored and recorded with an air blast over-pressure monitor and groundborne vibration accelerometer approved by the County that is located outside the closest residence to the blast.

- A blasting plan, including estimates of the drill noise levels, air blast over-pressure level, and groundborne vibration levels at the residence closest to the blast, shall be submitted to the County for review prior to the first blast. Blasting shall not commence until the County has approved the blast plan.

- Blasting shall not exceed 0.1 inches per second (in/sec) PPV at the nearest occupied residence in accordance with County of San Diego Noise Guidelines Section 4.3.

Implementation: Project applicant(s) and primary contractor(s) of all project phases involving blasting.

Timing: Prior to and during project-related blasting activities.

Enforcement: County

5.2.3 Summary

Implementation of measures MM N-3 and N-11 would reduce project-generated airborne noise impacts associated with construction project operation to a less than significant level at affected NSLUs.

5.3 Vibration

To reduce impacts associated with groundborne vibration generated by project-related construction activities on- and off-site, the project applicant(s) of all project phases shall implement MM N-11 and the following measure:

~~**MM N-12:** No heavy equipment shall be operated within 100 feet of any inhabited on-site residence.~~

MM N-12: Prior to beginning construction of any project component within 150 feet of an existing or future occupied residence or medical facility, a vibration monitoring plan shall be submitted to the County Noise Control Officer for review and approval. At a minimum the vibration monitoring plan shall require data be sent to the County Noise Control Officer or designee on a weekly basis or more frequently as determined by the Noise Control Officer. The data shall include vibration level measurements taken during the previous work period. In the event that the County Noise Control Officer determines there is reasonable probability that future measured vibration levels would exceed allowable limits, the County Noise Control Officer or designee shall take those steps necessary to ensure that future vibration levels do not exceed such limits, including, but not limited to suspending those further construction activities that would result in

excessive vibration levels until either alternative equipment or alternative construction procedures can be used that generate vibration levels that do not exceed 0.004 in/sec RMS at the nearest residential structure. Construction activities not associated with vibration generation could continue.

The vibration monitoring plan shall be prepared and administered by a County-approved noise consultant. In addition to the data described above, the vibration monitoring plan shall at a minimum also include the location of vibration monitors, the vibration instrumentation utilized, a data acquisition and retention plan, and exceedance notification and reporting procedures. A description of these plan components is provided below.

Location of Vibration Monitors: The vibration monitoring plan shall include a scaled plan indicating monitoring locations, including the location of measurements to be taken at construction site boundaries and at nearby residential properties.

Vibration Instrumentation: Vibration monitors shall be capable of measuring maximum unweighted RMS and PPV levels triaxially (in three directions) over a frequency range of 1 to 100 Hz. The vibration monitor will be set to automatically record daily events during working hours and to record peak triaxial PPV values in 5-minute interval histogram plots. The method of coupling the geophones to the ground will be described and included in the report. The vibration monitors shall be calibrated within one year of the measurement, and a certified laboratory conformance report will be included in the report.

Data Acquisition: The information to be provided in the data repots shall include at a minimum daily histogram plots of PPV versus time of day for three triaxial directions and maximum peak vector sum PPV and maximum frequency for each direction. The reports will also identify the construction equipment operating during the monitoring period and their locations and distances to all vibration measurement locations.

Exceedance Notification and Reporting Procedures: A description of the notification of exceedance and reporting procedures will be included and the follow-up procedures taken to reduce vibration levels to below the allowable limits.

Implementation: Project applicant(s) and primary contractor(s) of all project phases.

Timing: Prior to and during construction activities.

Enforcement: County

5.4 Summary

Implementation of measures MM N-11 and MM N-12 would reduce groundborne vibration impacts associated with blasting and heavy construction equipment to a less than significant level at ~~the nearest NSLU~~NSLUs.

6.0 Certification

The following is a list of preparers, persons, and organizations involved with the noise assessment.

RECON Environmental, Inc.

- William Maddux, Senior Noise Specialist, County-approved Noise Consultant
- Jesse Fleming, Noise Specialist
- Stacey Higgins, Senior Production Specialist
- Chris Nixon, GIS Specialist

ATTACHMENTS

THIS PAGE IS INTENTIONALLY BLANK.

ATTACHMENT 1

References Cited

THIS PAGE IS INTENTIONALLY BLANK.

References Cited

AECOM

2011 Final Noise Impact Analysis Lamar County Park – Dog Run Project, San Diego County, California, December.

California Department of Transportation (Caltrans)

2011 Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects. May.

~~2004~~2013a Technical Noise Supplement to the Traffic Noise Analysis Protocol. September.

2013b Transportation- and Construction-~~Induced~~ Vibration Guidance Manual~~, June~~. September.

~~2009 Technical Noise Supplement. November.~~

Chen Ryan

~~2013~~2014 Traffic Impact Study – Lilac Hills Ranch Specific Plan Project.

Cummins Power Generation

2009 Sound Data for 1500DFLE Diesel Generator. Available at http://www.cummins power.com/www/common/templatehtml/technicaldocument/SoundDataSheets/na/msp-159.pdf Accessed: November 4, 2009.

EDAW

2006 Sound Measurement Data of Loading Dock Activities Collected on August 7 and 8, 2006 by Austin Kerr of EDAW.

Egan, M. David

1988 Architectural Acoustics. McGraw-Hill, Inc.

Federal Highway Administration

2011 Noise Barrier Design Handbook, available at: http://www.fhwa.dot.gov/environment/noise/noise_barriers/design_construction/design/design00.cfm

2008 Roadway Construction Noise Model. V1.1. Washington, DC.

Federal Transit Administration (FTA)

2006 Transit Noise and Vibration Impact Assessment. Washington, DC. May.

San Diego Association of Governments (SANDAG)

2012 *Traffic Forecasts 2020*, Interactive GIS Maps, available at http://pele.sandag.org/trfic.html.

San Diego, County of

2011 General Plan, Chapter 8, Noise Element. August 3.

2009a Noise Ordinance, Sections 36.404 and 36.410. Last amended by ordinance number 9962, January 9.

2009b Guidelines for Determining Significance and Report Format and Content Requirements, Noise. January 27.

U.S. Environmental Protection Agency (EPA)

1971 (December). Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances. Washington, DC.

ATTACHMENT 2

Off-site Traffic Modeling Input/Output Data

THIS PAGE IS INTENTIONALLY BLANK.

FHWA RD-77-108

Traffic Noise Prediction Model

Data Input Sheet

Project Name : LHR SP
Project Number : 6153
Modeled Condition : Existing

Surface Refelction: CNEL
Assessment Metric: Hard
Peak ratio to ADT: 10.00
Traffic Desc. (Peak or ADT) : ADT

Segment	Roadway	Segment From	Segment To	Traffic Vol.	Speed (Mph)	Distance to CL	% Autos	%MT	% HT	Day %	Eve %	Night %	K-Factor
1	E. Dulin Road	Old Highway 395	SR-76	1,830	55	100	95.25	2.75	2.00	78.00	8.00	14.00	
2	W. Lilac Road	Camino Del Rey	Camino Del Cielo	2,270	55	100	95.25	2.75	2.00	78.00	8.00	14.00	
3	W. Lilac Road	Camino Del Cielo	Old Highway 395	2,140	40	100	95.25	2.75	2.00	78.00	8.00	14.00	
4	W. Lilac Road	Old Highway 395	Main Street	1,150	40	100	95.25	2.75	2.00	78.00	8.00	14.00	
5	W. Lilac Road	Main Street	Street “F”	1,150	40	100	95.25	2.75	2.00	78.00	8.00	14.00	
6	W. Lilac Road	Street “F”	Covey Lane	1,150	40	100	95.25	2.75	2.00	78.00	8.00	14.00	
7	W. Lilac Road	Covey Lane	Circle R Drive	480	45	100	95.25	2.75	2.00	78.00	8.00	14.00	
8	W. Lilac Road	Circle R Drive	Lilac Road	1,170	45	100	95.25	2.75	2.00	78.00	8.00	14.00	
9	Camino Del Cielo	Camino Del Rey	W. Lilac Road	630	25	100	95.25	2.75	2.00	78.00	8.00	14.00	
10	Olive Hill Road	Shamrock Road	SR-76	3,380	45	100	95.25	2.75	2.00	78.00	8.00	14.00	
11	Camino Del Rey	SR-76	Old River Road	9,350	45	100	95.25	2.75	2.00	78.00	8.00	14.00	
12	Camino Del Rey	Old River Road	W. Lilac Road	8,640	45	100	95.25	2.75	2.00	78.00	8.00	14.00	
13	Camino Del Rey	W. Lilac Road	Camino Del Cielo	6,730	45	100	95.25	2.75	2.00	78.00	8.00	14.00	
14	Camino Del Rey	Camino Del Cielo	Old Highway 395	4,850	45	100	95.25	2.75	2.00	78.00	8.00	14.00	
15	Gopher Canyon Road	E. Vista Way	I-15 SB Ramps	15,320	45	100	95.25	2.75	2.00	78.00	8.00	14.00	
16	Gopher Canyon Road	I-15 SB Ramps	I-15 NB Ramps	12,390	45	100	95.25	2.75	2.00	78.00	8.00	14.00	
17	Gopher Canyon Road	I-15 NB Ramps	Old Highway 395	11,870	35	100	95.25	2.75	2.00	78.00	8.00	14.00	
18	Circle R Drive	Old Highway 395	Mountain Ridge Road	4,030	40	100	95.25	2.75	2.00	78.00	8.00	14.00	
19	Circle R Drive	Mountain Ridge Road	W. Lilac Road	1,770	45	100	95.25	2.75	2.00	78.00	8.00	14.00	
20	Old Castle Road	Old Highway 395	Lilac Road	6,840	45	100	95.25	2.75	2.00	78.00	8.00	14.00	
21	E. Vista Way	SR-76	Gopher Canyon Road	15,120	45	100	95.25	2.75	2.00	78.00	8.00	14.00	
22	E. Vista Way	Gopher Canyon Road	Osborne Street	21,020	45	100	95.25	2.75	2.00	78.00	8.00	14.00	
23	Old River Road	SR-76	Camino Del Rey	4,070	40	100	95.25	2.75	2.00	78.00	8.00	14.00	
24	Champagne Boulevard	Old Castle Road	Lawrence Welk Drive	4,170	40	100	95.25	2.75	2.00	78.00	8.00	14.00	
25	Pankey Road	Pala Mesa Drive	SR-76	70	40	100	95.25	2.75	2.00	78.00	8.00	14.00	
26	Lilac Road	Couser Canyon Road	W. Lilac Road	1,150	40	100	95.25	2.75	2.00	78.00	8.00	14.00	
27	Lilac Road	W. Lilac Road	Old Castle Road	2,640	40	100	95.25	2.75	2.00	78.00	8.00	14.00	

28	Lilac Road	Old Castle Road	Anthony Road	9,010	40	100	95.25	2.75	2.00	78.00	8.00	14.00
29	Lilac Road	Anthony Road	Betsworth Road	8,740	40	100	95.25	2.75	2.00	78.00	8.00	14.00
30	Lilac Road	Betsworth Road	Valley Center Road	9,620	40	100	95.25	2.75	2.00	78.00	8.00	14.00
31	Valley Center Road	Woods Valley Road	Lilac Road	21,290	40	100	95.25	2.75	2.00	78.00	8.00	14.00
32	Valley Center Road	Lilac Road	Miller Road	24,280	40	100	95.25	2.75	2.00	78.00	8.00	14.00
33	Valley Center Road	Miller Road	Cole Grade Road	22,440	40	100	95.25	2.75	2.00	78.00	8.00	14.00
34	Valley Center Road	Cole Grade Road	Vesper Road	11,490	40	100	95.25	2.75	2.00	78.00	8.00	14.00
35	Miller Road	Misty Oak Road	Valley Center Road	1,460	40	100	95.25	2.75	2.00	78.00	8.00	14.00
36	Cole Grade Road	Fruitvale Road	Valley Center Road	10,660	40	100	95.25	2.75	2.00	78.00	8.00	14.00
37	Old Highway 395	Pala Mesa Drive	SR-76	4,770	55	100	95.25	2.75	2.00	78.00	8.00	14.00
38	Old Highway 395	SR-76	E. Dulin Road	4,720	45	100	95.25	2.75	2.00	78.00	8.00	14.00
39	Old Highway 395	E. Dulin Road	W. Lilac Road	4,340	45	100	95.25	2.75	2.00	78.00	8.00	14.00
40	Old Highway 395	W. Lilac Road	I-15 SB Ramps	4,450	35	100	95.25	2.75	2.00	78.00	8.00	14.00
41	Old Highway 395	I-15 SB Ramps	I-15 NB Ramps	3,600	40	100	95.25	2.75	2.00	78.00	8.00	14.00
42	Old Highway 395	I-15 NB Ramps	Camino Del Rey	2,430	40	100	95.25	2.75	2.00	78.00	8.00	14.00
43	Old Highway 395	Camino Del Rey	Circle R Drive	5,820	40	100	95.25	2.75	2.00	78.00	8.00	14.00
44	Old Highway 395	Circle R Drive	Gopher Canyon Road	10,710	40	100	95.25	2.75	2.00	78.00	8.00	14.00
45	Old Highway 395	Gopher Canyon Road	Old Castle Road	8,660	40	100	95.25	2.75	2.00	78.00	8.00	14.00
46	I-15	Riverside County Boundary	Old Highway 395	134,000	65	100	95.25	2.75	2.00	78.00	8.00	14.00
47	I-15	Old Highway 395 to SR-76	SR-76	134,000	65	100	95.25	2.75	2.00	78.00	8.00	14.00
48	I-15	SR-76 to Old Highway 395	Old Highway 395	113,000	65	100	95.25	2.75	2.00	78.00	8.00	14.00
49	I-15	Old Highway 395	Gopher Canyon Road	110,000	65	100	91.03	2.75	6.22	65.00	10.00	25.00
50	I-15	Gopher Canyon Road	Deer Springd Road	117,000	65	100	91.03	2.75	6.22	65.00	10.00	25.00
51	I-15	Deer Springs Road	Centre City Parkway	117,000	65	100	91.03	2.75	6.22	65.00	10.00	25.00
52	I-15	Centre City Parkway	El Norte Parkway	111,000	65	100	91.03	2.75	6.22	65.00	10.00	25.00
53	I-15	El Norte Parkway	SR-78	127,000	65	100	91.03	2.75	6.22	65.00	10.00	25.00
54	I-15	SR-78	W Valley Parkway	192,000	65	100	91.03	2.75	6.22	65.00	10.00	25.00
55	I-15	W Valley Parkway	Auto Parkway	179,000	65	100	91.03	2.75	6.22	65.00	10.00	25.00
56	I-15	Auto Parkway	W Citracado Parkway	172,000	65	100	91.03	2.75	6.22	65.00	10.00	25.00
57	I-15	W Citracado Parkway	Via Rancho Parkway	196,000	65	100	91.03	2.75	6.22	65.00	10.00	25.00
58	I-15	Via Rancho Parkway	Bernardo Drive	198,000	65	100	91.03	2.75	6.22	65.00	10.00	25.00
59	I-15	Bernardo Drive	Rancho Bernardo Road	201,000	65	100	91.03	2.75	6.22	65.00	10.00	25.00
60	I-15	Rancho Bernardo Road	Bernardo Center Drive	209,000	65	100	91.03	2.75	6.22	65.00	10.00	25.00
61	I-15	Bernardo Center Drive	Camino Del Norte	214,000	65	100	91.03	2.75	6.22	65.00	10.00	25.00
62	Lilac Hills Ranch Road	Phase 3	Phase 4	1	40	100	91.03	2.75	6.22	65.00	10.00	25.00

FHWA RD-77-108

Traffic Noise Prediction Model

Predicted Noise Levels

Project Name : LHR SP
Project Number : 6153
Modeled Condition : Existing
Assessment Metric: Hard

		Segment		Noise Levels, dBA Hard				Distance to Traffic Noise Level Contours, Feet					
Segment	Roadway	From	To	Auto	MT	HT	Total	75 dB	70 dB	65 dB	60 dB	55 dB	50 dB
1	E. Dulin Road	Old Highway 395	SR-76	59.7	51.4	53.9	61	4	13	42	132	417	1,318
2	W. Lilac Road	Camino Del Rey	Camino Del Cielo	60.6	52.3	54.9	62	5	16	51	162	513	1,622
3	W. Lilac Road	Camino Del Cielo	Old Highway 395	56.4	49.9	53.3	59	2	7	23	74	234	741
4	W. Lilac Road	Old Highway 395	Main Street	53.7	47.2	50.6	56	1	4	13	40	126	398
5	W. Lilac Road	Main Street	Street “F”	53.7	47.2	50.6	56	1	4	13	40	126	398
6	W. Lilac Road	Street “F”	Covey Lane	53.7	47.2	50.6	56	1	4	13	40	126	398
7	W. Lilac Road	Covey Lane	Circle R Drive	51.3	44.2	47.3	53	1	2	7	21	68	214
8	Circle R Drive	Mountain Ridge Road	Lilac Road	55.2	48.1	51.2	57	2	5	17	52	166	525
9	Old Castle Road	Old Highway 395	W. Lilac Road	45.2	41.4	47.6	50	0	1	3	10	33	105
10	Olive Hill Road	Shamrock Road	SR-76	59.8	52.7	55.8	62	5	15	48	151	479	1,514
11	Camino Del Rey	SR-76	Old River Road	64.2	57.1	60.2	66	13	42	132	417	1,318	4,169
12	Camino Del Rey	Old River Road	W. Lilac Road	63.9	56.7	59.9	66	12	39	123	389	1,230	3,890
13	Camino Del Rey	W. Lilac Road	Camino Del Cielo	62.8	55.7	58.8	65	10	30	95	302	955	3,020
14	Camino Del Rey	Camino Del Cielo	Old Highway 395	61.4	54.2	57.4	63	7	22	69	219	692	2,188
15	Gopher Canyon Road	E. Vista Way	I-15 SB Ramps	66.4	59.2	62.3	68	22	69	219	692	2,188	6,918
16	Gopher Canyon Road	I-15 SB Ramps	I-15 NB Ramps	65.5	58.3	61.4	68	18	56	178	562	1,778	5,623
17	Gopher Canyon Road	I-15 NB Ramps	Old Highway 395	62.1	56.4	60.2	65	10	32	100	316	1,000	3,162
18	Circle R Drive	Old Highway 395	Mountain Ridge Road	59.1	52.6	56.1	62	4	14	45	141	447	1,413
19	Circle R Drive	Mountain Ridge Road	W. Lilac Road	57.0	49.9	53.0	59	3	8	25	79	251	794
20	Old Castle Road	Old Highway 395	Lilac Road	62.9	55.7	58.8	65	10	31	98	309	977	3,090
21	E. Vista Way	SR-76	Gopher Canyon Road	66.3	59.2	62.3	68	21	68	214	676	2,138	6,761
22	E. Vista Way	Gopher Canyon Road	Osborne Street	67.8	60.6	63.7	70	30	95	302	955	3,020	9,550
23	Old River Road	SR-76	Camino Del Rey	59.1	52.7	56.1	62	4	14	45	141	447	1,413
24	Champagne Boulevard	Old Castle Road	Lawrence Welk Drive	59.3	52.8	56.2	62	5	14	46	145	457	1,445
25	Pankey Road	Pala Mesa Drive	SR-76	41.5	35.0	38.5	44	0	0	1	2	8	25
26	Lilac Road	Couser Canyon Road	W. Lilac Road	53.7	47.2	50.6	56	1	4	13	40	126	398
27	Lilac Road	W. Lilac Road	Old Castle Road	57.3	50.8	54.2	60	3	9	29	91	288	912

28	Lilac Road	Old Castle Road	Anthony Road	62.6	56.1	59.6	65	10	32	100	316	1,000	3,162
29	Lilac Road	Anthony Road	Betsworth Road	62.5	56.0	59.4	65	10	30	95	302	955	3,020
30	Lilac Road	Betsworth Road	Valley Center Road	62.9	56.4	59.9	65	10	33	105	331	1,047	3,311
31	Valley Center Road	Woods Valley Road	Lilac Road	66.3	59.9	63.3	69	23	74	234	741	2,344	7,413
32	Valley Center Road	Lilac Road	Miller Road	66.9	60.4	63.9	69	27	85	269	851	2,692	8,511
33	Valley Center Road	Miller Road	Cole Grade Road	66.6	60.1	63.5	69	25	78	245	776	2,455	7,762
34	Valley Center Road	Cole Grade Road	Vesper Road	63.7	57.2	60.6	66	13	40	126	398	1,259	3,981
35	Miller Road	Misty Oak Road	Valley Center Road	54.7	48.2	51.7	57	2	5	16	51	162	513
36	Cole Grade Road	Fruitvale Road	Valley Center Road	63.3	56.9	60.3	66	12	37	117	372	1,175	3,715
37	Old Highway 395	Pala Mesa Drive	SR-76	63.8	55.5	58.1	65	11	34	107	339	1,072	3,388
38	Old Highway 395	SR-76	E. Dulin Road	61.3	54.1	57.2	63	7	21	68	214	676	2,138
39	Old Highway 395	E. Dulin Road	W. Lilac Road	60.9	53.8	56.9	63	6	19	62	195	617	1,950
40	Old Highway 395	W. Lilac Road	I-15 SB Ramps	57.9	52.2	56.0	61	4	12	37	117	372	1,175
41	Old Highway 395	I-15 SB Ramps	I-15 NB Ramps	58.6	52.1	55.6	61	4	13	40	126	398	1,259
42	Old Highway 395	I-15 NB Ramps	Camino Del Rey	56.9	50.4	53.9	59	3	9	27	85	269	851
43	Old Highway 395	Camino Del Rey	Circle R Drive	60.7	54.2	57.7	63	6	20	65	204	646	2,042
44	Old Highway 395	Circle R Drive	Gopher Canyon Road	63.4	56.9	60.3	66	12	37	117	372	1,175	3,715
45	Old Highway 395	Gopher Canyon Road	Old Castle Road	62.4	56.0	59.4	65	10	30	95	302	955	3,020
46	I-15	Riverside County Boundary	Old Highway 395	80.4	71.1	73.2	81.6	457	1,445	4,571	14,454	45,709	144,544
47	I-15	Old Highway 395 to SR-76	SR-76	80.4	71.1	73.2	81.6	457	1,445	4,571	14,454	45,709	144,544
48	I-15	SR-76 to Old Highway 395	Old Highway 395	79.7	70.4	72.5	80.8	380	1,202	3,802	12,023	38,019	120,226
49	I-15	Old Highway 395	Gopher Canyon Road	80.8	71.8	78.8	83	676	2,138	6,761	21,380	67,608	213,796
50	I-15	Gopher Canyon Road	Deer Springd Road	81.1	72.1	79.1	84	708	2,239	7,079	22,387	70,795	223,872
51	I-15	Deer Springs Road	Centre City Parkway	81.1	72.1	79.1	84	708	2,239	7,079	22,387	70,795	223,872
52	I-15	Centre City Parkway	El Norte Parkway	80.9	71.8	78.9	83	676	2,138	6,761	21,380	67,608	213,796
53	I-15	El Norte Parkway	SR-78	81.5	72.4	79.4	84	776	2,455	7,762	24,547	77,625	245,471
54	I-15	SR-78	W Valley Parkway	83.3	74.2	81.2	86	1,175	3,715	11,749	37,154	117,490	371,535
55	I-15	W Valley Parkway	Auto Parkway	83.0	73.9	80.9	85	1,096	3,467	10,965	34,674	109,648	346,737
56	I-15	Auto Parkway	W Citracado Parkway	82.8	73.7	80.8	85	1,047	3,311	10,471	33,113	104,713	331,131
57	I-15	W Citracado Parkway	Via Rancho Parkway	83.4	74.3	81.3	86	1,202	3,802	12,023	38,019	120,226	380,189
58	I-15	Via Rancho Parkway	Bernardo Drive	83.4	74.3	81.4	86	1,202	3,802	12,023	38,019	120,226	380,189
59	I-15	Bernardo Drive	Rancho Bernardo Road	83.5	74.4	81.4	86	1,230	3,890	12,303	38,905	123,027	389,045
60	I-15	Rancho Bernardo Road	Bernardo Center Drive	83.6	74.6	81.6	86	1,288	4,074	12,882	40,738	128,825	407,380
61	I-15	Bernardo Center Drive	Camino Del Norte	83.7	74.7	81.7	86	1,318	4,169	13,183	41,687	131,826	416,869
62	Lilac Hills Ranch Road	Phase 3	Phase 4	24.4	18.1	26.5	29	0	0	0	0	0	1

FHWA RD-77-108

Traffic Noise Prediction Model

Data Input Sheet

Project Name : LHR SP
Project Number : 6153
Modeled Condition : Existing + Phase A

Surface Refelction: CNEL
Assessment Metric: Hard
Peak ratio to ADT: 10.00
Traffic Desc. (Peak or ADT) : ADT

Segment	Roadway	Segment From	Segment To	Traffic Vol.	Speed (Mph)	Distance to CL	% Autos	%MT	% HT	Day %
1	E. Dulin Road	Old Highway 395	SR-76	2,320	55	100	95.25	2.75	2.00	78.00
2	W. Lilac Road	Camino Del Rey	Camino Del Cielo	2,470	55	100	95.25	2.75	2.00	78.00
3	W. Lilac Road	Camino Del Cielo	Old Highway 395	2,410	40	100	95.25	2.75	2.00	78.00
4	W. Lilac Road	Old Highway 395	Main Street	4,310	40	100	95.25	2.75	2.00	78.00
5	W. Lilac Road	Main Street	Street “F”	1,500	40	100	95.25	2.75	2.00	78.00
6	W. Lilac Road	Street “F”	Covey Lane	1,500	40	100	95.25	2.75	2.00	78.00
7	W. Lilac Road	Covey Lane	Circle R Drive	830	45	100	95.25	2.75	2.00	78.00
8	W. Lilac Road	Circle R Drive	Lilac Road	1,490	45	100	95.25	2.75	2.00	78.00
9	Camino Del Cielo	Camino Del Rey	W. Lilac Road	640	25	100	95.25	2.75	2.00	78.00
10	Olive Hill Road	Shamrock Road	SR-76	3,400	45	100	95.25	2.75	2.00	78.00
11	Camino Del Rey	SR-76	Old River Road	9,420	45	100	95.25	2.75	2.00	78.00
12	Camino Del Rey	Old River Road	W. Lilac Road	8,850	45	100	95.25	2.75	2.00	78.00
13	Camino Del Rey	W. Lilac Road	Camino Del Cielo	6,740	45	100	95.25	2.75	2.00	78.00
14	Camino Del Rey	Camino Del Cielo	Old Highway 395	4,870	45	100	95.25	2.75	2.00	78.00
15	Gopher Canyon Road	E. Vista Way	I-15 SB Ramps	15,450	45	100	95.25	2.75	2.00	78.00
16	Gopher Canyon Road	I-15 SB Ramps	I-15 NB Ramps	12,520	45	100	95.25	2.75	2.00	78.00
17	Gopher Canyon Road	I-15 NB Ramps	Old Highway 395	12,000	35	100	95.25	2.75	2.00	78.00
18	Circle R Drive	Old Highway 395	Mountain Ridge Road	4,060	40	100	95.25	2.75	2.00	78.00
19	Circle R Drive	Mountain Ridge Road	W. Lilac Road	1,800	45	100	95.25	2.75	2.00	78.00
20	Old Castle Road	Old Highway 395	Lilac Road	6,870	45	100	95.25	2.75	2.00	78.00
21	E. Vista Way	SR-76	Gopher Canyon Road	15,160	45	100	95.25	2.75	2.00	78.00
22	E. Vista Way	Gopher Canyon Road	Osborne Street	21,090	45	100	95.25	2.75	2.00	78.00
23	Old River Road	SR-76	Camino Del Rey	4,210	40	100	95.25	2.75	2.00	78.00
24	Champagne Boulevard	Old Castle Road	Lawrence Welk Drive	4,230	40	100	95.25	2.75	2.00	78.00
25	Pankey Road	Pala Mesa Drive	SR-76	70	40	100	95.25	2.75	2.00	78.00
26	Lilac Road	Couser Canyon Road	W. Lilac Road	1,200	40	100	95.25	2.75	2.00	78.00
27	Lilac Road	W. Lilac Road	Old Castle Road	2,890	40	100	95.25	2.75	2.00	78.00
28	Lilac Road	Old Castle Road	Anthony Road	9,240	40	100	95.25	2.75	2.00	78.00

29	Lilac Road	Anthony Road	Betsworth Road	8,870	40	100	95.25	2.75	2.00	78.00
30	Lilac Road	Betsworth Road	Valley Center Road	9,730	40	100	95.25	2.75	2.00	78.00
31	Valley Center Road	Woods Valley Road	Lilac Road	21,310	40	100	95.25	2.75	2.00	78.00
32	Valley Center Road	Lilac Road	Miller Road	24,370	40	100	95.25	2.75	2.00	78.00
33	Valley Center Road	Miller Road	Cole Grade Road	22,530	40	100	95.25	2.75	2.00	78.00
34	Valley Center Road	Cole Grade Road	Vesper Road	11,540	40	100	95.25	2.75	2.00	78.00
35	Miller Road	Misty Oak Road	Valley Center Road	1,470	40	100	95.25	2.75	2.00	78.00
36	Cole Grade Road	Fruitvale Road	Valley Center Road	10,690	40	100	95.25	2.75	2.00	78.00
37	Old Highway 395	Pala Mesa Drive	SR-76	4,870	55	100	95.25	2.75	2.00	78.00
38	Old Highway 395	SR-76	E. Dulin Road	5,070	45	100	95.25	2.75	2.00	78.00
39	Old Highway 395	E. Dulin Road	W. Lilac Road	5,190	45	100	95.25	2.75	2.00	78.00
40	Old Highway 395	W. Lilac Road	I-15 SB Ramps	6,400	35	100	95.25	2.75	2.00	78.00
41	Old Highway 395	I-15 SB Ramps	I-15 NB Ramps	4,700	40	100	95.25	2.75	2.00	78.00
42	Old Highway 395	I-15 NB Ramps	Camino Del Rey	2,730	40	100	95.25	2.75	2.00	78.00
43	Old Highway 395	Camino Del Rey	Circle R Drive	6,080	40	100	95.25	2.75	2.00	78.00
44	Old Highway 395	Circle R Drive	Gopher Canyon Road	10,940	40	100	95.25	2.75	2.00	78.00
45	Old Highway 395	Gopher Canyon Road	Old Castle Road	8,750	40	100	95.25	2.75	2.00	78.00
46	I-15	Riverside County Boundary	Old Highway 395	134,590	65	100	95.25	2.75	2.00	78.00
47	I-15	Old Highway 395 to SR-76	SR-76	134,610	65	100	95.25	2.75	2.00	78.00
48	I-15	SR-76 to Old Highway 395	Old Highway 395	113,530	65	100	95.25	2.75	2.00	78.00
49	I-15	Old Highway 395	Gopher Canyon Road	111,160	65	100	91.03	2.75	6.22	65.00
50	I-15	Gopher Canyon Road	Deer Springd Road	118,160	65	100	91.03	2.75	6.22	65.00
51	I-15	Deer Springs Road	Centre City Parkway	117,940	65	100	91.03	2.75	6.22	65.00
52	I-15	Centre City Parkway	El Norte Parkway	111,750	65	100	91.03	2.75	6.22	65.00
53	I-15	El Norte Parkway	SR-78	127,690	65	100	91.03	2.75	6.22	65.00
54	I-15	SR-78	W Valley Parkway	192,510	65	100	91.03	2.75	6.22	65.00
55	I-15	W Valley Parkway	Auto Parkway	179,430	65	100	91.03	2.75	6.22	65.00
56	I-15	Auto Parkway	W Citracado Parkway	172,420	65	100	91.03	2.75	6.22	65.00
57	I-15	W Citracado Parkway	Via Rancho Parkway	196,370	65	100	91.03	2.75	6.22	65.00
58	I-15	Via Rancho Parkway	Bernardo Drive	198,340	65	100	91.03	2.75	6.22	65.00
59	I-15	Bernardo Drive	Rancho Bernardo Road	201,320	65	100	91.03	2.75	6.22	65.00
60	I-15	Rancho Bernardo Road	Bernardo Center Drive	209,200	65	100	91.03	2.75	6.22	65.00
61	I-15	Bernardo Center Drive	Camino Del Norte	214,290	65	100	91.03	2.75	6.22	65.00
62	Lilac Hills Ranch Road	Phase 3	Phase 4	1	40	100	91.03	2.75	6.22	65.00

FHWA RD-77-108

Traffic Noise Prediction Model

Predicted Noise Levels

Project Name : LHR SP
Project Number : 6153
Modeled Condition : Existing + Phase A
Assessment Metric: Hard

		Segment		Noise Levels, dBA Hard				Distance to Traffic		
Segment	Roadway	From	To	Auto	MT	HT	Total	75 dB	70 dB	65 dB
1	E. Dulin Road	Old Highway 395	SR-76	60.7	52.4	55.0	62	5	17	52
2	W. Lilac Road	Camino Del Rey	Camino Del Cielo	61.0	52.7	55.2	63	6	18	56
3	W. Lilac Road	Camino Del Cielo	Old Highway 395	56.9	50.4	53.8	59	3	8	26
4	W. Lilac Road	Old Highway 395	Main Street	59.4	52.9	56.4	62	5	15	48
5	W. Lilac Road	Main Street	Street “F”	54.8	48.3	51.8	57	2	5	17
6	W. Lilac Road	Street “F”	Covey Lane	54.8	48.3	51.8	57	2	5	17
7	W. Lilac Road	Covey Lane	Circle R Drive	53.7	46.6	49.7	56	1	4	12
8	Circle R Drive	Mountain Ridge Road	Lilac Road	57.1	49.9	53.0	59	3	8	26
9	Old Castle Road	Old Highway 395	W. Lilac Road	62.9	55.8	58.9	65	10	31	98
10	Olive Hill Road	Shamrock Road	SR-76	59.8	52.7	55.8	62	5	15	49
11	Camino Del Rey	SR-76	Old River Road	64.3	57.1	60.2	66	13	43	135
12	Camino Del Rey	Old River Road	W. Lilac Road	64.0	56.9	60.0	66	13	40	126
13	Camino Del Rey	W. Lilac Road	Camino Del Cielo	62.8	55.7	58.8	65	10	30	95
14	Camino Del Rey	Camino Del Cielo	Old Highway 395	61.4	54.3	57.4	63	7	22	69
15	Gopher Canyon Road	E. Vista Way	I-15 SB Ramps	66.4	59.3	62.4	68	22	69	219
16	Gopher Canyon Road	I-15 SB Ramps	I-15 NB Ramps	65.5	58.4	61.5	68	18	56	178
17	Gopher Canyon Road	I-15 NB Ramps	Old Highway 395	62.2	56.5	60.3	65	10	32	100
18	Circle R Drive	Old Highway 395	Mountain Ridge Road	59.1	52.7	56.1	62	4	14	45
19	Circle R Drive	Mountain Ridge Road	W. Lilac Road	57.1	49.9	53.0	59	3	8	26
20	Old Castle Road	Old Highway 395	Lilac Road	62.9	55.8	58.9	65	10	31	98
21	E. Vista Way	SR-76	Gopher Canyon Road	66.3	59.2	62.3	68	21	68	214
22	E. Vista Way	Gopher Canyon Road	Osborne Street	67.8	60.6	63.7	70	30	95	302
23	Old River Road	SR-76	Camino Del Rey	59.3	52.8	56.3	62	5	15	47
24	Champagne Boulevard	Old Castle Road	Lawrence Welk Drive	59.3	52.8	56.3	62	5	15	47
25	Pankey Road	Pala Mesa Drive	SR-76	41.5	35.0	38.5	44	0	0	1
26	Lilac Road	Couser Canyon Road	W. Lilac Road	53.8	47.4	50.8	56	1	4	13
27	Lilac Road	W. Lilac Road	Old Castle Road	57.7	51.2	54.6	60	3	10	32
28	Lilac Road	Old Castle Road	Anthony Road	62.7	56.2	59.7	65	10	32	102

29	Lilac Road	Anthony Road	Betsworth Road	62.5	56.1	59.5	65	10	31	98
30	Lilac Road	Betsworth Road	Valley Center Road	62.9	56.5	59.9	65	11	34	107
31	Valley Center Road	Woods Valley Road	Lilac Road	66.3	59.9	63.3	69	23	74	234
32	Valley Center Road	Lilac Road	Miller Road	66.9	60.5	63.9	69	27	85	269
33	Valley Center Road	Miller Road	Cole Grade Road	66.6	60.1	63.6	69	25	78	245
34	Valley Center Road	Cole Grade Road	Vesper Road	63.7	57.2	60.6	66	13	40	126
35	Miller Road	Misty Oak Road	Valley Center Road	54.7	48.3	51.7	57	2	5	16
36	Cole Grade Road	Fruitvale Road	Valley Center Road	63.3	56.9	60.3	66	12	37	117
37	Old Highway 395	Pala Mesa Drive	SR-76	63.9	55.6	58.2	65	11	35	110
38	Old Highway 395	SR-76	E. Dulin Road	61.6	54.4	57.5	64	7	23	72
39	Old Highway 395	E. Dulin Road	W. Lilac Road	61.7	54.5	57.6	64	7	23	74
40	Old Highway 395	W. Lilac Road	I-15 SB Ramps	59.4	53.7	57.6	62	5	17	54
41	Old Highway 395	I-15 SB Ramps	I-15 NB Ramps	59.8	53.3	56.7	62	5	16	51
42	Old Highway 395	I-15 NB Ramps	Camino Del Rey	57.4	50.9	54.4	60	3	10	30
43	Old Highway 395	Camino Del Rey	Circle R Drive	60.9	54.4	57.9	63	7	21	68
44	Old Highway 395	Circle R Drive	Gopher Canyon Road	63.4	57.0	60.4	66	12	38	120
45	Old Highway 395	Gopher Canyon Road	Old Castle Road	62.5	56.0	59.4	65	10	30	95
46	I-15	Riverside County Boundary	Old Highway 395	80.4	71.2	73.3	82	457	1,445	4,571
47	I-15	Old Highway 395 to SR-76	SR-76	80.4	71.2	73.3	82	457	1,445	4,571
48	I-15	SR-76 to Old Highway 395	Old Highway 395	79.7	70.4	72.5	81	389	1,230	3,890
49	I-15	Old Highway 395	Gopher Canyon Road	80.9	71.8	78.9	83	676	2,138	6,761
50	I-15	Gopher Canyon Road	Deer Springd Road	81.2	72.1	79.1	84	724	2,291	7,244
51	I-15	Deer Springs Road	Centre City Parkway	81.2	72.1	79.1	84	724	2,291	7,244
52	I-15	Centre City Parkway	El Norte Parkway	80.9	71.9	78.9	83	676	2,138	6,761
53	I-15	El Norte Parkway	SR-78	81.5	72.4	79.5	84	776	2,455	7,762
54	I-15	SR-78	W Valley Parkway	83.3	74.2	81.2	86	1,175	3,715	11,749
55	I-15	W Valley Parkway	Auto Parkway	83.0	73.9	80.9	85	1,096	3,467	10,965
56	I-15	Auto Parkway	W Citracado Parkway	82.8	73.7	80.8	85	1,047	3,311	10,471
57	I-15	W Citracado Parkway	Via Rancho Parkway	83.4	74.3	81.3	86	1,202	3,802	12,023
58	I-15	Via Rancho Parkway	Bernardo Drive	83.4	74.4	81.4	86	1,202	3,802	12,023
59	I-15	Bernardo Drive	Rancho Bernardo Road	83.5	74.4	81.4	86	1,230	3,890	12,303
60	I-15	Rancho Bernardo Road	Bernardo Center Drive	83.6	74.6	81.6	86	1,288	4,074	12,882
61	I-15	Bernardo Center Drive	Camino Del Norte	83.7	74.7	81.7	86	1,318	4,169	13,183
62	Lilac Hills Ranch Road	Phase 3	Phase 4	24.4	18.1	26.5	29	0	0	0

Eve %	Night %	K-Factor
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	

8.00	14.00
8.00	14.00
8.00	14.00
8.00	14.00
8.00	14.00
8.00	14.00
8.00	14.00
8.00	14.00
8.00	14.00
8.00	14.00
8.00	14.00
8.00	14.00
8.00	14.00
8.00	14.00
8.00	14.00
8.00	14.00
8.00	14.00
8.00	14.00
8.00	14.00
8.00	14.00
8.00	14.00
10.00	25.00
10.00	25.00
10.00	25.00
10.00	25.00
10.00	25.00
10.00	25.00
10.00	25.00
10.00	25.00
10.00	25.00
10.00	25.00
10.00	25.00
10.00	25.00
10.00	25.00
10.00	25.00
10.00	25.00

Noise Level Contours, Feet		
60 dB	55 dB	50 dB
166	525	1,660
178	562	1,778
83	263	832
151	479	1,514
52	166	525
52	166	525
37	117	372
81	257	813
309	977	3,090
155	490	1,549
427	1,349	4,266
398	1,259	3,981
302	955	3,020
219	692	2,188
692	2,188	6,918
562	1,778	5,623
316	1,000	3,162
141	447	1,413
81	257	813
309	977	3,090
676	2,138	6,761
955	3,020	9,550
148	468	1,479
148	468	1,479
2	8	25
42	132	417
100	316	1,000
324	1,023	3,236

309	977	3,090
339	1,072	3,388
741	2,344	7,413
851	2,692	8,511
776	2,455	7,762
398	1,259	3,981
51	162	513
372	1,175	3,715
347	1,096	3,467
229	724	2,291
234	741	2,344
170	537	1,698
162	513	1,622
95	302	955
214	676	2,138
380	1,202	3,802
302	955	3,020
14,454	45,709	144,544
14,454	45,709	144,544
12,303	38,905	123,027
21,380	67,608	213,796
22,909	72,444	229,087
22,909	72,444	229,087
21,380	67,608	213,796
24,547	77,625	245,471
37,154	117,490	371,535
34,674	109,648	346,737
33,113	104,713	331,131
38,019	120,226	380,189
38,019	120,226	380,189
38,905	123,027	389,045
40,738	128,825	407,380
41,687	131,826	416,869
0	0	1

FHWA RD-77-108

Traffic Noise Prediction Model

Data Input Sheet

Project Name : LHR SP
Project Number : 6153
Modeled Condition : Existing + Phase E, Buildout

Surface Refelction: CNEL
Assessment Metric: Hard
Peak ratio to ADT: 10.00
Traffic Desc. (Peak or ADT) : ADT

Segment	Roadway	Segment From	Segment To	Traffic Vol.	Speed (Mph)	Distance to CL	% Autos	%MT	% HT	Day %	Eve %	Night %	K-Factor
1	E. Dulin Road	Old Highway 395	SR-76	3,960	55	100	95.25	2.75	2.00	78.00	8.00	14.00	
2	W. Lilac Road	Camino Del Rey	Camino Del Cielo	3,160	55	100	95.25	2.75	2.00	78.00	8.00	14.00	
3	W. Lilac Road	Camino Del Cielo	Old Highway 395	3,290	40	100	95.25	2.75	2.00	78.00	8.00	14.00	
4	W. Lilac Road	Old Highway 395	Main Street	13,400	40	100	95.25	2.75	2.00	78.00	8.00	14.00	
5	W. Lilac Road	Main Street	Street “F”	2,960	40	100	95.25	2.75	2.00	78.00	8.00	14.00	
6	W. Lilac Road	Street “F”	Covey Lane	1,810	40	100	95.25	2.75	2.00	78.00	8.00	14.00	
7	W. Lilac Road	Covey Lane	Circle R Drive	2,130	45	100	95.25	2.75	2.00	78.00	8.00	14.00	
8	W. Lilac Road	Circle R Drive	Lilac Road	2,470	45	100	95.25	2.75	2.00	78.00	8.00	14.00	
9	Camino Del Cielo	Camino Del Rey	W. Lilac Road	680	25	100	95.25	2.75	2.00	78.00	8.00	14.00	
10	Olive Hill Road	Shamrock Road	SR-76	3,470	45	100	95.25	2.75	2.00	78.00	8.00	14.00	
11	Camino Del Rey	SR-76	Old River Road	9,660	45	100	95.25	2.75	2.00	78.00	8.00	14.00	
12	Camino Del Rey	Old River Road	W. Lilac Road	9,560	45	100	95.25	2.75	2.00	78.00	8.00	14.00	
13	Camino Del Rey	W. Lilac Road	Camino Del Cielo	6,790	45	100	95.25	2.75	2.00	78.00	8.00	14.00	
14	Camino Del Rey	Camino Del Cielo	Old Highway 395	4,950	45	100	95.25	2.75	2.00	78.00	8.00	14.00	
15	Gopher Canyon Road	E. Vista Way	I-15 SB Ramps	15,890	45	100	95.25	2.75	2.00	78.00	8.00	14.00	
16	Gopher Canyon Road	I-15 SB Ramps	I-15 NB Ramps	13,320	45	100	95.25	2.75	2.00	78.00	8.00	14.00	
17	Gopher Canyon Road	I-15 NB Ramps	Old Highway 395	13,140	35	100	95.25	2.75	2.00	78.00	8.00	14.00	
18	Circle R Drive	Old Highway 395	Mountain Ridge Road	5,210	40	100	95.25	2.75	2.00	78.00	8.00	14.00	
19	Circle R Drive	Mountain Ridge Road	W. Lilac Road	2,380	45	100	95.25	2.75	2.00	78.00	8.00	14.00	
20	Old Castle Road	Old Highway 395	Lilac Road	6,970	45	100	95.25	2.75	2.00	78.00	8.00	14.00	
21	E. Vista Way	SR-76	Gopher Canyon Road	15,330	45	100	95.25	2.75	2.00	78.00	8.00	14.00	
22	E. Vista Way	Gopher Canyon Road	Osborne Street	21,340	45	100	95.25	2.75	2.00	78.00	8.00	14.00	
23	Old River Road	SR-76	Camino Del Rey	4,690	40	100	95.25	2.75	2.00	78.00	8.00	14.00	
24	Champagne Boulevard	Old Castle Road	Lawrence Welk Drive	4,440	40	100	95.25	2.75	2.00	78.00	8.00	14.00	
25	Pankey Road	Pala Mesa Drive	SR-76	70	40	100	95.25	2.75	2.00	78.00	8.00	14.00	
26	Lilac Road	Couser Canyon Road	W. Lilac Road	1,380	40	100	95.25	2.75	2.00	78.00	8.00	14.00	
27	Lilac Road	W. Lilac Road	Old Castle Road	3,720	40	100	95.25	2.75	2.00	78.00	8.00	14.00	
28	Lilac Road	Old Castle Road	Anthony Road	10,020	40	100	95.25	2.75	2.00	78.00	8.00	14.00	

29	Lilac Road	Anthony Road	Betsworth Road	9,330	40	100	95.25	2.75	2.00	78.00	8.00	14.00
30	Lilac Road	Betsworth Road	Valley Center Road	10,100	40	100	95.25	2.75	2.00	78.00	8.00	14.00
31	Valley Center Road	Woods Valley Road	Lilac Road	21,370	40	100	95.25	2.75	2.00	78.00	8.00	14.00
32	Valley Center Road	Lilac Road	Miller Road	24,670	40	100	95.25	2.75	2.00	78.00	8.00	14.00
33	Valley Center Road	Miller Road	Cole Grade Road	22,820	40	100	95.25	2.75	2.00	78.00	8.00	14.00
34	Valley Center Road	Cole Grade Road	Vesper Road	11,710	40	100	95.25	2.75	2.00	78.00	8.00	14.00
35	Miller Road	Misty Oak Road	Valley Center Road	1,480	40	100	95.25	2.75	2.00	78.00	8.00	14.00
36	Cole Grade Road	Fruitvale Road	Valley Center Road	10,780	40	100	95.25	2.75	2.00	78.00	8.00	14.00
37	Old Highway 395	Pala Mesa Drive	SR-76	5,210	55	100	95.25	2.75	2.00	78.00	8.00	14.00
38	Old Highway 395	SR-76	E. Dulin Road	6,230	45	100	95.25	2.75	2.00	78.00	8.00	14.00
39	Old Highway 395	E. Dulin Road	W. Lilac Road	8,010	45	100	95.25	2.75	2.00	78.00	8.00	14.00
40	Old Highway 395	W. Lilac Road	I-15 SB Ramps	11,340	35	100	95.25	2.75	2.00	78.00	8.00	14.00
41	Old Highway 395	I-15 SB Ramps	I-15 NB Ramps	7,450	40	100	95.25	2.75	2.00	78.00	8.00	14.00
42	Old Highway 395	I-15 NB Ramps	Camino Del Rey	3,640	40	100	95.25	2.75	2.00	78.00	8.00	14.00
43	Old Highway 395	Camino Del Rey	Circle R Drive	7,100	40	100	95.25	2.75	2.00	78.00	8.00	14.00
44	Old Highway 395	Circle R Drive	Gopher Canyon Road	12,370	40	100	95.25	2.75	2.00	78.00	8.00	14.00
45	Old Highway 395	Gopher Canyon Road	Old Castle Road	9,050	40	100	95.25	2.75	2.00	78.00	8.00	14.00
46	I-15	Riverside County Boundary	Old Highway 395	136,550	65	100	95.25	2.75	2.00	78.00	8.00	14.00
47	I-15	Old Highway 395 to SR-76	SR-76	136,640	65	100	95.25	2.75	2.00	78.00	8.00	14.00
48	I-15	SR-76 to Old Highway 395	Old Highway 395	115,320	65	100	95.25	2.75	2.00	78.00	8.00	14.00
49	I-15	Old Highway 395	Gopher Canyon Road	114,000	65	100	91.03	2.75	6.22	65.00	10.00	25.00
50	I-15	Gopher Canyon Road	Deer Springd Road	121,580	65	100	91.03	2.75	6.22	65.00	10.00	25.00
51	I-15	Deer Springs Road	Centre City Parkway	121,050	65	100	91.03	2.75	6.22	65.00	10.00	25.00
52	I-15	Centre City Parkway	El Norte Parkway	114,210	65	100	91.03	2.75	6.22	65.00	10.00	25.00
53	I-15	El Norte Parkway	SR-78	129,970	65	100	91.03	2.75	6.22	65.00	10.00	25.00
54	I-15	SR-78	W Valley Parkway	194,200	65	100	91.03	2.75	6.22	65.00	10.00	25.00
55	I-15	W Valley Parkway	Auto Parkway	180,850	65	100	91.03	2.75	6.22	65.00	10.00	25.00
56	I-15	Auto Parkway	W Citracado Parkway	173,800	65	100	91.03	2.75	6.22	65.00	10.00	25.00
57	I-15	W Citracado Parkway	Via Rancho Parkway	197,590	65	100	91.03	2.75	6.22	65.00	10.00	25.00
58	I-15	Via Rancho Parkway	Bernardo Drive	199,470	65	100	91.03	2.75	6.22	65.00	10.00	25.00
59	I-15	Bernardo Drive	Rancho Bernardo Road	202,380	65	100	91.03	2.75	6.22	65.00	10.00	25.00
60	I-15	Rancho Bernardo Road	Bernardo Center Drive	210,290	65	100	91.03	2.75	6.22	65.00	10.00	25.00
61	I-15	Bernardo Center Drive	Camino Del Norte	215,230	65	100	91.03	2.75	6.22	65.00	10.00	25.00
62	Lilac Hills Ranch Road	Phase 3	Phase 4	2,060	40	100	91.03	2.75	6.22	65.00	10.00	25.00

FHWA RD-77-108

Traffic Noise Prediction Model

Predicted Noise Levels

Project Name : LHR SP
Project Number : 6153
Modeled Condition : Existing + Phase E, Buildout
Assessment Metric: Hard

		Segment		Noise Levels, dBA Hard				Distance to Traffic Noise Level Contours, Feet					
Segment	Roadway	From	To	Auto	MT	HT	Total	75 dB	70 dB	65 dB	60 dB	55 dB	50 dB
1	E. Dulin Road	Old Highway 395	SR-76	63.0	54.7	57.3	65	9	28	89	282	891	2,818
2	W. Lilac Road	Camino Del Rey	Camino Del Cielo	62.0	53.7	56.3	64	7	22	71	224	708	2,239
3	W. Lilac Road	Camino Del Cielo	Old Highway 395	58.2	51.8	55.2	61	4	11	36	115	363	1,148
4	W. Lilac Road	Old Highway 395	Main Street	64.3	57.9	61.3	67	15	47	148	468	1,479	4,677
5	W. Lilac Road	Main Street	Street “F”	57.8	51.3	54.7	60	3	10	32	102	324	1,023
6	W. Lilac Road	Street “F”	Covey Lane	55.6	49.2	52.6	58	2	6	20	63	200	631
7	W. Lilac Road	Covey Lane	Circle R Drive	57.8	50.7	53.8	60	3	10	30	95	302	955
8	Circle R Drive	Mountain Ridge Road	Lilac Road	58.3	51.1	54.3	60	3	11	34	107	339	1,072
9	Old Castle Road	Old Highway 395	W. Lilac Road	63.0	55.8	58.9	65	10	32	100	316	1,000	3,162
10	Olive Hill Road	Shamrock Road	SR-76	59.9	52.8	55.9	62	5	15	49	155	490	1,549
11	Camino Del Rey	SR-76	Old River Road	64.4	57.2	60.3	66	14	44	138	437	1,380	4,365
12	Camino Del Rey	Old River Road	W. Lilac Road	64.3	57.2	60.3	66	13	43	135	427	1,349	4,266
13	Camino Del Rey	W. Lilac Road	Camino Del Cielo	62.8	55.7	58.8	65	10	31	98	309	977	3,090
14	Camino Del Rey	Camino Del Cielo	Old Highway 395	61.5	54.3	57.4	64	7	22	71	224	708	2,239
15	Gopher Canyon Road	E. Vista Way	I-15 SB Ramps	66.5	59.4	62.5	69	22	71	224	708	2,239	7,079
16	Gopher Canyon Road	I-15 SB Ramps	I-15 NB Ramps	65.8	58.6	61.7	68	19	60	191	603	1,905	6,026
17	Gopher Canyon Road	I-15 NB Ramps	Old Highway 395	62.6	56.9	60.7	65	11	35	110	347	1,096	3,467
18	Circle R Drive	Old Highway 395	Mountain Ridge Road	60.2	53.8	57.2	63	6	18	58	182	575	1,820
19	Circle R Drive	Mountain Ridge Road	W. Lilac Road	58.3	51.1	54.3	60	3	11	34	107	339	1,072
20	Old Castle Road	Old Highway 395	Lilac Road	63.0	55.8	58.9	65	10	32	100	316	1,000	3,162
21	E. Vista Way	SR-76	Gopher Canyon Road	66.4	59.2	62.4	68	22	69	219	692	2,188	6,918
22	E. Vista Way	Gopher Canyon Road	Osborne Street	67.8	60.7	63.8	70	30	95	302	955	3,020	9,550
23	Old River Road	SR-76	Camino Del Rey	59.8	53.3	56.7	62	5	16	51	162	513	1,622
24	Champagne Boulevard	Old Castle Road	Lawrence Welk Drive	59.5	53.1	56.5	62	5	15	49	155	490	1,549
25	Pankey Road	Pala Mesa Drive	SR-76	41.5	35.0	38.5	44	0	0	1	2	8	25
26	Lilac Road	Couser Canyon Road	W. Lilac Road	54.5	48.0	51.4	57	2	5	15	48	151	479
27	Lilac Road	W. Lilac Road	Old Castle Road	58.8	52.3	55.7	61	4	13	41	129	407	1,288
28	Lilac Road	Old Castle Road	Anthony Road	63.1	56.6	60.0	65	11	35	110	347	1,096	3,467

29	Lilac Road	Anthony Road	Betsworth Road	62.8	56.3	59.7	65	10	32	102	324	1,023	3,236
30	Lilac Road	Betsworth Road	Valley Center Road	63.1	56.6	60.1	66	11	35	112	355	1,122	3,548
31	Valley Center Road	Woods Valley Road	Lilac Road	66.4	59.9	63.3	69	23	74	234	741	2,344	7,413
32	Valley Center Road	Lilac Road	Miller Road	67.0	60.5	63.9	69	27	85	269	851	2,692	8,511
33	Valley Center Road	Miller Road	Cole Grade Road	66.6	60.2	63.6	69	25	79	251	794	2,512	7,943
34	Valley Center Road	Cole Grade Road	Vesper Road	63.7	57.3	60.7	66	13	41	129	407	1,288	4,074
35	Miller Road	Misty Oak Road	Valley Center Road	54.8	48.3	51.7	57	2	5	16	51	162	513
36	Cole Grade Road	Fruitvale Road	Valley Center Road	63.4	56.9	60.4	66	12	37	117	372	1,175	3,715
37	Old Highway 395	Pala Mesa Drive	SR-76	64.2	55.9	58.5	66	12	37	117	372	1,175	3,715
38	Old Highway 395	SR-76	E. Dulin Road	62.5	55.3	58.4	65	9	28	89	282	891	2,818
39	Old Highway 395	E. Dulin Road	W. Lilac Road	63.6	56.4	59.5	66	11	36	115	363	1,148	3,631
40	Old Highway 395	W. Lilac Road	I-15 SB Ramps	61.9	56.2	60.0	65	10	30	95	302	955	3,020
41	Old Highway 395	I-15 SB Ramps	I-15 NB Ramps	61.8	55.3	58.7	64	8	26	81	257	813	2,570
42	Old Highway 395	I-15 NB Ramps	Camino Del Rey	58.7	52.2	55.6	61	4	13	40	126	398	1,259
43	Old Highway 395	Camino Del Rey	Circle R Drive	61.6	55.1	58.5	64	8	25	78	245	776	2,455
44	Old Highway 395	Circle R Drive	Gopher Canyon Road	64.0	57.5	60.9	66	13	43	135	427	1,349	4,266
45	Old Highway 395	Gopher Canyon Road	Old Castle Road	62.6	56.1	59.6	65	10	32	100	316	1,000	3,162
46	I-15	Riverside County Boundary	Old Highway 395	80.5	71.2	73.3	82	468	1,479	4,677	14,791	46,774	147,911
47	I-15	Old Highway 395 to SR-76	SR-76	80.5	71.2	73.3	82	468	1,479	4,677	14,791	46,774	147,911
48	I-15	SR-76 to Old Highway 395	Old Highway 395	79.7	70.5	72.6	81	389	1,230	3,890	12,303	38,905	123,027
49	I-15	Old Highway 395	Gopher Canyon Road	81.0	71.9	79.0	83	692	2,188	6,918	21,878	69,183	218,776
50	I-15	Gopher Canyon Road	Deer Springd Road	81.3	72.2	79.2	84	741	2,344	7,413	23,442	74,131	234,423
51	I-15	Deer Springs Road	Centre City Parkway	81.3	72.2	79.2	84	741	2,344	7,413	23,442	74,131	234,423
52	I-15	Centre City Parkway	El Norte Parkway	81.0	72.0	79.0	83	692	2,188	6,918	21,878	69,183	218,776
53	I-15	El Norte Parkway	SR-78	81.6	72.5	79.5	84	794	2,512	7,943	25,119	79,433	251,189
54	I-15	SR-78	W Valley Parkway	83.3	74.3	81.3	86	1,175	3,715	11,749	37,154	117,490	371,535
55	I-15	W Valley Parkway	Auto Parkway	83.0	74.0	81.0	85	1,096	3,467	10,965	34,674	109,648	346,737
56	I-15	Auto Parkway	W Citracado Parkway	82.8	73.8	80.8	85	1,072	3,388	10,715	33,884	107,152	338,844
57	I-15	W Citracado Parkway	Via Rancho Parkway	83.4	74.3	81.4	86	1,202	3,802	12,023	38,019	120,226	380,189
58	I-15	Via Rancho Parkway	Bernardo Drive	83.4	74.4	81.4	86	1,230	3,890	12,303	38,905	123,027	389,045
59	I-15	Bernardo Drive	Rancho Bernardo Road	83.5	74.4	81.5	86	1,230	3,890	12,303	38,905	123,027	389,045
60	I-15	Rancho Bernardo Road	Bernardo Center Drive	83.7	74.6	81.6	86	1,288	4,074	12,882	40,738	128,825	407,380
61	I-15	Bernardo Center Drive	Camino Del Norte	83.8	74.7	81.7	86	1,318	4,169	13,183	41,687	131,826	416,869
62	Lilac Hills Ranch Road	Phase 3	Phase 4	57.5	51.2	59.6	62	5	16	51	162	513	1,622

FHWA RD-77-108

Traffic Noise Prediction Model

Data Input Sheet

Project Name : LHR SP
Project Number : 6153
Modeled Condition : Existing + Cumulative

Surface Refelction: CNEL
Assessment Metric: Soft
Peak ratio to ADT: 10.00
Traffic Desc. (Peak or ADT) : ADT

Segment	Roadway	Segment From	Segment To	Traffic Vol.	Speed (Mph)	Distance to CL	% Autos	%MT	% HT	Day %
1	E. Dulin Road	Old Highway 395	SR-76	7,330	55	100	95.25	2.75	2.00	78.00
2	W. Lilac Road	Camino Del Rey	Camino Del Cielo	3,330	55	100	95.25	2.75	2.00	78.00
3	W. Lilac Road	Camino Del Cielo	Old Highway 395	3,530	40	100	95.25	2.75	2.00	78.00
4	W. Lilac Road	Old Highway 395	Main Street	13,480	40	100	95.25	2.75	2.00	78.00
5	W. Lilac Road	Main Street	Street “F”	3,110	40	100	95.25	2.75	2.00	78.00
6	W. Lilac Road	Street “F”	Covey Lane	1,870	40	100	95.25	2.75	2.00	78.00
7	W. Lilac Road	Covey Lane	Circle R Drive	2,510	45	100	95.25	2.75	2.00	78.00
8	W. Lilac Road	Circle R Drive	Lilac Road	3,510	45	100	95.25	2.75	2.00	78.00
9	Camino Del Cielo	Camino Del Rey	W. Lilac Road	980	25	100	95.25	2.75	2.00	78.00
10	Olive Hill Road	Shamrock Road	SR-76	4,410	45	100	95.25	2.75	2.00	78.00
11	Camino Del Rey	SR-76	Old River Road	10,300	45	100	95.25	2.75	2.00	78.00
12	Camino Del Rey	Old River Road	W. Lilac Road	11,960	45	100	95.25	2.75	2.00	78.00
13	Camino Del Rey	W. Lilac Road	Camino Del Cielo	9,550	45	100	95.25	2.75	2.00	78.00
14	Camino Del Rey	Camino Del Cielo	Old Highway 395	5,600	45	100	95.25	2.75	2.00	78.00
15	Gopher Canyon Road	E. Vista Way	I-15 SB Ramps	16,270	45	100	95.25	2.75	2.00	78.00
16	Gopher Canyon Road	I-15 SB Ramps	I-15 NB Ramps	18,340	45	100	95.25	2.75	2.00	78.00
17	Gopher Canyon Road	I-15 NB Ramps	Old Highway 395	18,160	35	100	95.25	2.75	2.00	78.00
18	Circle R Drive	Old Highway 395	Mountain Ridge Road	6,720	40	100	95.25	2.75	2.00	78.00
19	Circle R Drive	Mountain Ridge Road	W. Lilac Road	2,480	45	100	95.25	2.75	2.00	78.00
20	Old Castle Road	Old Highway 395	Lilac Road	10,380	45	100	95.25	2.75	2.00	78.00
21	E. Vista Way	SR-76	Gopher Canyon Road	20,520	45	100	95.25	2.75	2.00	78.00
22	E. Vista Way	Gopher Canyon Road	Osborne Street	26,990	45	100	95.25	2.75	2.00	78.00
23	Old River Road	SR-76	Camino Del Rey	4,790	40	100	95.25	2.75	2.00	78.00
24	Champagne Boulevard	Old Castle Road	Lawrence Welk Drive	7,770	40	100	95.25	2.75	2.00	78.00
25	Pankey Road	Pala Mesa Drive	SR-76	16,520	40	100	95.25	2.75	2.00	78.00
26	Lilac Road	Couser Canyon Road	W. Lilac Road	1,970	40	100	95.25	2.75	2.00	78.00
27	Lilac Road	W. Lilac Road	Old Castle Road	3,830	40	100	95.25	2.75	2.00	78.00
28	Lilac Road	Old Castle Road	Anthony Road	11,590	40	100	95.25	2.75	2.00	78.00

29	Lilac Road	Anthony Road	Betsworth Road	10,760	40	100	95.25	2.75	2.00	78.00
30	Lilac Road	Betsworth Road	Valley Center Road	11,920	40	100	95.25	2.75	2.00	78.00
31	Valley Center Road	Woods Valley Road	Lilac Road	24,280	40	100	95.25	2.75	2.00	78.00
32	Valley Center Road	Lilac Road	Miller Road	27,000	40	100	95.25	2.75	2.00	78.00
33	Valley Center Road	Miller Road	Cole Grade Road	24,950	40	100	95.25	2.75	2.00	78.00
34	Valley Center Road	Cole Grade Road	Vesper Road	12,760	40	100	95.25	2.75	2.00	78.00
35	Miller Road	Misty Oak Road	Valley Center Road	2,280	40	100	95.25	2.75	2.00	78.00
36	Cole Grade Road	Fruitvale Road	Valley Center Road	16,650	40	100	95.25	2.75	2.00	78.00
37	Old Highway 395	Pala Mesa Drive	SR-76	11,230	55	100	95.25	2.75	2.00	78.00
38	Old Highway 395	SR-76	E. Dulin Road	9,890	45	100	95.25	2.75	2.00	78.00
39	Old Highway 395	E. Dulin Road	W. Lilac Road	12,780	45	100	95.25	2.75	2.00	78.00
40	Old Highway 395	W. Lilac Road	I-15 SB Ramps	14,060	35	100	95.25	2.75	2.00	78.00
41	Old Highway 395	I-15 SB Ramps	I-15 NB Ramps	11,100	40	100	95.25	2.75	2.00	78.00
42	Old Highway 395	I-15 NB Ramps	Camino Del Rey	6,820	40	100	95.25	2.75	2.00	78.00
43	Old Highway 395	Camino Del Rey	Circle R Drive	9,520	40	100	95.25	2.75	2.00	78.00
44	Old Highway 395	Circle R Drive	Gopher Canyon Road	15,390	40	100	95.25	2.75	2.00	78.00
45	Old Highway 395	Gopher Canyon Road	Old Castle Road	10,040	40	100	95.25	2.75	2.00	78.00
46	I-15	Riverside County Boundary	Old Highway 395	202,880	65	100	95.25	2.75	2.00	78.00
47	I-15	Old Highway 395 to SR-76	SR-76	238,620	65	100	95.25	2.75	2.00	78.00
48	I-15	SR-76 to Old Highway 395	Old Highway 395	169,420	65	100	95.25	2.75	2.00	78.00
49	I-15	Old Highway 395	Gopher Canyon Road	167,300	65	100	91.03	2.75	6.22	65.00
50	I-15	Gopher Canyon Road	Deer Springd Road	166,620	65	100	91.03	2.75	6.22	65.00
51	I-15	Deer Springs Road	Centre City Parkway	166,030	65	100	91.03	2.75	6.22	65.00
52	I-15	Centre City Parkway	El Norte Parkway	157,230	65	100	91.03	2.75	6.22	65.00
53	I-15	El Norte Parkway	SR-78	171,220	65	100	91.03	2.75	6.22	65.00
54	I-15	SR-78	W Valley Parkway	216,870	65	100	91.03	2.75	6.22	65.00
55	I-15	W Valley Parkway	Auto Parkway	199,490	65	100	91.03	2.75	6.22	65.00
56	I-15	Auto Parkway	W Citracado Parkway	191,330	65	100	91.03	2.75	6.22	65.00
57	I-15	W Citracado Parkway	Via Rancho Parkway	208,340	65	100	91.03	2.75	6.22	65.00
58	I-15	Via Rancho Parkway	Bernardo Drive	238,480	65	100	91.03	2.75	6.22	65.00
59	I-15	Bernardo Drive	Rancho Bernardo Road	213,610	65	100	91.03	2.75	6.22	65.00
60	I-15	Rancho Bernardo Road	Bernardo Center Drive	215,140	65	100	91.03	2.75	6.22	65.00
61	I-15	Bernardo Center Drive	Camino Del Norte	216,170	65	100	91.03	2.75	6.22	65.00
62	Lilac Hills Ranch Road	Phase 3	Phase 4	2,260	40	100	91.03	2.75	6.22	65.00

FHWA RD-77-108

Traffic Noise Prediction Model

Predicted Noise Levels

Project Name : LHR SP
Project Number : 6153
Modeled Condition : Existing + Cumulative
Assessment Metric: Soft

		Segment		Noise Levels, dBA Soft				Distance to Traffic		
Segment	Roadway	From	To	Auto	MT	HT	Total	75 dB	70 dB	65 dB
1	E. Dulin Road	Old Highway 395	SR-76	65.7	57.4	59.9	67	30	65	140
2	W. Lilac Road	Camino Del Rey	Camino Del Cielo	62.3	54.0	56.5	64	18	39	83
3	W. Lilac Road	Camino Del Cielo	Old Highway 395	58.5	52.1	55.5	61	11	25	53
4	W. Lilac Road	Old Highway 395	Main Street	64.3	57.9	61.3	67	28	60	130
5	W. Lilac Road	Main Street	Street “F”	58.0	51.5	55.0	60	10	23	49
6	W. Lilac Road	Street “F”	Covey Lane	55.8	49.3	52.7	58	7	16	35
7	W. Lilac Road	Covey Lane	Circle R Drive	58.5	51.4	54.5	61	11	23	50
8	Circle R Drive	Mountain Ridge Road	Lilac Road	58.5	51.3	54.4	61	11	23	50
9	Old Castle Road	Old Highway 395	W. Lilac Road	64.7	57.5	60.7	67	28	60	130
10	Olive Hill Road	Shamrock Road	SR-76	61.0	53.8	56.9	63	16	34	74
11	Camino Del Rey	SR-76	Old River Road	64.7	57.5	60.6	67	28	60	130
12	Camino Del Rey	Old River Road	W. Lilac Road	65.3	58.2	61.3	67	31	66	142
13	Camino Del Rey	W. Lilac Road	Camino Del Cielo	64.3	57.2	60.3	66	26	57	122
14	Camino Del Rey	Camino Del Cielo	Old Highway 395	62.0	54.9	58.0	64	18	40	86
15	Gopher Canyon Road	E. Vista Way	I-15 SB Ramps	66.6	59.5	62.6	69	37	81	174
16	Gopher Canyon Road	I-15 SB Ramps	I-15 NB Ramps	67.2	60.0	63.1	69	41	88	191
17	Gopher Canyon Road	I-15 NB Ramps	Old Highway 395	64.0	58.3	62.1	67	28	61	132
18	Circle R Drive	Old Highway 395	Mountain Ridge Road	61.3	54.9	58.3	64	18	38	82
19	Circle R Drive	Mountain Ridge Road	W. Lilac Road	58.5	51.3	54.4	61	11	23	50
20	Old Castle Road	Old Highway 395	Lilac Road	64.7	57.5	60.7	67	28	60	130
21	E. Vista Way	SR-76	Gopher Canyon Road	67.6	60.5	63.6	70	44	95	206
22	E. Vista Way	Gopher Canyon Road	Osborne Street	68.8	61.7	64.8	71	52	113	244
23	Old River Road	SR-76	Camino Del Rey	59.9	53.4	56.8	62	14	30	65
24	Champagne Boulevard	Old Castle Road	Lawrence Welk Drive	62.0	55.5	58.9	64	19	42	90
25	Pankey Road	Pala Mesa Drive	SR-76	65.2	58.8	62.2	68	32	69	149
26	Lilac Road	Couser Canyon Road	W. Lilac Road	56.0	49.5	53.0	58	8	17	36
27	Lilac Road	W. Lilac Road	Old Castle Road	58.9	52.4	55.9	61	12	26	56
28	Lilac Road	Old Castle Road	Anthony Road	63.7	57.2	60.7	66	26	55	118

29	Lilac Road	Anthony Road	Betsworth Road	63.4	56.9	60.3	66	24	52	111
30	Lilac Road	Betsworth Road	Valley Center Road	63.8	57.3	60.8	66	26	56	120
31	Valley Center Road	Woods Valley Road	Lilac Road	66.9	60.4	63.9	69	42	90	193
32	Valley Center Road	Lilac Road	Miller Road	67.4	60.9	64.3	70	44	95	206
33	Valley Center Road	Miller Road	Cole Grade Road	67.0	60.6	64.0	69	42	91	196
34	Valley Center Road	Cole Grade Road	Vesper Road	64.1	57.6	61.1	67	27	58	126
35	Miller Road	Misty Oak Road	Valley Center Road	56.6	50.2	53.6	59	9	18	40
36	Cole Grade Road	Fruitvale Road	Valley Center Road	65.3	58.8	62.2	68	32	69	149
37	Old Highway 395	Pala Mesa Drive	SR-76	67.5	59.2	61.8	69	40	86	185
38	Old Highway 395	SR-76	E. Dulin Road	64.5	57.3	60.4	67	27	58	126
39	Old Highway 395	E. Dulin Road	W. Lilac Road	65.6	58.4	61.6	68	32	69	149
40	Old Highway 395	W. Lilac Road	I-15 SB Ramps	62.9	57.2	61.0	66	24	52	111
41	Old Highway 395	I-15 SB Ramps	I-15 NB Ramps	63.5	57.0	60.5	66	25	53	115
42	Old Highway 395	I-15 NB Ramps	Camino Del Rey	61.4	54.9	58.4	64	18	39	83
43	Old Highway 395	Camino Del Rey	Circle R Drive	62.8	56.4	59.8	65	22	48	103
44	Old Highway 395	Circle R Drive	Gopher Canyon Road	64.9	58.5	61.9	67	31	66	142
45	Old Highway 395	Gopher Canyon Road	Old Castle Road	63.1	56.6	60.0	65	23	49	106
46	I-15	Riverside County Boundary	Old Highway 395	82.2	72.9	75.0	83.4	363	782	1,685
47	I-15	Old Highway 395 to SR-76	SR-76	82.9	73.6	75.7	84.1	404	871	1,876
48	I-15	SR-76 to Old Highway 395	Old Highway 395	81.4	72.2	74.3	82.6	321	692	1,491
49	I-15	Old Highway 395	Gopher Canyon Road	82.7	73.6	80.6	85	471	1,015	2,188
50	I-15	Gopher Canyon Road	Deer Springd Road	82.7	73.6	80.6	85	471	1,015	2,188
51	I-15	Deer Springs Road	Centre City Parkway	82.6	73.6	80.6	85	471	1,015	2,188
52	I-15	Centre City Parkway	El Norte Parkway	82.4	73.3	80.4	85	450	970	2,089
53	I-15	El Norte Parkway	SR-78	82.8	73.7	80.7	85	479	1,031	2,222
54	I-15	SR-78	W Valley Parkway	83.8	74.7	81.8	86	558	1,202	2,590
55	I-15	W Valley Parkway	Auto Parkway	83.4	74.4	81.4	86	533	1,148	2,474
56	I-15	Auto Parkway	W Citracado Parkway	83.3	74.2	81.2	86	517	1,113	2,399
57	I-15	W Citracado Parkway	Via Rancho Parkway	83.6	74.6	81.6	86	550	1,184	2,551
58	I-15	Via Rancho Parkway	Bernardo Drive	84.2	75.2	82.2	87	593	1,278	2,754
59	I-15	Bernardo Drive	Rancho Bernardo Road	83.7	74.7	81.7	86	558	1,202	2,590
60	I-15	Rancho Bernardo Road	Bernardo Center Drive	83.8	74.7	81.7	86	558	1,202	2,590
61	I-15	Bernardo Center Drive	Camino Del Norte	83.8	74.7	81.7	86	558	1,202	2,590
62	Lilac Hills Ranch Road	Phase 3	Phase 4	57.9	51.6	60.0	63	15	32	68

Eve %	Night %	K-Factor
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	
8.00	14.00	

8.00	14.00
8.00	14.00
8.00	14.00
8.00	14.00
8.00	14.00
8.00	14.00
8.00	14.00
8.00	14.00
8.00	14.00
8.00	14.00
8.00	14.00
8.00	14.00
8.00	14.00
8.00	14.00
8.00	14.00
8.00	14.00
8.00	14.00
8.00	14.00
8.00	14.00
8.00	14.00
8.00	14.00
10.00	25.00
10.00	25.00
10.00	25.00
10.00	25.00
10.00	25.00
10.00	25.00
10.00	25.00
10.00	25.00
10.00	25.00
10.00	25.00
10.00	25.00
10.00	25.00
10.00	25.00
10.00	25.00
10.00	25.00

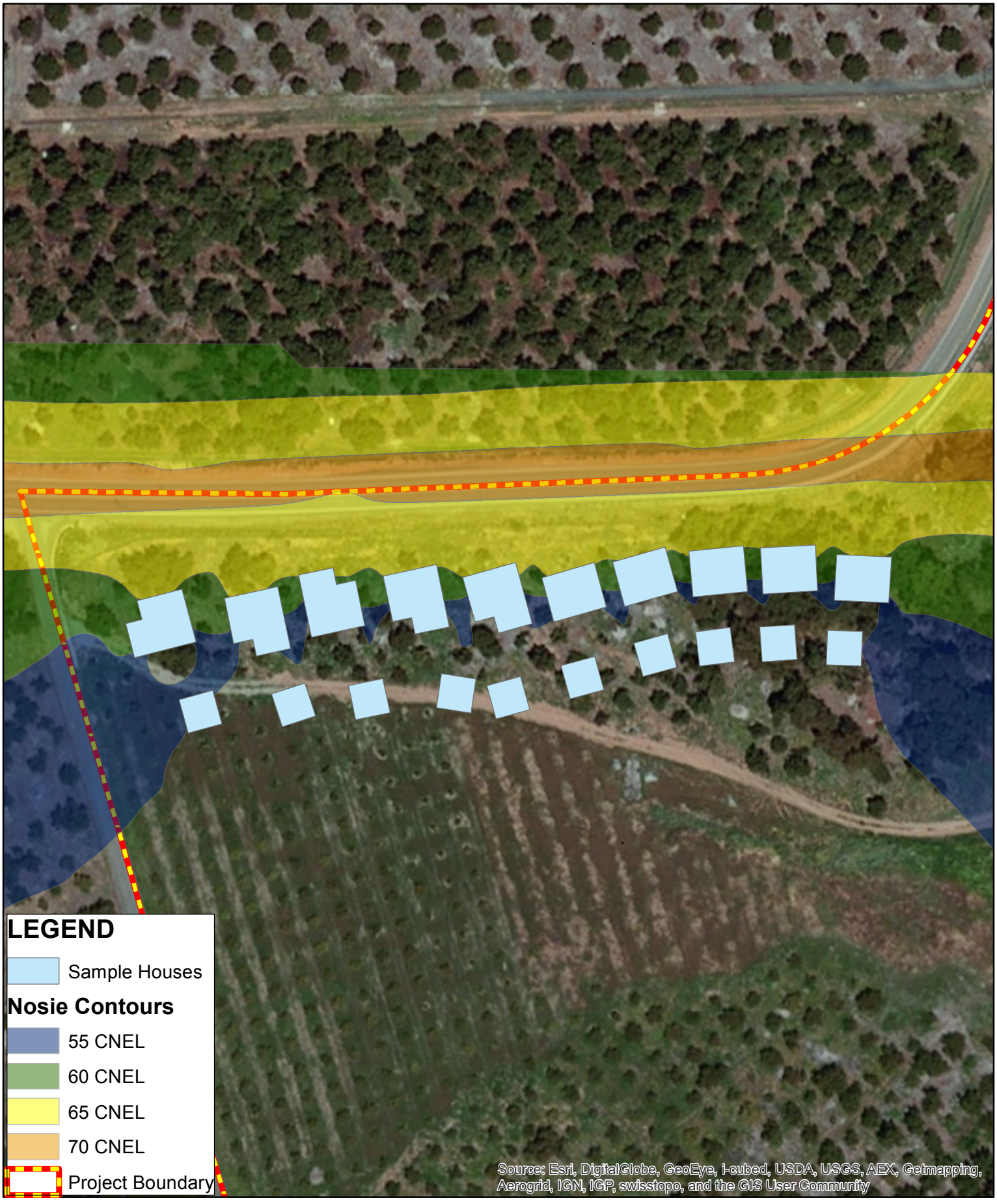
Noise Level Contours, Feet		
60 dB	55 dB	50 dB
302	651	1,402
179	386	832
115	247	533
280	603	1,298
105	226	486
75	161	347
108	233	501
108	233	501
280	603	1,298
158	341	736
280	603	1,298
307	661	1,423
263	567	1,221
185	398	858
374	807	1,738
411	884	1,905
284	612	1,318
176	380	819
108	233	501
280	603	1,298
443	955	2,057
525	1,131	2,436
140	302	651
193	417	898
321	692	1,491
78	169	363
120	259	558
255	550	1,184

240	517	1,113
259	558	1,202
417	898	1,935
443	955	2,057
423	912	1,965
271	584	1,259
86	185	398
321	692	1,491
398	858	1,848
271	584	1,259
321	692	1,491
240	517	1,113
247	533	1,148
179	386	832
222	479	1,031
307	661	1,423
229	494	1,063
3,631	7,822	16,853
4,043	8,710	18,764
3,211	6,918	14,905
4,713	10,155	21,878
4,713	10,155	21,878
4,713	10,155	21,878
4,501	9,698	20,893
4,786	10,312	22,216
5,580	12,023	25,902
5,329	11,482	24,736
5,168	11,134	23,988
5,495	11,839	25,507
5,934	12,784	27,542
5,580	12,023	25,902
5,580	12,023	25,902
5,580	12,023	25,902
147	316	681

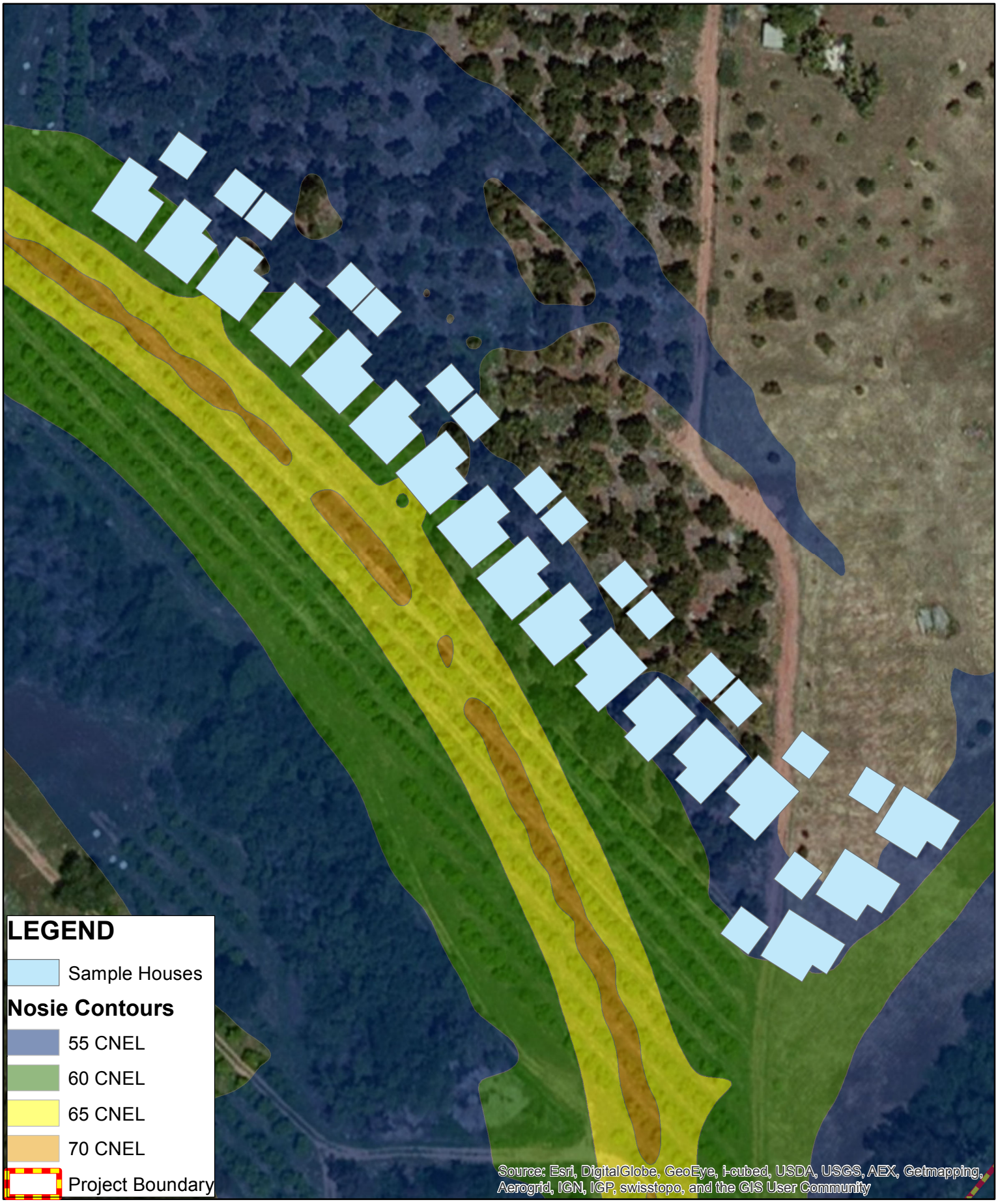
ATTACHMENT 3

~~TNM~~On-site Traffic Modeling Input/Output ~~Sheets~~Data

THIS PAGE IS INTENTIONALLY BLANK.



Appendix Figure 1
Noise Mitigation Evaluation - West Lilac Road



Appendix Figure 2
Noise Mitigation Evaluation Main Street

Stationing	Traffic values ADT	Vehicles type	Vehicle name	Control day	Constr. Speed	Affect. device	Gradient
km	Veh/24h	Road surface	Min / Max Veh/h km/h	km/h	%		%
Main Street - W 1	Traffic direction:	In entry direction					
0+000	22128	Total	- 922 -	none	-	-	Average (of DGAC and PCC) -5.4 / -1.4
0+000	22128	Automobiles	- 862 48	none	-	-	Average (of DGAC and PCC) -5.4 / -1.4
0+000	22128	Medium trucks	- 26 48	none	-	-	Average (of DGAC and PCC) -5.4 / -1.4
0+000	22128	Heavy trucks	- 19 48	none	-	-	Average (of DGAC and PCC) -5.4 / -1.4
0+000	22128	Buses	- 5 48	none	-	-	Average (of DGAC and PCC) -5.4 / -1.4
0+000	22128	Motorcycles	- 10 48	none	-	-	Average (of DGAC and PCC) -5.4 / -1.4
0+000	22128	Auxiliary Vehicle	- -	-	none	-	- Average (of DGAC and PCC) -5.4 / -1.4
0+356	-		- -	-	-	-	-
Main Street - W 2	Traffic direction:	In entry direction					
0+000	19080	Total	- 795 -	none	-	-	Average (of DGAC and PCC) -4.1 / 0.0
0+000	19080	Automobiles	- 745 48	none	-	-	Average (of DGAC and PCC) -4.1 / 0.0
0+000	19080	Medium trucks	- 22 48	none	-	-	Average (of DGAC and PCC) -4.1 / 0.0
0+000	19080	Heavy trucks	- 16 48	none	-	-	Average (of DGAC and PCC) -4.1 / 0.0
0+000	19080	Buses	- 4 48	none	-	-	Average (of DGAC and PCC) -4.1 / 0.0
0+000	19080	Motorcycles	- 8 48	none	-	-	Average (of DGAC and PCC) -4.1 / 0.0
0+000	19080	Auxiliary Vehicle	- -	-	none	-	- Average (of DGAC and PCC) -4.1 / 0.0
0+260	-		- -	-	-	-	-
Main Street - E 1	Traffic direction:	In entry direction					
0+000	7152	Total	- 298 -	none	-	-	Average (of DGAC and PCC) 16.6
0+000	7152	Automobiles	- 278 48	none	-	-	Average (of DGAC and PCC) 16.6
0+000	7152	Medium trucks	- 9 48	none	-	-	Average (of DGAC and PCC) 16.6
0+000	7152	Heavy trucks	- 6 48	none	-	-	Average (of DGAC and PCC) 16.6
0+000	7152	Buses	- 2 48	none	-	-	Average (of DGAC and PCC) 16.6
0+000	7152	Motorcycles	- 3 48	none	-	-	Average (of DGAC and PCC) 16.6
0+000	7152	Auxiliary Vehicle	- -	-	none	-	- Average (of DGAC and PCC) 16.6
0+082	-		- -	-	-	-	-
Main Street - E 2	Traffic direction:	In entry direction					
0+000	2568	Total	- 107 -	none	-	-	Average (of DGAC and PCC) 5.2
0+000	2568	Automobiles	- 98 48	none	-	-	Average (of DGAC and PCC) 5.2
0+000	2568	Medium trucks	- 3 48	none	-	-	Average (of DGAC and PCC) 5.2
0+000	2568	Heavy trucks	- 3 48	none	-	-	Average (of DGAC and PCC) 5.2
0+000	2568	Buses	- 1 48	none	-	-	Average (of

```
DGAC and PCC)   5.2
0+000   2568    Motorcycles     -       2       48      none    -       -
Average (of DGAC and PCC)       5.2
0+000   2568    Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       5.2
0+144   -                                       -       -       -       -       -
   Main Street - E 3      Traffic direction:    In entry direction
0+000   2568    Total   -       107     -       none    -       -       Average (of
DGAC and PCC)   -1.9 / 0.1
0+000   2568    Automobiles     -       98      48      none    -       -
Average (of DGAC and PCC)       -1.9 / 0.1
0+000   2568    Medium trucks   -       3       48      none    -       -
Average (of DGAC and PCC)       -1.9 / 0.1
0+000   2568    Heavy trucks    -       3       48      none    -       -
Average (of DGAC and PCC)       -1.9 / 0.1
0+000   2568    Buses   -       1       48      none    -       -       Average (of
DGAC and PCC)   -1.9 / 0.1
0+000   2568    Motorcycles     -       2       48      none    -       -
Average (of DGAC and PCC)       -1.9 / 0.1
0+000   2568    Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -1.9 / 0.1
0+046   -                                       -       -       -       -       -
   Main Street - North W      Traffic direction:    In entry direction
0+000   9552    Total   -       398     -       none    -       -       Average (of
DGAC and PCC)   -6.7 / 24.0
0+000   9552    Automobiles     -       373     48      none    -       -
Average (of DGAC and PCC)       -6.7 / 24.0
0+000   9552    Medium trucks   -       11      48      none    -       -
Average (of DGAC and PCC)       -6.7 / 24.0
0+000   9552    Heavy trucks    -       8       48      none    -       -
Average (of DGAC and PCC)       -6.7 / 24.0
0+000   9552    Buses   -       2       48      none    -       -       Average (of
DGAC and PCC)   -6.7 / 24.0
0+000   9552    Motorcycles     -       4       48      none    -       -
Average (of DGAC and PCC)       -6.7 / 24.0
0+000   9552    Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -6.7 / 24.0
0+330   -                                       -       -       -       -       -
   Main Street - North E      Traffic direction:    In entry direction
0+000   3600    Total   -       150     -       none    -       -       Average (of
DGAC and PCC)   0.0 / 9.9
0+000   3600    Automobiles     -       139     48      none    -       -
Average (of DGAC and PCC)       0.0 / 9.9
0+000   3600    Medium trucks   -       5       48      none    -       -
Average (of DGAC and PCC)       0.0 / 9.9
0+000   3600    Heavy trucks    -       3       48      none    -       -
Average (of DGAC and PCC)       0.0 / 9.9
0+000   3600    Buses   -       1       48      none    -       -       Average (of
DGAC and PCC)   0.0 / 9.9
0+000   3600    Motorcycles     -       2       48      none    -       -
Average (of DGAC and PCC)       0.0 / 9.9
0+000   3600    Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       0.0 / 9.9
0+231   -                                       -       -       -       -       -
   Main Street - South W      Traffic direction:    In entry direction
0+000   9552    Total   -       398     -       none    -       -       Average (of
DGAC and PCC)   -6.6 / 10.0
0+000   9552    Automobiles     -       373     48      none    -       -
Average (of DGAC and PCC)       -6.6 / 10.0
0+000   9552    Medium trucks   -       11      48      none    -       -
Average (of DGAC and PCC)       -6.6 / 10.0
0+000   9552    Heavy trucks    -       8       48      none    -       -
Average (of DGAC and PCC)       -6.6 / 10.0
```

```
0+000   9552    Buses   -       2       48      none    -       -       Average (of
DGAC and PCC)   -6.6 / 10.0
0+000   9552    Motorcycles     -       4       48      none    -       -
Average (of DGAC and PCC)       -6.6 / 10.0
0+000   9552    Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -6.6 / 10.0
0+396   -                                       -       -       -       -       -
   Main Street - South E      Traffic direction:    In entry direction
0+000   3600    Total   -       150     -       none    -       -       Average (of
DGAC and PCC)   0.0 / 15.7
0+000   3600    Automobiles     -       139     48      none    -       -
Average (of DGAC and PCC)       0.0 / 15.7
0+000   3600    Medium trucks   -       5       48      none    -       -
Average (of DGAC and PCC)       0.0 / 15.7
0+000   3600    Heavy trucks    -       3       48      none    -       -
Average (of DGAC and PCC)       0.0 / 15.7
0+000   3600    Buses   -       1       48      none    -       -       Average (of
DGAC and PCC)   0.0 / 15.7
0+000   3600    Motorcycles     -       2       48      none    -       -
Average (of DGAC and PCC)       0.0 / 15.7
0+000   3600    Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       0.0 / 15.7
0+265   -                                       -       -       -       -       -
   O Street      Traffic direction:    In entry direction
0+000   -                                       -       -       -       -       -3.5
/ -0.1
0+314   -                                       -       -       -       -       -
   C Street - W 2      Traffic direction:    In entry direction
0+000   -                                       -       -       -       -       3.1
/ 6.0
0+223   -                                       -       -       -       -       -
   C Street - W 1      Traffic direction:    In entry direction
0+000   -                                       -       -       -       -       -9.9
/ -3.8
0+144   -                                       -       -       -       -       -
   C Street - E      Traffic direction:    In entry direction
0+000   3864    Total   -       161     -       none    -       -       Average (of
DGAC and PCC)   0.4 / 12.4
0+000   3864    Automobiles     -       149     40      none    -       -
Average (of DGAC and PCC)       0.4 / 12.4
0+000   3864    Medium trucks   -       5       40      none    -       -
Average (of DGAC and PCC)       0.4 / 12.4
0+000   3864    Heavy trucks    -       4       40      none    -       -
Average (of DGAC and PCC)       0.4 / 12.4
0+000   3864    Buses   -       1       40      none    -       -       Average (of
DGAC and PCC)   0.4 / 12.4
0+000   3864    Motorcycles     -       2       40      none    -       -
Average (of DGAC and PCC)       0.4 / 12.4
0+000   3864    Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       0.4 / 12.4
0+181   -                                       -       -       -       -       -
   Z Street      Traffic direction:    In entry direction
0+000   3864    Total   -       161     -       none    -       -       Average (of
DGAC and PCC)   -5.5 / 7.0
0+000   3864    Automobiles     -       149     40      none    -       -
Average (of DGAC and PCC)       -5.5 / 7.0
0+000   3864    Medium trucks   -       5       40      none    -       -
Average (of DGAC and PCC)       -5.5 / 7.0
0+000   3864    Heavy trucks    -       4       40      none    -       -
Average (of DGAC and PCC)       -5.5 / 7.0
0+000   3864    Buses   -       1       40      none    -       -       Average (of
DGAC and PCC)   -5.5 / 7.0
0+000   3864    Motorcycles     -       2       40      none    -       -
```

```
Average (of DGAC and PCC)       -5.5 / 7.0
0+000   3864    Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -5.5 / 7.0
0+682   -                                       -       -       -       -       -
   F Street      Traffic direction:    In entry direction
0+000   5976    Total   -       249     -       none    -       -       Average (of
DGAC and PCC)   -14.4 / 22.6
0+000   5976    Automobiles     -       232     40      none    -       -
Average (of DGAC and PCC)       -14.4 / 22.6
0+000   5976    Medium trucks   -       7       40      none    -       -
Average (of DGAC and PCC)       -14.4 / 22.6
0+000   5976    Heavy trucks    -       5       40      none    -       -
Average (of DGAC and PCC)       -14.4 / 22.6
0+000   5976    Buses   -       2       40      none    -       -       Average (of
DGAC and PCC)   -14.4 / 22.6
0+000   5976    Motorcycles     -       3       40      none    -       -
Average (of DGAC and PCC)       -14.4 / 22.6
0+000   5976    Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -14.4 / 22.6
0+909   -                                       -       -       -       -       -
   Lilac Hills Ranch Road - N 2      Traffic direction:    In entry direction
0+000   -                                       -       -       -       -
-14.1 / -8.6
0+137   -                                       -       -       -       -       -
   Lilac Hills Ranch Road - N 1      Traffic direction:    In entry direction
0+000   12768   Total   -       532     -       none    -       -       Average (of
DGAC and PCC)   4.2
0+000   12768   Automobiles     -       497     48      none    -       -
Average (of DGAC and PCC)       4.2
0+000   12768   Medium trucks   -       15      48      none    -       -
Average (of DGAC and PCC)       4.2
0+000   12768   Heavy trucks    -       11      48      none    -       -
Average (of DGAC and PCC)       4.2
0+000   12768   Buses   -       3       48      none    -       -       Average (of
DGAC and PCC)   4.2
0+000   12768   Motorcycles     -       6       48      none    -       -
Average (of DGAC and PCC)       4.2
0+000   12768   Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       4.2
0+095   -                                       -       -       -       -       -
   Lilac Hills Ranch Road - N      Traffic direction:    In entry direction
0+000   12768   Total   -       532     -       none    -       -       Average (of
DGAC and PCC)   -19.0 / 19.9
0+000   12768   Automobiles     -       497     48      none    -       -
Average (of DGAC and PCC)       -19.0 / 19.9
0+000   12768   Medium trucks   -       15      48      none    -       -
Average (of DGAC and PCC)       -19.0 / 19.9
0+000   12768   Heavy trucks    -       11      48      none    -       -
Average (of DGAC and PCC)       -19.0 / 19.9
0+000   12768   Buses   -       3       48      none    -       -       Average (of
DGAC and PCC)   -19.0 / 19.9
0+000   12768   Motorcycles     -       6       48      none    -       -
Average (of DGAC and PCC)       -19.0 / 19.9
0+000   12768   Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -19.0 / 19.9
0+907   -                                       -       -       -       -       -
   Lilac Hills Ranch Road      Traffic direction:    In entry direction
0+000   3288    Total   -       137     -       none    -       -       Average (of
DGAC and PCC)   -21.9 / 23.8
0+000   3288    Automobiles     -       127     48      none    -       -
Average (of DGAC and PCC)       -21.9 / 23.8
0+000   3288    Medium trucks   -       4       48      none    -       -
Average (of DGAC and PCC)       -21.9 / 23.8
```

0+000 3288 Heavy trucks - 3 48 none - - Average (of DGAC and PCC) -21.9 / 23.8
0+000 3288 Buses - 1 48 none - - Average (of DGAC and PCC) -21.9 / 23.8
0+000 3288 Motorcycles - 2 48 none - - Average (of DGAC and PCC) -21.9 / 23.8
0+000 3288 Auxiliary Vehicle - - - none - - Average (of DGAC and PCC) -21.9 / 23.8
0+765 3312 Total - 138 - none - - Average (of DGAC and PCC) -20.5 / 17.9
0+765 3312 Automobiles - 128 48 none - - Average (of DGAC and PCC) -20.5 / 17.9
0+765 3312 Medium trucks - 4 48 none - - Average (of DGAC and PCC) -20.5 / 17.9
0+765 3312 Heavy trucks - 2 48 none - - Average (of DGAC and PCC) -20.5 / 17.9
0+765 3312 Buses - 2 48 none - - Average (of DGAC and PCC) -20.5 / 17.9
0+765 3312 Motorcycles - 2 48 none - - Average (of DGAC and PCC) -20.5 / 17.9
0+765 3312 Auxiliary Vehicle - - - none - - Average (of DGAC and PCC) -20.5 / 17.9
2+223 - - - - - - -

Covey Lane Traffic direction: In entry direction

0+000 3384 Total - 141 - none - - Average (of DGAC and PCC) -1.1
0+000 3384 Automobiles - 131 48 none - - Average (of DGAC and PCC) -1.1
0+000 3384 Medium trucks - 4 48 none - - Average (of DGAC and PCC) -1.1
0+000 3384 Heavy trucks - 3 48 none - - Average (of DGAC and PCC) -1.1
0+000 3384 Buses - 1 48 none - - Average (of DGAC and PCC) -1.1
0+000 3384 Motorcycles - 2 48 none - - Average (of DGAC and PCC) -1.1
0+000 3384 Auxiliary Vehicle - - - none - - Average (of DGAC and PCC) -1.1
0+640 - - - - - - -

West Lilac Road - 1 Traffic direction: In entry direction

0+000 32400 Total - 1350 - none - - Average (of DGAC and PCC) -5.0 / 9.3
0+000 32400 Automobiles - 1264 48 none - - Average (of DGAC and PCC) -5.0 / 9.3
0+000 32400 Medium trucks - 38 48 none - - Average (of DGAC and PCC) -5.0 / 9.3
0+000 32400 Heavy trucks - 27 48 none - - Average (of DGAC and PCC) -5.0 / 9.3
0+000 32400 Buses - 7 48 none - - Average (of DGAC and PCC) -5.0 / 9.3
0+000 32400 Motorcycles - 14 48 none - - Average (of DGAC and PCC) -5.0 / 9.3
0+000 32400 Auxiliary Vehicle - - - none - - Average (of DGAC and PCC) -5.0 / 9.3
1+033 - - - - - - -

West Lilac Road - 3 Traffic direction: In entry direction

0+000 4536 Total - 189 - none - - Average (of DGAC and PCC) -12.5 / 43.3
0+000 4536 Automobiles - 176 48 none - - Average (of DGAC and PCC) -12.5 / 43.3
0+000 4536 Medium trucks - 6 48 none - - Average (of DGAC and PCC) -12.5 / 43.3
0+000 4536 Heavy trucks - 4 48 none - -

```
Average (of DGAC and PCC)       -12.5 / 43.3
0+000   4536    Buses   -       1       48      none    -       -       Average (of
DGAC and PCC)   -12.5 / 43.3
0+000   4536    Motorcycles     -       2       48      none    -       -
Average (of DGAC and PCC)       -12.5 / 43.3
0+000   4536    Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -12.5 / 43.3
0+638   4536    Total   -       189     -       none    -       -       Average (of
DGAC and PCC)   -7.4 / 11.0
0+638   4536    Automobiles     -       176     48      none    -       -
Average (of DGAC and PCC)       -7.4 / 11.0
0+638   4536    Medium trucks   -       6       48      none    -       -
Average (of DGAC and PCC)       -7.4 / 11.0
0+638   4536    Heavy trucks    -       4       48      none    -       -
Average (of DGAC and PCC)       -7.4 / 11.0
0+638   4536    Buses   -       1       48      none    -       -       Average (of
DGAC and PCC)   -7.4 / 11.0
0+638   4536    Motorcycles     -       2       48      none    -       -
Average (of DGAC and PCC)       -7.4 / 11.0
0+638   4536    Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -7.4 / 11.0
0+866   -                                       -       -       -       -       -
   West Lilac Road - 2      Traffic direction:    In entry direction
0+000   7536    Total   -       314     -       none    -       -       Average (of
DGAC and PCC)   -12.0 / 13.8
0+000   7536    Automobiles     -       292     48      none    -       -
Average (of DGAC and PCC)       -12.0 / 13.8
0+000   7536    Medium trucks   -       9       48      none    -       -
Average (of DGAC and PCC)       -12.0 / 13.8
0+000   7536    Heavy trucks    -       7       48      none    -       -
Average (of DGAC and PCC)       -12.0 / 13.8
0+000   7536    Buses   -       2       48      none    -       -       Average (of
DGAC and PCC)   -12.0 / 13.8
0+000   7536    Motorcycles     -       4       48      none    -       -
Average (of DGAC and PCC)       -12.0 / 13.8
0+000   7536    Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -12.0 / 13.8
1+378   -                                       -       -       -       -       -
   Rodriquez Road      Traffic direction:    In entry direction
0+000   7536    Total   -       314     -       none    -       -       Average (of
DGAC and PCC)   5.9
0+000   7536    Automobiles     -       292     48      none    -       -
Average (of DGAC and PCC)       5.9
0+000   7536    Medium trucks   -       9       48      none    -       -
Average (of DGAC and PCC)       5.9
0+000   7536    Heavy trucks    -       7       48      none    -       -
Average (of DGAC and PCC)       5.9
0+000   7536    Buses   -       2       48      none    -       -       Average (of
DGAC and PCC)   5.9
0+000   7536    Motorcycles     -       4       48      none    -       -
Average (of DGAC and PCC)       5.9
0+000   7536    Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       5.9
0+207   -                                       -       -       -       -       -
   West Lilac Road - 4      Traffic direction:    In entry direction
0+000   4536    Total   -       189     -       none    -       -       Average (of
DGAC and PCC)   -20.2 / 12.4
0+000   4536    Automobiles     -       176     48      none    -       -
Average (of DGAC and PCC)       -20.2 / 12.4
0+000   4536    Medium trucks   -       6       48      none    -       -
Average (of DGAC and PCC)       -20.2 / 12.4
0+000   4536    Heavy trucks    -       4       48      none    -       -
Average (of DGAC and PCC)       -20.2 / 12.4
```

```
0+000   4536    Buses   -       1       48      none    -       -       Average (of
DGAC and PCC)   -20.2 / 12.4
0+000   4536    Motorcycles     -       2       48      none    -       -
Average (of DGAC and PCC)       -20.2 / 12.4
0+000   4536    Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -20.2 / 12.4
0+917   6096    Total   -       254     -       none    -       -       Average (of
DGAC and PCC)   -7.7 / 19.7
0+917   6096    Automobiles     -       236     48      none    -       -
Average (of DGAC and PCC)       -7.7 / 19.7
0+917   6096    Medium trucks   -       7       48      none    -       -
Average (of DGAC and PCC)       -7.7 / 19.7
0+917   6096    Heavy trucks    -       6       48      none    -       -
Average (of DGAC and PCC)       -7.7 / 19.7
0+917   6096    Buses   -       2       48      none    -       -       Average (of
DGAC and PCC)   -7.7 / 19.7
0+917   6096    Motorcycles     -       3       48      none    -       -
Average (of DGAC and PCC)       -7.7 / 19.7
0+917   6096    Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -7.7 / 19.7
3+289   16176   Total   -       674     -       none    -       -       Average (of
DGAC and PCC)   -12.1 / 13.3
3+289   16176   Automobiles     -       630     48      none    -       -
Average (of DGAC and PCC)       -12.1 / 13.3
3+289   16176   Medium trucks   -       19      48      none    -       -
Average (of DGAC and PCC)       -12.1 / 13.3
3+289   16176   Heavy trucks    -       14      48      none    -       -
Average (of DGAC and PCC)       -12.1 / 13.3
3+289   16176   Buses   -       4       48      none    -       -       Average (of
DGAC and PCC)   -12.1 / 13.3
3+289   16176   Motorcycles     -       7       48      none    -       -
Average (of DGAC and PCC)       -12.1 / 13.3
3+289   16176   Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -12.1 / 13.3
4+592   6000    Total   -       250     -       none    -       -       Average (of
DGAC and PCC)   -37.1 / 13.8
4+592   6000    Automobiles     -       233     48      none    -       -
Average (of DGAC and PCC)       -37.1 / 13.8
4+592   6000    Medium trucks   -       7       48      none    -       -
Average (of DGAC and PCC)       -37.1 / 13.8
4+592   6000    Heavy trucks    -       5       48      none    -       -
Average (of DGAC and PCC)       -37.1 / 13.8
4+592   6000    Buses   -       2       48      none    -       -       Average (of
DGAC and PCC)   -37.1 / 13.8
4+592   6000    Motorcycles     -       3       48      none    -       -
Average (of DGAC and PCC)       -37.1 / 13.8
4+592   6000    Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -37.1 / 13.8
8+240   -                                       -       -       -       -       -
   Mountain Ridge Road      Traffic direction:    In entry direction
0+000   2064    Total   -       86      -       none    -       -       Average (of
DGAC and PCC)   1.8
0+000   2064    Automobiles     -       79      40      none    -       -
Average (of DGAC and PCC)       1.8
0+000   2064    Medium trucks   -       3       40      none    -       -
Average (of DGAC and PCC)       1.8
0+000   2064    Heavy trucks    -       2       40      none    -       -
Average (of DGAC and PCC)       1.8
0+000   2064    Buses   -       1       40      none    -       -       Average (of
DGAC and PCC)   1.8
0+000   2064    Motorcycles     -       1       40      none    -       -
Average (of DGAC and PCC)       1.8
0+000   2064    Auxiliary Vehicle       -       -       -       none    -       -
```

```
Average (of DGAC and PCC)       1.8
0+961   -                                       -       -       -       -       -
   395 S of W Lilac      Traffic direction:    In entry direction
0+000   33840   Total   -       1410    -       none    -       -       Average (of
DGAC and PCC)   -7.3 / 23.1
0+000   33840   Automobiles     -       1319    40      none    -       -
Average (of DGAC and PCC)       -7.3 / 23.1
0+000   33840   Medium trucks   -       39      40      none    -       -
Average (of DGAC and PCC)       -7.3 / 23.1
0+000   33840   Heavy trucks    -       29      40      none    -       -
Average (of DGAC and PCC)       -7.3 / 23.1
0+000   33840   Buses   -       8       40      none    -       -       Average (of
DGAC and PCC)   -7.3 / 23.1
0+000   33840   Motorcycles     -       15      40      none    -       -
Average (of DGAC and PCC)       -7.3 / 23.1
0+000   33840   Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -7.3 / 23.1
1+005   33840   Total   -       1410    -       none    -       -       Average (of
DGAC and PCC)   -29.1 / 11.3
1+005   33840   Automobiles     -       1329    40      none    -       -
Average (of DGAC and PCC)       -29.1 / 11.3
1+005   33840   Medium trucks   -       36      40      none    -       -
Average (of DGAC and PCC)       -29.1 / 11.3
1+005   33840   Heavy trucks    -       15      40      none    -       -
Average (of DGAC and PCC)       -29.1 / 11.3
1+005   33840   Buses   -       15      40      none    -       -       Average (of
DGAC and PCC)   -29.1 / 11.3
1+005   33840   Motorcycles     -       15      40      none    -       -
Average (of DGAC and PCC)       -29.1 / 11.3
1+005   33840   Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -29.1 / 11.3
1+546   -                                       -       -       -       -       -
   W Lilac W of Site      Traffic direction:    In entry direction
0+000   32400   Total   -       1350    -       none    -       -       Average (of
DGAC and PCC)   -11.8 / -2.0
0+000   32400   Automobiles     -       1264    40      none    -       -
Average (of DGAC and PCC)       -11.8 / -2.0
0+000   32400   Medium trucks   -       38      40      none    -       -
Average (of DGAC and PCC)       -11.8 / -2.0
0+000   32400   Heavy trucks    -       27      40      none    -       -
Average (of DGAC and PCC)       -11.8 / -2.0
0+000   32400   Buses   -       7       40      none    -       -       Average (of
DGAC and PCC)   -11.8 / -2.0
0+000   32400   Motorcycles     -       14      40      none    -       -
Average (of DGAC and PCC)       -11.8 / -2.0
0+000   32400   Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -11.8 / -2.0
0+570   32400   Total   -       1350    -       none    -       -       Average (of
DGAC and PCC)   -2.9
0+570   32400   Automobiles     -       1274    40      none    -       -
Average (of DGAC and PCC)       -2.9
0+570   32400   Medium trucks   -       34      40      none    -       -
Average (of DGAC and PCC)       -2.9
0+570   32400   Heavy trucks    -       14      40      none    -       -
Average (of DGAC and PCC)       -2.9
0+570   32400   Buses   -       14      40      none    -       -       Average (of
DGAC and PCC)   -2.9
0+570   32400   Motorcycles     -       14      40      none    -       -
Average (of DGAC and PCC)       -2.9
0+570   32400   Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -2.9
0+793   -                                       -       -       -       -       -
   395 N of W Lilac      Traffic direction:    In entry direction
```

```
0+000   30744   Total   -       1281    -       none    -       -       Average (of
DGAC and PCC)   -20.0 / 3.0
0+000   30744   Automobiles     -       1199    40      none    -       -
Average (of DGAC and PCC)       -20.0 / 3.0
0+000   30744   Medium trucks   -       36      40      none    -       -
Average (of DGAC and PCC)       -20.0 / 3.0
0+000   30744   Heavy trucks    -       26      40      none    -       -
Average (of DGAC and PCC)       -20.0 / 3.0
0+000   30744   Buses   -       7       40      none    -       -       Average (of
DGAC and PCC)   -20.0 / 3.0
0+000   30744   Motorcycles     -       13      40      none    -       -
Average (of DGAC and PCC)       -20.0 / 3.0
0+000   30744   Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -20.0 / 3.0
0+862   -                                       -       -       -       -       -
   I-15 SB      Traffic direction:    In entry direction
0+000   203352  Total   -       8473    -       none    -       -       Average (of
DGAC and PCC)   -13.6 / 18.3
0+000   203352  Automobiles     -       7942    40      none    -       -
Average (of DGAC and PCC)       -13.6 / 18.3
0+000   203352  Medium trucks   -       233     40      none    -       -
Average (of DGAC and PCC)       -13.6 / 18.3
0+000   203352  Heavy trucks    -       170     40      none    -       -
Average (of DGAC and PCC)       -13.6 / 18.3
0+000   203352  Buses   -       43      40      none    -       -       Average (of
DGAC and PCC)   -13.6 / 18.3
0+000   203352  Motorcycles     -       85      40      none    -       -
Average (of DGAC and PCC)       -13.6 / 18.3
0+000   203352  Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -13.6 / 18.3
3+116   -                                       -       -       -       -       -
   I-15 NB      Traffic direction:    In entry direction
0+000   203352  Total   -       8473    -       none    -       -       Average (of
DGAC and PCC)   -24.6 / 12.2
0+000   203352  Automobiles     -       7942    40      none    -       -
Average (of DGAC and PCC)       -24.6 / 12.2
0+000   203352  Medium trucks   -       233     40      none    -       -
Average (of DGAC and PCC)       -24.6 / 12.2
0+000   203352  Heavy trucks    -       170     40      none    -       -
Average (of DGAC and PCC)       -24.6 / 12.2
0+000   203352  Buses   -       43      40      none    -       -       Average (of
DGAC and PCC)   -24.6 / 12.2
0+000   203352  Motorcycles     -       85      40      none    -       -
Average (of DGAC and PCC)       -24.6 / 12.2
0+000   203352  Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -24.6 / 12.2
3+023   181728  Total   -       7572    -       none    -       -       Average (of
DGAC and PCC)   -9.7
3+023   181728  Automobiles     -       7020    40      none    -       -
Average (of DGAC and PCC)       -9.7
3+023   181728  Medium trucks   -       212     40      none    -       -
Average (of DGAC and PCC)       -9.7
3+023   181728  Heavy trucks    -       85      40      none    -       -
Average (of DGAC and PCC)       -9.7
3+023   181728  Buses   -       85      40      none    -       -       Average (of
DGAC and PCC)   -9.7
3+023   181728  Motorcycles     -       170     40      none    -       -
Average (of DGAC and PCC)       -9.7
3+023   181728  Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -9.7
3+124   -                                       -       -       -       -       -
   395 S of I-15        Traffic direction:    In entry direction
0+000   16416   Total   -       684     -       none    -       -       Average (of
```

DGAC and PCC) -11.6 / 7.1								
0+000	16416	Automobiles	-	640	40	none	-	-
Average (of DGAC and PCC) -11.6 / 7.1								
0+000	16416	Medium trucks	-	19	40	none	-	-
Average (of DGAC and PCC) -11.6 / 7.1								
0+000	16416	Heavy trucks	-	14	40	none	-	-
Average (of DGAC and PCC) -11.6 / 7.1								
0+000	16416	Buses	-	4	40	none	-	Average (of
DGAC and PCC) -11.6 / 7.1								
0+000	16416	Motorcycles	-	7	40	none	-	-
Average (of DGAC and PCC) -11.6 / 7.1								
0+000	16416	Auxiliary Vehicle		-	-	-	none	- -
Average (of DGAC and PCC) -11.6 / 7.1								
3+966	-				-	-	-	- -

Stationing	Traffic values ADT	Vehicles type	Vehicle name	Control day	Constr. Speed	Affect. device	Gradient
km	Veh/24h	Road surface	Min / Max Veh/h km/h	km/h	%		%
Main Street - W 1	Traffic direction:	In entry direction					
0+000	22128	Total	- 922 -	none	-	-	Average (of DGAC and PCC) -5.4 / -1.4
0+000	22128	Automobiles	- 862 48	none	-	-	Average (of DGAC and PCC) -5.4 / -1.4
0+000	22128	Medium trucks	- 26 48	none	-	-	Average (of DGAC and PCC) -5.4 / -1.4
0+000	22128	Heavy trucks	- 19 48	none	-	-	Average (of DGAC and PCC) -5.4 / -1.4
0+000	22128	Buses	- 5 48	none	-	-	Average (of DGAC and PCC) -5.4 / -1.4
0+000	22128	Motorcycles	- 10 48	none	-	-	Average (of DGAC and PCC) -5.4 / -1.4
0+000	22128	Auxiliary Vehicle	- -	-	none	-	- Average (of DGAC and PCC) -5.4 / -1.4
0+356	-		- -	-	-	-	-
Main Street - W 2	Traffic direction:	In entry direction					
0+000	19080	Total	- 795 -	none	-	-	Average (of DGAC and PCC) -4.1 / 0.0
0+000	19080	Automobiles	- 745 48	none	-	-	Average (of DGAC and PCC) -4.1 / 0.0
0+000	19080	Medium trucks	- 22 48	none	-	-	Average (of DGAC and PCC) -4.1 / 0.0
0+000	19080	Heavy trucks	- 16 48	none	-	-	Average (of DGAC and PCC) -4.1 / 0.0
0+000	19080	Buses	- 4 48	none	-	-	Average (of DGAC and PCC) -4.1 / 0.0
0+000	19080	Motorcycles	- 8 48	none	-	-	Average (of DGAC and PCC) -4.1 / 0.0
0+000	19080	Auxiliary Vehicle	- -	-	none	-	- Average (of DGAC and PCC) -4.1 / 0.0
0+260	-		- -	-	-	-	-
Main Street - E 1	Traffic direction:	In entry direction					
0+000	7152	Total	- 298 -	none	-	-	Average (of DGAC and PCC) 16.6
0+000	7152	Automobiles	- 278 48	none	-	-	Average (of DGAC and PCC) 16.6
0+000	7152	Medium trucks	- 9 48	none	-	-	Average (of DGAC and PCC) 16.6
0+000	7152	Heavy trucks	- 6 48	none	-	-	Average (of DGAC and PCC) 16.6
0+000	7152	Buses	- 2 48	none	-	-	Average (of DGAC and PCC) 16.6
0+000	7152	Motorcycles	- 3 48	none	-	-	Average (of DGAC and PCC) 16.6
0+000	7152	Auxiliary Vehicle	- -	-	none	-	- Average (of DGAC and PCC) 16.6
0+082	-		- -	-	-	-	-
Main Street - E 2	Traffic direction:	In entry direction					
0+000	2568	Total	- 107 -	none	-	-	Average (of DGAC and PCC) 5.2
0+000	2568	Automobiles	- 98 48	none	-	-	Average (of DGAC and PCC) 5.2
0+000	2568	Medium trucks	- 3 48	none	-	-	Average (of DGAC and PCC) 5.2
0+000	2568	Heavy trucks	- 3 48	none	-	-	Average (of DGAC and PCC) 5.2
0+000	2568	Buses	- 1 48	none	-	-	Average (of

```
DGAC and PCC)   5.2
0+000   2568    Motorcycles     -       2       48      none    -       -
Average (of DGAC and PCC)       5.2
0+000   2568    Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       5.2
0+144   -                                       -       -       -       -       -
   Main Street - E 3      Traffic direction:    In entry direction
0+000   2568    Total   -       107     -       none    -       -       Average (of
DGAC and PCC)   -1.9 / 0.1
0+000   2568    Automobiles     -       98      48      none    -       -
Average (of DGAC and PCC)       -1.9 / 0.1
0+000   2568    Medium trucks   -       3       48      none    -       -
Average (of DGAC and PCC)       -1.9 / 0.1
0+000   2568    Heavy trucks    -       3       48      none    -       -
Average (of DGAC and PCC)       -1.9 / 0.1
0+000   2568    Buses   -       1       48      none    -       -       Average (of
DGAC and PCC)   -1.9 / 0.1
0+000   2568    Motorcycles     -       2       48      none    -       -
Average (of DGAC and PCC)       -1.9 / 0.1
0+000   2568    Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -1.9 / 0.1
0+046   -                                       -       -       -       -       -
   Main Street - North W      Traffic direction:    In entry direction
0+000   9552    Total   -       398     -       none    -       -       Average (of
DGAC and PCC)   -6.7 / 24.0
0+000   9552    Automobiles     -       373     48      none    -       -
Average (of DGAC and PCC)       -6.7 / 24.0
0+000   9552    Medium trucks   -       11      48      none    -       -
Average (of DGAC and PCC)       -6.7 / 24.0
0+000   9552    Heavy trucks    -       8       48      none    -       -
Average (of DGAC and PCC)       -6.7 / 24.0
0+000   9552    Buses   -       2       48      none    -       -       Average (of
DGAC and PCC)   -6.7 / 24.0
0+000   9552    Motorcycles     -       4       48      none    -       -
Average (of DGAC and PCC)       -6.7 / 24.0
0+000   9552    Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -6.7 / 24.0
0+330   -                                       -       -       -       -       -
   Main Street - North E      Traffic direction:    In entry direction
0+000   3600    Total   -       150     -       none    -       -       Average (of
DGAC and PCC)   0.0 / 9.9
0+000   3600    Automobiles     -       139     48      none    -       -
Average (of DGAC and PCC)       0.0 / 9.9
0+000   3600    Medium trucks   -       5       48      none    -       -
Average (of DGAC and PCC)       0.0 / 9.9
0+000   3600    Heavy trucks    -       3       48      none    -       -
Average (of DGAC and PCC)       0.0 / 9.9
0+000   3600    Buses   -       1       48      none    -       -       Average (of
DGAC and PCC)   0.0 / 9.9
0+000   3600    Motorcycles     -       2       48      none    -       -
Average (of DGAC and PCC)       0.0 / 9.9
0+000   3600    Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       0.0 / 9.9
0+231   -                                       -       -       -       -       -
   Main Street - South W      Traffic direction:    In entry direction
0+000   9552    Total   -       398     -       none    -       -       Average (of
DGAC and PCC)   -6.6 / 10.0
0+000   9552    Automobiles     -       373     48      none    -       -
Average (of DGAC and PCC)       -6.6 / 10.0
0+000   9552    Medium trucks   -       11      48      none    -       -
Average (of DGAC and PCC)       -6.6 / 10.0
0+000   9552    Heavy trucks    -       8       48      none    -       -
Average (of DGAC and PCC)       -6.6 / 10.0
```

```
0+000   9552    Buses   -       2       48      none    -       -       Average (of
DGAC and PCC)   -6.6 / 10.0
0+000   9552    Motorcycles     -       4       48      none    -       -
Average (of DGAC and PCC)       -6.6 / 10.0
0+000   9552    Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -6.6 / 10.0
0+396   -                                       -       -       -       -       -
   Main Street - South E      Traffic direction:    In entry direction
0+000   3600    Total   -       150     -       none    -       -       Average (of
DGAC and PCC)   0.0 / 15.7
0+000   3600    Automobiles     -       139     48      none    -       -
Average (of DGAC and PCC)       0.0 / 15.7
0+000   3600    Medium trucks   -       5       48      none    -       -
Average (of DGAC and PCC)       0.0 / 15.7
0+000   3600    Heavy trucks    -       3       48      none    -       -
Average (of DGAC and PCC)       0.0 / 15.7
0+000   3600    Buses   -       1       48      none    -       -       Average (of
DGAC and PCC)   0.0 / 15.7
0+000   3600    Motorcycles     -       2       48      none    -       -
Average (of DGAC and PCC)       0.0 / 15.7
0+000   3600    Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       0.0 / 15.7
0+265   -                                       -       -       -       -       -
   O Street      Traffic direction:    In entry direction
0+000   -                                       -       -       -       -       -3.5
/ -0.1
0+314   -                                       -       -       -       -       -
   C Street - W 2      Traffic direction:    In entry direction
0+000   -                                       -       -       -       -       3.1
/ 6.0
0+223   -                                       -       -       -       -       -
   C Street - W 1      Traffic direction:    In entry direction
0+000   -                                       -       -       -       -       -9.9
/ -3.8
0+144   -                                       -       -       -       -       -
   C Street - E      Traffic direction:    In entry direction
0+000   3864    Total   -       161     -       none    -       -       Average (of
DGAC and PCC)   0.4 / 12.4
0+000   3864    Automobiles     -       149     40      none    -       -
Average (of DGAC and PCC)       0.4 / 12.4
0+000   3864    Medium trucks   -       5       40      none    -       -
Average (of DGAC and PCC)       0.4 / 12.4
0+000   3864    Heavy trucks    -       4       40      none    -       -
Average (of DGAC and PCC)       0.4 / 12.4
0+000   3864    Buses   -       1       40      none    -       -       Average (of
DGAC and PCC)   0.4 / 12.4
0+000   3864    Motorcycles     -       2       40      none    -       -
Average (of DGAC and PCC)       0.4 / 12.4
0+000   3864    Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       0.4 / 12.4
0+181   -                                       -       -       -       -       -
   Z Street      Traffic direction:    In entry direction
0+000   3864    Total   -       161     -       none    -       -       Average (of
DGAC and PCC)   -5.5 / 7.0
0+000   3864    Automobiles     -       149     40      none    -       -
Average (of DGAC and PCC)       -5.5 / 7.0
0+000   3864    Medium trucks   -       5       40      none    -       -
Average (of DGAC and PCC)       -5.5 / 7.0
0+000   3864    Heavy trucks    -       4       40      none    -       -
Average (of DGAC and PCC)       -5.5 / 7.0
0+000   3864    Buses   -       1       40      none    -       -       Average (of
DGAC and PCC)   -5.5 / 7.0
0+000   3864    Motorcycles     -       2       40      none    -       -
```

```
Average (of DGAC and PCC)       -5.5 / 7.0
0+000   3864    Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -5.5 / 7.0
0+682   -                                       -       -       -       -       -
   F Street      Traffic direction:    In entry direction
0+000   5976    Total   -       249     -       none    -       -       Average (of
DGAC and PCC)   -14.4 / 22.6
0+000   5976    Automobiles     -       232     40      none    -       -
Average (of DGAC and PCC)       -14.4 / 22.6
0+000   5976    Medium trucks   -       7       40      none    -       -
Average (of DGAC and PCC)       -14.4 / 22.6
0+000   5976    Heavy trucks    -       5       40      none    -       -
Average (of DGAC and PCC)       -14.4 / 22.6
0+000   5976    Buses   -       2       40      none    -       -       Average (of
DGAC and PCC)   -14.4 / 22.6
0+000   5976    Motorcycles     -       3       40      none    -       -
Average (of DGAC and PCC)       -14.4 / 22.6
0+000   5976    Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -14.4 / 22.6
0+909   -                                       -       -       -       -       -
   Lilac Hills Ranch Road - N 2      Traffic direction:    In entry direction
0+000   -                                       -       -       -       -
-14.1 / -8.6
0+137   -                                       -       -       -       -       -
   Lilac Hills Ranch Road - N 1      Traffic direction:    In entry direction
0+000   12768   Total   -       532     -       none    -       -       Average (of
DGAC and PCC)   4.2
0+000   12768   Automobiles     -       497     48      none    -       -
Average (of DGAC and PCC)       4.2
0+000   12768   Medium trucks   -       15      48      none    -       -
Average (of DGAC and PCC)       4.2
0+000   12768   Heavy trucks    -       11      48      none    -       -
Average (of DGAC and PCC)       4.2
0+000   12768   Buses   -       3       48      none    -       -       Average (of
DGAC and PCC)   4.2
0+000   12768   Motorcycles     -       6       48      none    -       -
Average (of DGAC and PCC)       4.2
0+000   12768   Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       4.2
0+095   -                                       -       -       -       -       -
   Lilac Hills Ranch Road - N      Traffic direction:    In entry direction
0+000   12768   Total   -       532     -       none    -       -       Average (of
DGAC and PCC)   -19.0 / 19.9
0+000   12768   Automobiles     -       497     48      none    -       -
Average (of DGAC and PCC)       -19.0 / 19.9
0+000   12768   Medium trucks   -       15      48      none    -       -
Average (of DGAC and PCC)       -19.0 / 19.9
0+000   12768   Heavy trucks    -       11      48      none    -       -
Average (of DGAC and PCC)       -19.0 / 19.9
0+000   12768   Buses   -       3       48      none    -       -       Average (of
DGAC and PCC)   -19.0 / 19.9
0+000   12768   Motorcycles     -       6       48      none    -       -
Average (of DGAC and PCC)       -19.0 / 19.9
0+000   12768   Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -19.0 / 19.9
0+907   -                                       -       -       -       -       -
   Lilac Hills Ranch Road      Traffic direction:    In entry direction
0+000   3288    Total   -       137     -       none    -       -       Average (of
DGAC and PCC)   -21.9 / 23.8
0+000   3288    Automobiles     -       127     48      none    -       -
Average (of DGAC and PCC)       -21.9 / 23.8
0+000   3288    Medium trucks   -       4       48      none    -       -
Average (of DGAC and PCC)       -21.9 / 23.8
```

0+000 3288 Heavy trucks - 3 48 none - - Average (of DGAC and PCC) -21.9 / 23.8
0+000 3288 Buses - 1 48 none - - Average (of DGAC and PCC) -21.9 / 23.8
0+000 3288 Motorcycles - 2 48 none - - Average (of DGAC and PCC) -21.9 / 23.8
0+000 3288 Auxiliary Vehicle - - - none - - Average (of DGAC and PCC) -21.9 / 23.8
0+765 3312 Total - 138 - none - - Average (of DGAC and PCC) -20.5 / 17.9
0+765 3312 Automobiles - 128 48 none - - Average (of DGAC and PCC) -20.5 / 17.9
0+765 3312 Medium trucks - 4 48 none - - Average (of DGAC and PCC) -20.5 / 17.9
0+765 3312 Heavy trucks - 2 48 none - - Average (of DGAC and PCC) -20.5 / 17.9
0+765 3312 Buses - 2 48 none - - Average (of DGAC and PCC) -20.5 / 17.9
0+765 3312 Motorcycles - 2 48 none - - Average (of DGAC and PCC) -20.5 / 17.9
0+765 3312 Auxiliary Vehicle - - - none - - Average (of DGAC and PCC) -20.5 / 17.9
2+223 - - - - - - -

Covey Lane Traffic direction: In entry direction

0+000 3384 Total - 141 - none - - Average (of DGAC and PCC) -1.1
0+000 3384 Automobiles - 131 48 none - - Average (of DGAC and PCC) -1.1
0+000 3384 Medium trucks - 4 48 none - - Average (of DGAC and PCC) -1.1
0+000 3384 Heavy trucks - 3 48 none - - Average (of DGAC and PCC) -1.1
0+000 3384 Buses - 1 48 none - - Average (of DGAC and PCC) -1.1
0+000 3384 Motorcycles - 2 48 none - - Average (of DGAC and PCC) -1.1
0+000 3384 Auxiliary Vehicle - - - none - - Average (of DGAC and PCC) -1.1
0+640 - - - - - - -

West Lilac Road - 1 Traffic direction: In entry direction

0+000 32400 Total - 1350 - none - - Average (of DGAC and PCC) -5.0 / 9.3
0+000 32400 Automobiles - 1264 48 none - - Average (of DGAC and PCC) -5.0 / 9.3
0+000 32400 Medium trucks - 38 48 none - - Average (of DGAC and PCC) -5.0 / 9.3
0+000 32400 Heavy trucks - 27 48 none - - Average (of DGAC and PCC) -5.0 / 9.3
0+000 32400 Buses - 7 48 none - - Average (of DGAC and PCC) -5.0 / 9.3
0+000 32400 Motorcycles - 14 48 none - - Average (of DGAC and PCC) -5.0 / 9.3
0+000 32400 Auxiliary Vehicle - - - none - - Average (of DGAC and PCC) -5.0 / 9.3
1+033 - - - - - - -

West Lilac Road - 3 Traffic direction: In entry direction

0+000 4536 Total - 189 - none - - Average (of DGAC and PCC) -12.5 / 43.3
0+000 4536 Automobiles - 176 48 none - - Average (of DGAC and PCC) -12.5 / 43.3
0+000 4536 Medium trucks - 6 48 none - - Average (of DGAC and PCC) -12.5 / 43.3
0+000 4536 Heavy trucks - 4 48 none - -

```
Average (of DGAC and PCC)       -12.5 / 43.3
0+000   4536    Buses   -       1       48      none    -       -       Average (of
DGAC and PCC)   -12.5 / 43.3
0+000   4536    Motorcycles     -       2       48      none    -       -
Average (of DGAC and PCC)       -12.5 / 43.3
0+000   4536    Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -12.5 / 43.3
0+638   4536    Total   -       189     -       none    -       -       Average (of
DGAC and PCC)   -7.4 / 11.0
0+638   4536    Automobiles     -       176     48      none    -       -
Average (of DGAC and PCC)       -7.4 / 11.0
0+638   4536    Medium trucks   -       6       48      none    -       -
Average (of DGAC and PCC)       -7.4 / 11.0
0+638   4536    Heavy trucks    -       4       48      none    -       -
Average (of DGAC and PCC)       -7.4 / 11.0
0+638   4536    Buses   -       1       48      none    -       -       Average (of
DGAC and PCC)   -7.4 / 11.0
0+638   4536    Motorcycles     -       2       48      none    -       -
Average (of DGAC and PCC)       -7.4 / 11.0
0+638   4536    Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -7.4 / 11.0
0+866   -                                       -       -       -       -       -
   West Lilac Road - 2      Traffic direction:    In entry direction
0+000   7536    Total   -       314     -       none    -       -       Average (of
DGAC and PCC)   -12.0 / 13.8
0+000   7536    Automobiles     -       292     48      none    -       -
Average (of DGAC and PCC)       -12.0 / 13.8
0+000   7536    Medium trucks   -       9       48      none    -       -
Average (of DGAC and PCC)       -12.0 / 13.8
0+000   7536    Heavy trucks    -       7       48      none    -       -
Average (of DGAC and PCC)       -12.0 / 13.8
0+000   7536    Buses   -       2       48      none    -       -       Average (of
DGAC and PCC)   -12.0 / 13.8
0+000   7536    Motorcycles     -       4       48      none    -       -
Average (of DGAC and PCC)       -12.0 / 13.8
0+000   7536    Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -12.0 / 13.8
1+378   -                                       -       -       -       -       -
   Rodriquez Road      Traffic direction:    In entry direction
0+000   7536    Total   -       314     -       none    -       -       Average (of
DGAC and PCC)   5.9
0+000   7536    Automobiles     -       292     48      none    -       -
Average (of DGAC and PCC)       5.9
0+000   7536    Medium trucks   -       9       48      none    -       -
Average (of DGAC and PCC)       5.9
0+000   7536    Heavy trucks    -       7       48      none    -       -
Average (of DGAC and PCC)       5.9
0+000   7536    Buses   -       2       48      none    -       -       Average (of
DGAC and PCC)   5.9
0+000   7536    Motorcycles     -       4       48      none    -       -
Average (of DGAC and PCC)       5.9
0+000   7536    Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       5.9
0+207   -                                       -       -       -       -       -
   West Lilac Road - 4      Traffic direction:    In entry direction
0+000   4536    Total   -       189     -       none    -       -       Average (of
DGAC and PCC)   -20.2 / 12.4
0+000   4536    Automobiles     -       176     48      none    -       -
Average (of DGAC and PCC)       -20.2 / 12.4
0+000   4536    Medium trucks   -       6       48      none    -       -
Average (of DGAC and PCC)       -20.2 / 12.4
0+000   4536    Heavy trucks    -       4       48      none    -       -
Average (of DGAC and PCC)       -20.2 / 12.4
```

```
0+000   4536    Buses   -       1       48      none    -       -       Average (of
DGAC and PCC)   -20.2 / 12.4
0+000   4536    Motorcycles     -       2       48      none    -       -
Average (of DGAC and PCC)       -20.2 / 12.4
0+000   4536    Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -20.2 / 12.4
0+917   6096    Total   -       254     -       none    -       -       Average (of
DGAC and PCC)   -7.7 / 19.7
0+917   6096    Automobiles     -       236     48      none    -       -
Average (of DGAC and PCC)       -7.7 / 19.7
0+917   6096    Medium trucks   -       7       48      none    -       -
Average (of DGAC and PCC)       -7.7 / 19.7
0+917   6096    Heavy trucks    -       6       48      none    -       -
Average (of DGAC and PCC)       -7.7 / 19.7
0+917   6096    Buses   -       2       48      none    -       -       Average (of
DGAC and PCC)   -7.7 / 19.7
0+917   6096    Motorcycles     -       3       48      none    -       -
Average (of DGAC and PCC)       -7.7 / 19.7
0+917   6096    Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -7.7 / 19.7
3+289   16176   Total   -       674     -       none    -       -       Average (of
DGAC and PCC)   -12.1 / 13.3
3+289   16176   Automobiles     -       630     48      none    -       -
Average (of DGAC and PCC)       -12.1 / 13.3
3+289   16176   Medium trucks   -       19      48      none    -       -
Average (of DGAC and PCC)       -12.1 / 13.3
3+289   16176   Heavy trucks    -       14      48      none    -       -
Average (of DGAC and PCC)       -12.1 / 13.3
3+289   16176   Buses   -       4       48      none    -       -       Average (of
DGAC and PCC)   -12.1 / 13.3
3+289   16176   Motorcycles     -       7       48      none    -       -
Average (of DGAC and PCC)       -12.1 / 13.3
3+289   16176   Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -12.1 / 13.3
4+592   6000    Total   -       250     -       none    -       -       Average (of
DGAC and PCC)   -37.1 / 13.8
4+592   6000    Automobiles     -       233     48      none    -       -
Average (of DGAC and PCC)       -37.1 / 13.8
4+592   6000    Medium trucks   -       7       48      none    -       -
Average (of DGAC and PCC)       -37.1 / 13.8
4+592   6000    Heavy trucks    -       5       48      none    -       -
Average (of DGAC and PCC)       -37.1 / 13.8
4+592   6000    Buses   -       2       48      none    -       -       Average (of
DGAC and PCC)   -37.1 / 13.8
4+592   6000    Motorcycles     -       3       48      none    -       -
Average (of DGAC and PCC)       -37.1 / 13.8
4+592   6000    Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -37.1 / 13.8
8+240   -                                       -       -       -       -       -
   Mountain Ridge Road      Traffic direction:    In entry direction
0+000   2064    Total   -       86      -       none    -       -       Average (of
DGAC and PCC)   1.8
0+000   2064    Automobiles     -       79      40      none    -       -
Average (of DGAC and PCC)       1.8
0+000   2064    Medium trucks   -       3       40      none    -       -
Average (of DGAC and PCC)       1.8
0+000   2064    Heavy trucks    -       2       40      none    -       -
Average (of DGAC and PCC)       1.8
0+000   2064    Buses   -       1       40      none    -       -       Average (of
DGAC and PCC)   1.8
0+000   2064    Motorcycles     -       1       40      none    -       -
Average (of DGAC and PCC)       1.8
0+000   2064    Auxiliary Vehicle       -       -       -       none    -       -
```

```
Average (of DGAC and PCC)       1.8
0+961   -                                       -       -       -       -       -
   395 S of W Lilac      Traffic direction:    In entry direction
0+000   33840   Total   -       1410    -       none    -       -       Average (of
DGAC and PCC)   -7.3 / 23.1
0+000   33840   Automobiles     -       1319    40      none    -       -
Average (of DGAC and PCC)       -7.3 / 23.1
0+000   33840   Medium trucks   -       39      40      none    -       -
Average (of DGAC and PCC)       -7.3 / 23.1
0+000   33840   Heavy trucks    -       29      40      none    -       -
Average (of DGAC and PCC)       -7.3 / 23.1
0+000   33840   Buses   -       8       40      none    -       -       Average (of
DGAC and PCC)   -7.3 / 23.1
0+000   33840   Motorcycles     -       15      40      none    -       -
Average (of DGAC and PCC)       -7.3 / 23.1
0+000   33840   Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -7.3 / 23.1
1+005   33840   Total   -       1410    -       none    -       -       Average (of
DGAC and PCC)   -29.1 / 11.3
1+005   33840   Automobiles     -       1329    40      none    -       -
Average (of DGAC and PCC)       -29.1 / 11.3
1+005   33840   Medium trucks   -       36      40      none    -       -
Average (of DGAC and PCC)       -29.1 / 11.3
1+005   33840   Heavy trucks    -       15      40      none    -       -
Average (of DGAC and PCC)       -29.1 / 11.3
1+005   33840   Buses   -       15      40      none    -       -       Average (of
DGAC and PCC)   -29.1 / 11.3
1+005   33840   Motorcycles     -       15      40      none    -       -
Average (of DGAC and PCC)       -29.1 / 11.3
1+005   33840   Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -29.1 / 11.3
1+546   -                                       -       -       -       -       -
   W Lilac W of Site      Traffic direction:    In entry direction
0+000   32400   Total   -       1350    -       none    -       -       Average (of
DGAC and PCC)   -11.8 / -2.0
0+000   32400   Automobiles     -       1264    40      none    -       -
Average (of DGAC and PCC)       -11.8 / -2.0
0+000   32400   Medium trucks   -       38      40      none    -       -
Average (of DGAC and PCC)       -11.8 / -2.0
0+000   32400   Heavy trucks    -       27      40      none    -       -
Average (of DGAC and PCC)       -11.8 / -2.0
0+000   32400   Buses   -       7       40      none    -       -       Average (of
DGAC and PCC)   -11.8 / -2.0
0+000   32400   Motorcycles     -       14      40      none    -       -
Average (of DGAC and PCC)       -11.8 / -2.0
0+000   32400   Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -11.8 / -2.0
0+570   32400   Total   -       1350    -       none    -       -       Average (of
DGAC and PCC)   -2.9
0+570   32400   Automobiles     -       1274    40      none    -       -
Average (of DGAC and PCC)       -2.9
0+570   32400   Medium trucks   -       34      40      none    -       -
Average (of DGAC and PCC)       -2.9
0+570   32400   Heavy trucks    -       14      40      none    -       -
Average (of DGAC and PCC)       -2.9
0+570   32400   Buses   -       14      40      none    -       -       Average (of
DGAC and PCC)   -2.9
0+570   32400   Motorcycles     -       14      40      none    -       -
Average (of DGAC and PCC)       -2.9
0+570   32400   Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -2.9
0+793   -                                       -       -       -       -       -
   395 N of W Lilac      Traffic direction:    In entry direction
```

```
0+000   30744   Total   -       1281    -       none    -       -       Average (of
DGAC and PCC)   -20.0 / 3.0
0+000   30744   Automobiles     -       1199    40      none    -       -
Average (of DGAC and PCC)       -20.0 / 3.0
0+000   30744   Medium trucks   -       36      40      none    -       -
Average (of DGAC and PCC)       -20.0 / 3.0
0+000   30744   Heavy trucks    -       26      40      none    -       -
Average (of DGAC and PCC)       -20.0 / 3.0
0+000   30744   Buses   -       7       40      none    -       -       Average (of
DGAC and PCC)   -20.0 / 3.0
0+000   30744   Motorcycles     -       13      40      none    -       -
Average (of DGAC and PCC)       -20.0 / 3.0
0+000   30744   Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -20.0 / 3.0
0+862   -                                       -       -       -       -       -
   I-15 SB      Traffic direction:    In entry direction
0+000   203352  Total   -       8473    -       none    -       -       Average (of
DGAC and PCC)   -13.6 / 18.3
0+000   203352  Automobiles     -       7942    40      none    -       -
Average (of DGAC and PCC)       -13.6 / 18.3
0+000   203352  Medium trucks   -       233     40      none    -       -
Average (of DGAC and PCC)       -13.6 / 18.3
0+000   203352  Heavy trucks    -       170     40      none    -       -
Average (of DGAC and PCC)       -13.6 / 18.3
0+000   203352  Buses   -       43      40      none    -       -       Average (of
DGAC and PCC)   -13.6 / 18.3
0+000   203352  Motorcycles     -       85      40      none    -       -
Average (of DGAC and PCC)       -13.6 / 18.3
0+000   203352  Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -13.6 / 18.3
3+116   -                                       -       -       -       -       -
   I-15 NB      Traffic direction:    In entry direction
0+000   203352  Total   -       8473    -       none    -       -       Average (of
DGAC and PCC)   -24.6 / 12.2
0+000   203352  Automobiles     -       7942    40      none    -       -
Average (of DGAC and PCC)       -24.6 / 12.2
0+000   203352  Medium trucks   -       233     40      none    -       -
Average (of DGAC and PCC)       -24.6 / 12.2
0+000   203352  Heavy trucks    -       170     40      none    -       -
Average (of DGAC and PCC)       -24.6 / 12.2
0+000   203352  Buses   -       43      40      none    -       -       Average (of
DGAC and PCC)   -24.6 / 12.2
0+000   203352  Motorcycles     -       85      40      none    -       -
Average (of DGAC and PCC)       -24.6 / 12.2
0+000   203352  Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -24.6 / 12.2
3+023   181728  Total   -       7572    -       none    -       -       Average (of
DGAC and PCC)   -9.7
3+023   181728  Automobiles     -       7020    40      none    -       -
Average (of DGAC and PCC)       -9.7
3+023   181728  Medium trucks   -       212     40      none    -       -
Average (of DGAC and PCC)       -9.7
3+023   181728  Heavy trucks    -       85      40      none    -       -
Average (of DGAC and PCC)       -9.7
3+023   181728  Buses   -       85      40      none    -       -       Average (of
DGAC and PCC)   -9.7
3+023   181728  Motorcycles     -       170     40      none    -       -
Average (of DGAC and PCC)       -9.7
3+023   181728  Auxiliary Vehicle       -       -       -       none    -       -
Average (of DGAC and PCC)       -9.7
3+124   -                                       -       -       -       -       -
   395 S of I-15        Traffic direction:    In entry direction
0+000   16416   Total   -       684     -       none    -       -       Average (of
```

DGAC and PCC) -11.6 / 7.1								
0+000	16416	Automobiles	-	640	40	none	-	-
Average (of DGAC and PCC) -11.6 / 7.1								
0+000	16416	Medium trucks	-	19	40	none	-	-
Average (of DGAC and PCC) -11.6 / 7.1								
0+000	16416	Heavy trucks	-	14	40	none	-	-
Average (of DGAC and PCC) -11.6 / 7.1								
0+000	16416	Buses	-	4	40	none	-	Average (of
DGAC and PCC) -11.6 / 7.1								
0+000	16416	Motorcycles	-	7	40	none	-	-
Average (of DGAC and PCC) -11.6 / 7.1								
0+000	16416	Auxiliary Vehicle		-	-	-	none	- -
Average (of DGAC and PCC) -11.6 / 7.1								
3+966	-				-	-	-	- -