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May 16, 2014

Mr. Jon Rilling
The Accretive Group of Companies
12275 El Camino Real, Suite 110
San Diego, CA 92130

Reference: Mountain Ridge Road Fire Station Alternative – Noise Analysis
(RECON Number 6153)

Dear Mr. Rilling,

This technical analysis identifies and documents potential noise impacts related to the Mountain Ridge Road Fire Station Alternative (Alternative) of the Lilac Hills Ranch project (proposed project).

Description of the Mountain Ridge Road Fire Station Alternative

The Alternative would encompass the same 608-acre project site and would consist of the same mix of residential, commercial, and institutional uses, along with parks, open space and other project amenities, including the Water Reclamation Facility and Recycling Facility, as the project. Specifically, the Alternative entails construction of the same component part as the project, including single-family detached, single-family attached, mixed-use residential, and age-restricted single family homes, containing a maximum of 1,746 dwelling units; amenities to serve the senior citizen neighborhood including a 200-bed group residential facility; commercial uses, a K-8 school; a 50-room country inn; civic facilities including a fire station; public and private parks; an institutional facility; and private recreational facilities and other recreational amenities. Open space is proposed to retain some of the existing citrus and avocado groves, along with 104.1 acres of sensitive biological/wetland habitat. Additional biological open space may be provided off-site to mitigate impacts to upland habitat and contribute to a proposed regional preserve system.

In comparison to the proposed project, the Alternative would relocate the project's potential fire station from Phase 3 to Phase 5 of the project site. To accommodate the fire station, the Alternative would convert Mountain Ridge Road from a 2-lane private road with restricted access to an unrestricted County public road, classified as a Rural Residential Collector. A standard Rural Residential Collector includes a 28 foot wide paved roadway with a 48 foot wide graded easement. While the Alternative would pursue a road exception request to construct Mountain Ridge Road with a reduced 40 foot graded easement, the analysis below assumes the worst-case scenario of a standard Rural Residential Collector with a 48 foot wide graded right of way. This represents a worst-case scenario because the wider right-of-way would locate vehicles closer to local noise sensitive land use (NSLU) which would result in increased noise levels over a narrower roadway. The Alternative would also remove all access restriction (gates) in Phases 4 and 5, including gates restricting access to Mountain Ridge Road.

Like the project, access under the Alternative would be provided by two permanent access points to West Lilac Road, which turns into Main Street within the project site. Additional access would be provided by a legal physical connection to West Lilac Road via Covey Lane, and emergency access would be provided via Street "B" via Rodriguez Road. Figure 1 shows the regional location

of the project site. Figure 2 shows the boundary of the project site plotted on an aerial photograph of the project vicinity. Figure 3 shows the land use plan for the Alternative.

This alternative would provide the Deer Springs Fire Protection District (DSFPD) with a two-acre site within Phase 5 as shown on Figure 3 for the purpose of locating a future permanent fire station. The permanent station would consist of 3,000 square feet of livable space with two dual stacked engine bays equal to 1,500 square feet. The final design of the fire station will require a Site Plan and will need to be approved by the DSFPD. The site would include eight parking spaces for firefighters and two spaces for the public. It would be a fully functioning fire station that is the equivalent of existing stations throughout similar areas of San Diego County.

The analysis of the project is contained in the *Noise Technical Report, Lilac Hills Ranch, San Diego County, California* (Noise Report) (RECON 2014). The Nosie Report contains descriptions of the existing setting, federal, state, and local law and regulations applicable to the project, potentially affected sensitive receptors, and addresses impacts associated with construction and operation of the proposed project. The selection of this Alternative would potentially alter the travel patterns associated with project traffic on a local scale and could result in impacts to receptors adjacent to Mountain Ridge Road from construction as well as operation. Thus, this analysis includes detailed modeling along this 0.6-mile segment as well as an assessment of the changes along other roadways segments affected by the Alternative. This analysis also addresses the potential noise impacts related to construction and operation of the relocated fire station proposed as part of this Alternative. Any distinction in impacts between the proposed project and the Alternative is due solely on the designation of Mountain Ridge Road as a County public road classified as a Rural Residential Collector, rather than a private road, and the corresponding change in traffic distribution patterns and increase or decrease in average daily traffic volumes on study area roads.

Applicable Standards

The County has approved Guidelines for Determining Significance that encompass Appendix G of the CEQA Guidelines and are intended to provide consistency in the environmental analysis. The basis for the determination of significance is the *County's Guidelines for Determination of Significance, Noise*, adopted January 27, 2009. Based on these guidelines the following thresholds are applicable to the analysis of the Alternative.

Traffic Generated Noise

Noise standards applicable to traffic-generated noise are expressed in terms of the community noise equivalent level (CNEL). The CNEL is a 24-hour A-weighted average sound level [dB(A) L_{eq}] from midnight to midnight obtained after the addition of 5 decibels to sound levels occurring between 7:00 p.m. and 10:00 p.m. and of 10 decibels to the sound levels occurring between 10:00 p.m. and 7:00 a.m. A-weighting is a frequency correction that often correlates well with the subjective response of humans to noise. Adding 5 decibels and 10 decibels to the evening and nighttime hours, respectively, accounts for the added sensitivity of humans to noise during these time periods.

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.

The traffic generated noise standards of the Noise Guidelines were modified by the County General Plan Update (GPU). The GPU was adopted by the County on August 3, 2011. While the Noise Guidelines have not been updated to reflect the General Plan Noise Element, the new GPU noise compatibility guidelines and standards as contained in the GPU are applicable to the project and this Alternative.

Table 1 provides the County's current noise compatibility guidelines and Table 2 provides the County's noise standards.

TABLE 1

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 2.8-2, 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 2.8-2.

TABLE 2
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.

Because interior noise levels for mixed-use residences are also regulated by Title 24 of the State Building Code, the County evaluates interior levels for mixed-use residential units as part of the building permit process.

Title 24 of the State Building Code requires that:

Residential structures to be located within an annual CNEL contour of 60 require an acoustical analysis showing that the structure has been designed to limit intruding noise to the prescribed allowable levels.

and that:

Interior CNEL with the windows closed, attributable to exterior sources shall not exceed an annual CNEL of 45 dB(A) in any habitable room.

Construction Noise

The County has a well-defined Noise Ordinance that covers construction noise and prohibits noise levels in excess of 75 dB(A) L_{eq} for an 8-hour period. Section 36.409 states:

> Except for emergency work, it shall be unlawful for any person to operate construction equipment or cause construction equipment to be operated, that exceeds an average sound level of 75 dB(A) L_{eq} for an eight-hour period, between 7:00 a.m. and 7:00 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.

Emergency work is defined as follows in the County's Noise Ordinance:

> Emergency Work shall mean work made necessary to restore property to a safe condition following a public calamity or work required to protect persons or property from imminent exposure to danger or damage or work by public or private utilities when restoring utility service (Section 36.402).

Analysis Methodologies and Assumptions

The existing conditions, methodology and significance determination information for the analysis of this Alternative is the same as described for the project in the Noise Report. Additionally, unless otherwise noted in this report, the Alternative would be subject to all mitigation measures identified in connection with the proposed project, as well as all noise related project design features.

Construction

Off-site roadway construction activities were modeled using the Road Construction Noise Model (RCNM), version 1.1, developed by the Federal Highway Administration (FHWA). For noise modeling purposes, it was assumed that construction of Mountain Ridge Road as proposed by the Alternative would occur over a period of 6 months. The total length of construction along Mountain Ridge Road would be approximately 0.6 miles and occur over approximately 20 acres with a daily disturbance of 5 acres. Table 3 lists the equipment included in the noise modeling.

TABLE 3
CONSTRUCTION EQUIPMENT AND ASSOCIATED NOISE LEVELS

Equipment	Quantity	Maximum Noise Level @ 50 feet	Typical Usage
Crawler Tractor	1	85	40%
Excavator	1-3	85	40%
Grader	1	85	40%
Roller	1-3	85	20%
Front-end Loader	1	80	40%
Scraper	1-2	85	40%
Backhoe	1-2	80	40%
Pumps	1	77	50%
Compressors	1	80	40%
Generator Sets	1	82	50%
Pavers	1-2	85	50%

SOURCE: RCNM 2001.

Operation

Based on the *Lilac Hills Ranch Mountain Ridge Road Fire Station Alternative Traffic Impact Study* (Chen Ryan 2014) (Alternative TIS) prepared for the Mountain Ridge Road Fire Station Alternative, the Alternative would not result in greater trip generation than the proposed project; however, the Alternative would result in a redistribution of project related traffic. This redistribution could result in increased or decreased noise levels on certain roads. Thus, operational noise emission changes along these affected roads were assessed, and, specific to Mountain Ridge Road, detailed modeling was conducted utilizing SoundPLAN Essential, Version 2.1, and the FHWA Traffic Noise Model (TNM) traffic noise reference levels and algorithms.

Construction Noise Impact Analysis

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 roadway construction sites typically range from 77 dB to 85 dB L_{max} at 50 feet. Typical operating cycles, or usage, would typically involve 2 minutes of full power, followed by 3 or 4 minutes at lower settings. Average noise levels from the center of roadway construction sites are approximately 82 dBA L_{eq} at 50 feet from the roadway centerline, depending on the activities performed. Additionally, an 8-hour L_{eq} is typically lower than an hourly $L_{eq.}$

Grading activities generate the greatest amount of noise, as this phase requires the largest and heaviest pieces of equipment. Construction of the fire station would be the same as described for the fire station proposed as part of the project and would generate the same noise levels as those disclosed for the project during on-site construction. Additionally, the Alternative would comply with all design considerations and mitigation measures included in the project. Therefore, construction of the fire station under the Alternative would result in **less than significant** impacts.

It is anticipated that construction of Mountain Ridge Road as proposed by the Alternative would involve substantial grading and would overlap with grading activities associated with on-site improvements. As with all the construction phases, construction of Mountain Ridge Road would occur adjacent to NSLU property lines. As shown on Figure 4, with the exception of the residence located at 31013 Mountain Ridge Road, the physical residences and exterior NSLU use areas are located over 150 feet from the roadway centerline of Mountain Ridge Road. Therefore, construction noise levels would not exceed 75 dB(A) $L_{eq(8)}$ at these NSLU and impacts would be less than significant at these locations.

Based on typical roadway construction practices, a typical daily work area would be 5 acres and have an average linear working distance of 300 feet. The nearest NSLU (residence at 3103 Mountain Ridge Road) would be approximately 45 feet from the centerline of construction. While construction activity would pass as close as 45 feet at the nearest point, based on the properties of a right triangle, the average distance would be 150 feet from the nearest receptor to the construction activities. Thus, the residence at 31013 Mountain Ridge Road would be located approximately 150 feet from the center of construction activity associated with the construction of Mountain Ridge Road. At 150 feet, short-term noise levels may reach as high as 85 dBA L_{max} for very short periods, typically less than a few seconds, as pieces of equipment pass by with the engines under full load. Average hourly noise levels would be approximately 71 dB(A) L_{eq} at 31013 Mountain Ridge Road, which would comply with the County standards of 75 dB(A) $L_{eq(8)}$.

Thus, impacts to local NSLU, including 31013 Mountain Ridge Road, from construction of Mountain Ridge Road would be **less than significant**.

Development of this Alternative would not require additional pile driving or blasting beyond what is proposed for the project. All impacts associated with construction activities are address in the Noise Report. No new construction related impacts are identified under this Alternative.

Construction Vibration Analysis

As discussed in the project noise report, vibration levels associated with construction equipment used in roadway construction (i.e., bulldozers and trucks) would range from approximately 0.003 to 0.089 in/sec PPV (58 to 87 vibration decibels (VdB) at 25 feet. Based on the FTA's recommended procedure for calculating vibration levels from construction, vibration levels would exceed County thresholds (0.004 root mean square [RMS]) within 150 feet of a large bulldozer but would be below the County's threshold for a small bulldozer as close as 15 feet from the equipment. Thus, the Alternative would potentially result in vibration impacts to residences within 150 feet of Mountain Ridge Road depending on the intensity of the activity and equipment used.

With the exception of 31013 Mountain Ridge Road, the physical residences on all other properties are located at least150 feet from the Mountain Ridge Road alignment. The residence at 31013 Mountain Ridge Road would be located approximately 45 feet from construction activities on Mountain Ridge Road and would be potentially exposed to vibration levels ranging from 0.001 to 0.04 RMS. These estimated vibration amplitudes are typical worst-case values, actual vibration levels from the specific equipment used by a contractor may result in vibration amplitudes that are lower than the estimated values. In addition to the variability of the equipment as a vibration source, the intervening soil characteristics and the subsurface conditions greatly affect the propagation of vibrations between a source and a receiver. Many factors affect vibration damping in soil, including soil type, moisture content, temperature, and the frequency of the vibration sources. As an example, clays exhibit higher attenuation than sandy soils and wet sand attenuates less than dry sand (Caltrans 2013).

As the vibration propagation calculations indicate vibration levels may exceed the County's threshold, mitigation measure MM-N-1 would be required for the Alternative. MM-N-1 requires that when construction occurs within 150 feet of an occupied residence, a construction vibration monitoring plan will be implemented to verify vibrations from construction on Mountain Ridge Road does not exceed 0.004 RMS at the nearest residence. If measured vibrations exceed 0.004 RMS at the nearest residence, a vibration reduction plan would be developed to reduce vibrations through use of smaller equipment, rubber tired equipment, or alternative construction techniques. Thus, with the implementation of the MM-N-1, vibrations impacts under the Alternative would be **less than significant**. As such, the potential impacts from vibration associated with the construction of Mountain Ridge Road do not represent a new impact as compared to the proposed project.

MM-N-1 Prior to beginning construction of any project component within 150 feet of an existing or future 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 data shall be sent to the County Noise Control Officer or designee on a weekly basis or more frequently as determined by the County 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 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 include in the report. The vibration monitors shall be calibrated within one year of the measurement and the 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 vs. 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.

The Mountain Ridge Road Fire Station Alternative would not involve blasting or pile driving to widen Mountain Ridge Road and, thus those activities would not result in additional impacts over the project.

Operational Impact Analysis

Traffic Noise

Based on a review of the TIS prepared for this Alternative, including Mountain Ridge Road, which is discussed separately, this Alternative would result in traffic volume changes, increases and decreases, for 11 of the roadway segments modeled under Traffic Scenario E (project build-out without cumulative traffic); as well as 12 roadway segments associated with the Existing plus Cumulative plus Project condition (project build-out with cumulative traffic). The average daily traffic volumes along these segments are shown in Table 4. As each of these two scenarios depict build-out of the Alternative (one without and one with cumulative traffic), these scenarios depict maximum traffic level under and, correspondingly, maximum vehicle noise levels under the Alternative. With five exceptions, including Mountain Ridge Road, the changes in traffic volumes that would result due to the redistribution of traffic under the Alternative (compared to the proposed project) would be decreases; that is traffic volumes under the Alternative would increase on only five segments.

The 10 roadway segments affected by the redistribution of traffic under the Alternative, excluding those segments of Mountain Ridge Road that would be affected by the Alternative, are listed in Tables 4 and 5, along with the associated change in direct and cumulative traffic noise levels, respectively, as compared to the proposed project.

TABLE 4
AVERAGE DAILY TRAFFIC VOLUMES FOR THE PROPOSED PROJECT AND ALTERNATIVE

Roadway	From	To	Proposed Project		Alternative	
			Build-out	Cumulative	Build-out	Cumulative
W. Lilac Road	Old Highway 395	W. Main Street	13,400	13,480	11,590	11,660
W. Lilac Road	W. Main Street	E. Main Street	2,960	3,110	2,960	3,030
Gopher Canyon Rd.	I-15 SB Ramps	I-15 NB Ramps	13,320	18,340	14,080	19,100
Gopher Canyon Rd.	I-15 NB Ramps	Old Highway 395	13,140	18,160	14,500	19,530
Circle R Dr.	Old Highway 395	Mountain Ridge Rd.	5,210	6,720	7,030	8,540
Mountain Ridge Rd	Lilac Hills Ranch Rd	Circle R Drive	1,000	1,020	3,290	3,300
Old Highway 395	W. Lilac Rd.	I-15 SB Ramps	11,340	14,060	9,520	12,960
Old Highway 395	I-15 SB Ramps	I-15 NB Ramps	7,450	11,100	6,230	10,140
Old Highway 395	I-15 NB Ramps	Camino Del Rey	3,640	6,820	3,190	6,370
Old Highway 395	Camino Del Rey	Circle R Dr.	7,100	9,520	6,650	9,060
Old Highway 395	Circle R Dr.	Gopher Canyon Rd.	12,370	15,390	13,740	16,040
I-15	Old Highway 395	Gopher Canyon Rd	114,000	167,300	112,700	166,170

[1]See Table 11, Lilac Hills Noise Technical Report (RECON 2014).

As shown in Table 5, at build-out, this Alternative would result in decreased noise levels at 6 of the 11 segments because of reduced traffic volumes along West Lilac Road between Old Highway 395 and West Main Street, along Gopher Canyon Road, between the I-15 southbound ramps and Old Highway 395, along Old Highway 395, between the I-15 northbound ramps and Gopher Canyon Road, and along the I-15 between Highway 395 and Gopher Canyon Road. Increases in traffic noise, aside from increases along Mountain Ridge Road, would occur along Circle R Drive between Old Highway 395 and Mountain Ridge Road, along Gopher Canyon Road between the I-15 southbound ramps and Old Highway, and along Old Highway 395 between Circle R Drive and Gopher Canyon Road. The greatest increase (1.3 CNEL) occurs along Circle R Drive between Old Highway 395 and Mountain Ridge Road under Traffic Scenario C..

TABLE 5
CHANGES IN OFF-SITE OPERATIONAL NOISE LEVELS BETWEEN THE PROPOSED PROJECT AND THE ALTERNATIVE UNDER TRAFFIC SCENARIO E

Roadway	From	To	Noise Level at Build-out of Proposed Project[1] CNEL	Noise Level at Build-out of Alternative CNEL	Change dB(A)
W. Lilac Road	Old Highway 395	W. Main Street	66.7	66.1	-0.6
Gopher Canyon Rd.	I-15 SB Ramps	I-15 NB Ramps	67.8	68.0	0.2
Gopher Canyon Rd.	I-15 NB Ramps	Old Highway 395	65.4	65.8	0.4
Circle R Dr.	Old Highway 395	Mountain Ridge Rd.	62.6	63.9	1.3
Old Highway 395	W. Lilac Rd.	I-15 SB Ramps	64.1	63.3	-0.8
Old Highway 395	I-15 SB Ramps	I-15 NB Ramps	61.0	60.2	-0.8
Old Highway 395	I-15 NB Ramps	Camino Del Rey	63.9	63.3	-0.6
Old Highway 395	Camino Del Rey	Circle R Dr.	66.3	66.0	-0.3
Old Highway 395	Circle R Dr.	Gopher Canyon Rd.	65.0	65.5	0.5
I-15	Old Highway 395	Gopher Canyon Rd	81	81	<-0.1

As shown in Table 6, under cumulative plus project conditions the Alternative would result in decreased noise levels because of reduced traffic volumes along West Lilac Road between Old Highway 395 and intersection with East Main Street, along Old Highway 395, between the I-15 northbound ramps and Circle R Drive. The decrease in traffic volumes is due to the redistribution of traffic to Mountain Ridge Road, which would be improved from a private road to a Rural Residential Collector. Improving Mountain Ridge Road would allow greater traffic flow both in and out of the southern portion of the site. As shown in Table 6, increases in traffic noise, aside from along Mountain Ridge Road, would be along Circle R Drive, from Old Highway 395 to Mountain Ridge Road, along Gopher Canyon Road, between the I-15 northbound ramps and Old Highway, and along Old Highway 395 between Circle R Drive and Gopher Canyon Road. As shown in Tables 5 and 6, the greatest increase (1.3 CNEL) would occur along Circle R Drive between Old Highway 395 and Mountain Ridge Road under Traffic Scenario E.

TABLE 6
CHANGES IN CUMULATIVE OFF-SITE OPERATIONAL NOISE LEVELS BETWEEN THE PROPOSED PROJECT AND THE ALTERNATIVE UNDER CUMULATIVE CONDITIONS

Roadway	From	To	Future Cumulative Noise Level of Proposed Project[1] CNEL	Future Cumulative Noise Level of Alternative CNEL	Cumulative Change dB(A)
W. Lilac Road	Old Highway 395	W. Main Street	66.7	66.1	-0.6
W. Lilac Road	W. Main Street	E. Main Street	60.3	60.2	-0.1
Gopher Canyon Rd.	I-15 SB Ramps	I-15 NB Ramps	69.2	69.4	0.2
Gopher Canyon Rd.	I-15 NB Ramps	Old Highway 395	66.8	67.1	0.3
Circle R Dr.	Old Highway 395	Mountain Ridge Rd.	63.7	64.7	1.0
Old Highway 395	W. Lilac Rd.	I-15 SB Ramps	65.9	65.5	-0.4
Old Highway 395	I-15 SB Ramps	I-15 NB Ramps	63.8	63.4	-0.4
Old Highway 395	I-15 NB Ramps	Camino Del Rey	65.2	64.9	-0.3
Old Highway 395	Camino Del Rey	Circle R Dr.	67.3	67.1	-0.2
Old Highway 395	Circle R Dr.	Gopher Canyon Rd.	65.4	65.6	0.2
I-15	Old Highway 395	Gopher Canyon Rd	81	80.9	<-0.1

[1]See Table 13, Lilac Hills Noise Technical Report (RECON 2014).

As discussed in the noise report for the Lilac Hills Ranch project, the existing noise level along this segment is 62.6 CNEL, and while future noise levels would increase along this segment by 2.7 CNEL, the project's cumulative contribution was not measureable. However, with the redistribution of traffic under the Alternative the project would contribute 1.0 CNEL to the cumulative increase along this segment. While this increases the project's cumulative contribution, the project's contribution is less than 2 CNEL; therefore, the Alternative would does not result in any different cumulatively considerable impacts than the project.

Detailed plans with proposed roadway elevation were available for this alternative; thus, as with the traffic noise modeling for Phase 1 of the proposed project, detailed modeling for the Alternative under the cumulative condition was conducted. The same receivers and numbers as used in the proposed project noise analysis were modeled. The modeling utilized the proposed grading contours and lane locations for the proposed Mountain Ridge Road alignment. The results of the detailed modeling for each receiver along Mountain Ridge Road are provided in Table 7. The noise contours are shown on Figure 4. (Note: As the cumulative scenario represents the scenario with the highest traffic volumes, the cumulative scenario the maximum foreseeable traffic noise levels.)

TABLE 7
CHANGES IN CUMULATIVE OPERATIONAL NOISE LEVEL ALONG MOUNTAIN RIDGE ROAD BETWEEN THE PROPOSED PROJECT AND ALTERNATIVE

	Cumulative Noise Levels (CNEL)		
Receiver	Proposed Project[1]*	Alternative	Delta Proposed Project vs. Alternative
65	51	51	0
117	47	49	2
118	47	46	-1
120	48	44	-4
149	47	46	-1
150	52	50	-2
151	46	48	2
152	49	56	7
153	44	47	3

[1]See Table 12, Lilac Hills Noise Technical Report (RECON 2014)
*Existing and project noise levels are based on conservative traffic noise modeling that does not include topography or other factors that affect the propagation of noise.

As shown in Table 7 and on Figure 4, none of the properties along the proposed Mountain Ridge Road alignment would be exposed to noise levels in excess of the County Land Use and Noise Compatibility Guidelines; and thus would not require mitigation to be compatible. Additionally, Table 7 indicates the traffic noise levels changes would range from -2 to 7, depending on the shielding or lack of shielding provided by the proposed grading for Mountain Ridge Road.

Based on the traffic volume increase shown in Table 4, there would likely be a noticeable increase of up to 5 CNEL in traffic noise under the Alternative over the proposed project as traffic volumes on Mountain Ridge Road would more than double under the Alternative. Additionally, although project related traffic contributions would be anticipated to increase noise levels along this roadway, the increase would not exceed a 10 decibel increase and would not exceed the 60 CNEL requirement pursuant to the County Noise Element for existing noise sensitive land uses. Thus, additional traffic along Mountain Ridge Road for both the project and alternative scenarios would not result in an off-site direct cumulative noise impact As such, no new traffic-related significant noise impacts are identified under this Alternative.

Stationary

The fire station proposed under the Alternative would be developed in Phase 5 and would be located adjacent to Lilac Hills Ranch Road and adjacent to residential and institutional uses. Noise sources associated with the fire station would include vehicles accessing the station, mechanical ventilation, as well as occasional alarms and sirens. The alarms and sirens associated with operation of the fire station are exempt from the County noise ordinance and, due to the limited time they would sound, would not result in significant impacts. The noise generated by the ventilation equipment could potentially result in unacceptable noise levels at the directly adjacent institutional uses. However, as noted above, the Alternative would be subject to all of the mitigation measures identified in connection with the proposed project, as well as the noise-related design features, such as (but not limited to), screening of mechanical equipment, noise barriers, increased setbacks, layout and shielding from proposed structures, etc . This would include the completion of acoustical noise analysis and Best engineering practices to ensure noise levels are in compliance with County regulations. Compliance with project design features and mitigation measures would reduce potential impacts to less than significant.

Summary

This technical memorandum analyzes potential noise impacts associated with the Mountain Ridge Road Fire Station Alternative as compared to the proposed Lilac Hill Ranch project. As explained above, no new or additional significant construction noise impacts would occur as a result of the construction of the Alternative. Likewise, operational noise under this Alternative, including increased noise associated with increased vehicle trips, would not result in a substantial increase in noise levels as compared to the project. In summary, both the proposed project and the Alternative would result in the same significant impacts related to noise. With respect to vibration, the Alternative could result in a significant impact where construction would occur within 150 feet of an occupied residence. Implementation of mitigation measure MM-N-1 would reduce impacts to below a level of significance.

Sincerely,

William Maddux
Senior Air Quality and Noise Specialist

WAM:sh

Attachment

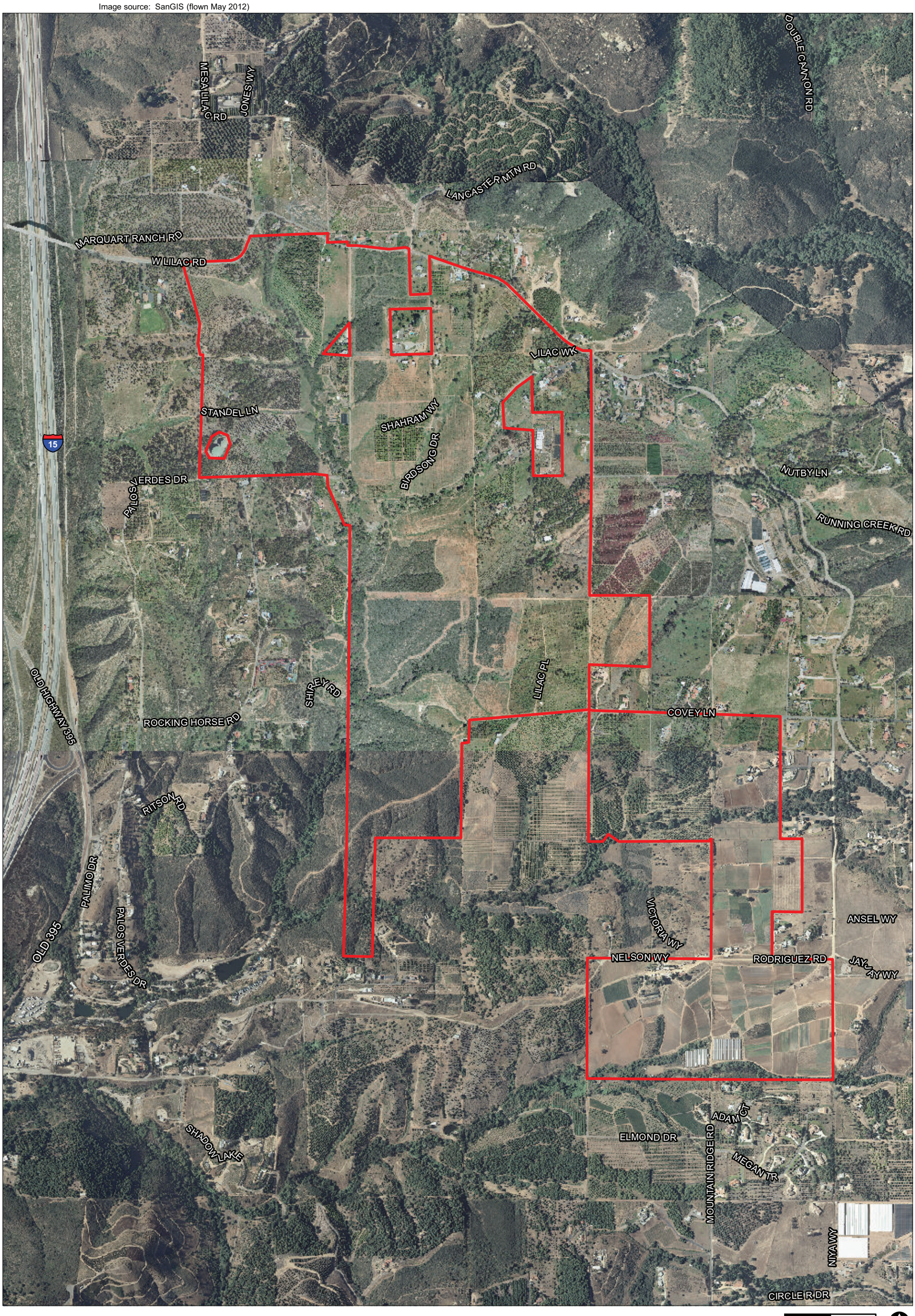
FIGURE 1

Regional Location

RECON

M:\JOBS4\6153\common_gis\fig1_air.mxd 1/14/2014 ccn

Image source: SanGIS (flown May 2012)



RECON

M:\JOBS4\6153\common_gis\fig2_air.mxd 1/14/2014

FIGURE 2

Project Location on an Aerial Photograph

Map Source: Development Design Services

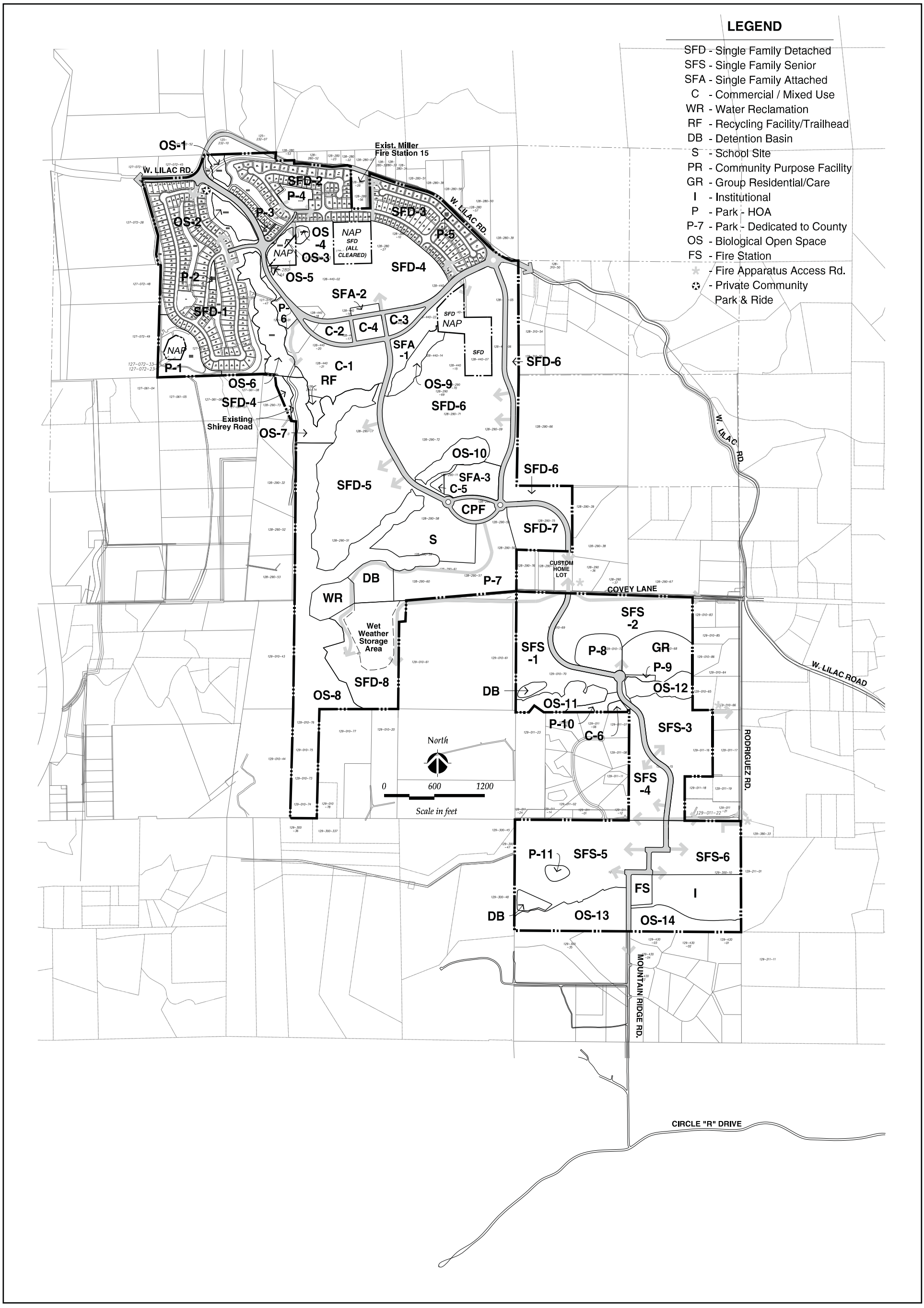


FIGURE 3
Mountain Ridge Road Fire Station Alternative – Land Use Plan

RECON

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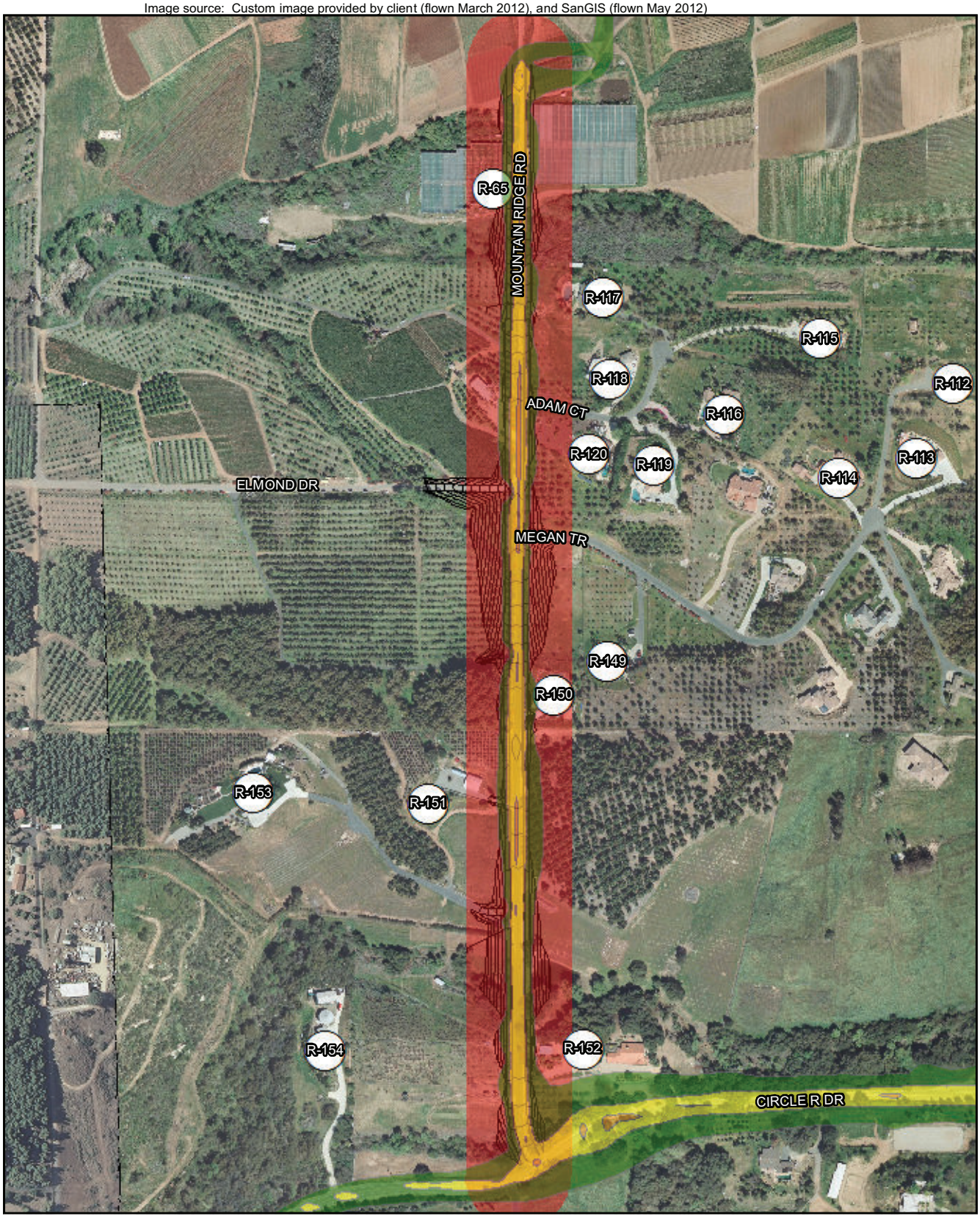
Image source: Custom image provided by client (flown March 2012), and SanGIS (flown May 2012)



R-153 Receiver

Proposed Mountain Ridge Road

Mountain Ridge Road Buffer (150 feet)

Mountain Ridge Road Noise Contours

60 CNEL

65 CNEL

70 CNEL

0 Feet 400

FIGURE 4

Mountain Ridge Road
Fire Station Alternative – Noise Contours

RECON

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ATTACHMENT 1

Stationing	ADT	Traffic values Vehicles type	day	Speed	Road surface
km	Veh/24h		Veh/h	km/h	
Rodriquez Road	Traffic direction: Both directions				
0+000	-				-
0+207	-				-
West Lilac Road - 10	Traffic direction: In entry direction				
3+289	16176	Total	674	-	Average (of DGAC and PCC)
3+289	16176	Automobiles	630	48	Average (of DGAC and PCC)
3+289	16176	Medium trucks	19	48	Average (of DGAC and PCC)
3+289	16176	Heavy trucks	14	48	Average (of DGAC and PCC)
3+289	16176	Buses	4	48	Average (of DGAC and PCC)
3+289	16176	Motorcycles	7	48	Average (of DGAC and PCC)
3+289	16176	Auxiliary Vehicle	-	-	Average (of DGAC and PCC)
4+592	6000	Total	250	-	Average (of DGAC and PCC)
4+592	6000	Automobiles	233	48	Average (of DGAC and PCC)
4+592	6000	Medium trucks	7	48	Average (of DGAC and PCC)
4+592	6000	Heavy trucks	5	48	Average (of DGAC and PCC)
4+592	6000	Buses	2	48	Average (of DGAC and PCC)
4+592	6000	Motorcycles	3	48	Average (of DGAC and PCC)
4+592	6000	Auxiliary Vehicle	-	-	Average (of DGAC and PCC)
6+311	-				-
Mountain Ridge Road	Traffic direction: In entry direction				
0+000	7992	Total	333	-	Average (of DGAC and PCC)
0+000	7992	Automobiles	310	56	Average (of DGAC and PCC)
0+000	7992	Medium trucks	10	56	Average (of DGAC and PCC)
0+000	7992	Heavy trucks	7	56	Average (of DGAC and PCC)
0+000	7992	Buses	2	56	Average (of DGAC and PCC)
0+000	7992	Motorcycles	4	56	Average (of DGAC and PCC)
0+000	7992	Auxiliary Vehicle	-	-	Average (of DGAC and PCC)
0+953	-				-
Lilac Hills Ranch Road1	Traffic direction: In entry direction				
1+264	3312	Total	138	-	Average (of DGAC and PCC)
1+264	3312	Automobiles	128	48	Average (of DGAC and PCC)
1+264	3312	Medium trucks	4	48	Average (of DGAC and PCC)
1+264	3312	Heavy trucks	2	48	Average (of DGAC and PCC)
1+264	3312	Buses	2	48	Average (of DGAC and PCC)
1+264	3312	Motorcycles	2	48	Average (of DGAC and PCC)
1+264	3312	Auxiliary Vehicle	-	-	Average (of DGAC and PCC)
2+224	-				-

No.	Receiver name	Coordinates X m	Y m	Floor	Height m	Limit L(Aeq1h) dB(A)	Level w/o NP L(Aeq1h) dB(A)
1	1	486551.88	3684455	1.Fl	278.87	60	22.3
2	2	486576.4	3684371	1.Fl	277.13	60	26.3
3	3	486670.61	3684468	1.Fl	270.37	60	27.1
4	4	486700.81	3684422	1.Fl	267	60	28.1
5	5	486743.21	3684457	1.Fl	267.29	60	28
6	6	486739.33	3684404	1.Fl	266.07	60	27.6
7	7	486761.17	3684333	1.Fl	265.06	60	28
8	8	486839.76	3684251	1.Fl	263.02	60	27.8
9	9	486870.67	3684169	1.Fl	252.59	60	26.1
10	10	486890.77	3684085	1.Fl	255.91	60	28.6
11	11	486898.02	3683968	1.Fl	253.6	60	27.7
12	12	486920.88	3683840	1.Fl	258.14	60	29.7
13	13	486963.59	3684354	1.Fl	260.73	60	23
14	14	486989.1	3684297	1.Fl	257.1	60	21.9
15	15	486926.6	3684394	1.Fl	261.19	60	23.4
16	17	486888.84	3684502	1.Fl	276.43	60	27.1
17	18	486898.12	3684546	1.Fl	276.43	60	23.8
18	19	486936.38	3684543	1.Fl	277.65	60	25.6
19	20	487004.81	3684539	1.Fl	280.7	60	28
20	21	487014.4	3684499	1.Fl	280.7	60	28.3
21	22	487046.69	3684479	1.Fl	279.03	60	26.3
22	23	487072.83	3684530	1.Fl	278.64	60	26.2
23	24	487169.52	3684516	1.Fl	274.43	60	24.2
24	25	487154.57	3684476	1.Fl	273.99	60	23.6
25	26	487265.05	3684515	1.Fl	275.66	60	23.6
26	27	487269.68	3684465	1.Fl	275.91	60	22.7
27	28	487364.58	3684487	1.Fl	280.97	60	27.3
28	29	487414.67	3684429	1.Fl	282.82	60	28.6
29	30	487462.59	3684459	1.Fl	284.16	60	28.3
30	31	487532.48	3684381	1.Fl	282.53	60	28.6
31	32	487578.88	3684412	1.Fl	282.68	60	28
32	33	487458.01	3684376	1.Fl	279.25	60	27.2
33	34	487565.88	3684313	1.Fl	274.81	60	26.2
34	35	487648.45	3684356	1.Fl	281.75	60	28.2
35	36	487717.35	3684286	1.Fl	279.86	60	27.8
36	37	487695.06	3684229	1.Fl	278.04	60	27.1
37	38	487771.07	3684231	1.Fl	277.93	60	27.6
38	39	487650.75	3684290	1.Fl	280.76	60	28.3
39	40	487634.17	3684244	1.Fl	276.1	60	26.3
40	41	487707.55	3684188	1.Fl	276.43	60	26.8
41	42	487652.56	3684144	1.Fl	272.14	60	26.5
42	43	487607.47	3684206	1.Fl	275.74	60	27
43	44	487637.35	3684161	1.Fl	273.56	60	26.2
44	45	487593.62	3684099	1.Fl	261.58	60	25.3

45	46	487338.11	3684059	1.Fl	257.57	60	27.1
46	47	487356.47	3684027	1.Fl	251.14	60	26.7
47	48	487191.14	3684031	1.Fl	259.71	60	27.3
48	49	487116.4	3683917	1.Fl	245.07	60	27.4
49	50	487308.05	3683874	1.Fl	239.56	60	25.5
50	51	487546.56	3683969	1.Fl	253.61	60	25.4
51	52	487450.59	3683862	1.Fl	248.09	60	25.7
52	53	487417.1	3683625	1.Fl	244.4	60	26.6
53	54	487817.64	3684068	1.Fl	263.48	60	23
54	55	487867.67	3683869	1.Fl	269.72	60	25.1
55	56	487853.05	3683679	1.Fl	269.72	60	28.3
56	57	487738.51	3683357	1.Fl	257.53	60	29
57	58	487740.04	3683230	1.Fl	254.6	60	32
58	59	488055.57	3683164	1.Fl	254.87	60	27.7
59	60	488041.98	3682829	1.Fl	257.53	60	37.8
60	61	488370.9	3682555	1.Fl	253.78	60	53
61	62	488434.81	3682312	1.Fl	264.58	60	54.2
62	63	488467.78	3682133	1.Fl	275.26	60	53.7
63	64	488419.57	3682036	1.Fl	269.72	60	56.8
64	66	485807.79	3684573	1.Fl	281.92	60	26.2
65	67	486443.12	3684388	1.Fl	281.92	60	21.2
66	68	486529.88	3684738	1.Fl	302.27	60	28.2
67	69	486679.04	3684737	1.Fl	285.51	60	27.4
68	70	486819.05	3684610	1.Fl	269.72	60	22.5
69	71	487062.52	3684587	1.Fl	286.03	60	28.5
70	72	487097.64	3684576	1.Fl	282.84	60	28.3
71	73	487203.47	3684562	1.Fl	281.49	60	26.8
72	74	487310.01	3684470	1.Fl	278	60	24
73	75	487318.2	3684582	1.Fl	283.87	60	28.5
74	76	487395.54	3684568	1.Fl	286.2	60	28.7
75	77	487426.83	3684538	1.Fl	286.32	60	28.6
76	78	487467.63	3684542	1.Fl	290.14	60	28.9
77	79	487061.17	3684223	1.Fl	260.09	60	21.2
78	80	487281.32	3684265	1.Fl	281.92	60	28.2
79	81	487523.78	3684531	1.Fl	292.66	60	29
80	83	487982.68	3684189	1.Fl	272.76	60	22.3
81	84	487682.12	3684037	1.Fl	268.89	60	26.7
82	85	487722.07	3683822	1.Fl	261.62	60	22.5
83	86	487970.1	3684096	1.Fl	269.72	60	22.7
84	87	487914.39	3684025	1.Fl	264.67	60	21.7
85	88	487970.29	3683985	1.Fl	267.29	60	20.6
86	89	488170.06	3684149	1.Fl	262.31	60	14.8
87	90	487913	3683138	1.Fl	252.44	60	29.3
88	91	488005.19	3683051	1.Fl	250.21	60	28.3
89	92	488202.86	3683084	1.Fl	275.9	60	29.7
90	93	488257.36	3683068	1.Fl	279.68	60	36.9
91	94	488617.54	3683086	1.Fl	280.12	60	34.6

92	95	488615.44	3683018	1.Fl	274.9	60	34.4
93	96	488574.29	3682936	1.Fl	269.72	60	33
94	97	488647.66	3682944	1.Fl	269.72	60	33
95	98	488570.87	3682860	1.Fl	269.72	60	34.1
96	99	488559.58	3682778	1.Fl	267.45	60	38.6
97	100	488559.44	3682606	1.Fl	255.76	60	39.8
98	101	488663.41	3682597	1.Fl	264.49	60	37.4
99	102	488524.14	3682304	1.Fl	270.44	60	46.5
100	103	488602.26	3682245	1.Fl	281.92	60	42.4
101	104	488559.96	3682238	1.Fl	281.92	60	44
102	105	488347.5	3681742	1.Fl	269.72	60	55.6
103	108	488383.05	3681586	1.Fl	282.73	60	51.6
104	109	488339.97	3681412	1.Fl	285.89	60	55.8
105	110	488392.96	3681415	1.Fl	286.39	60	50.3
106	111	488232.18	3681316	1.Fl	281.92	60	51.7
107	112	488398.42	3681101	1.Fl	281.92	60	57.2

Source name				Lane	Level w/o N L(Aeq1h) dB(A)	Level w. NP L(Aeq1h) dB(A)
1	1.Fl	22.3	0.0			
Lilac Hills Ranch Road				1	13.7	0
Mountain Ridge Road					16.2	0
Rodriquez Road					0	0
West Lilac Road - 10					20.2	0
2	1.Fl	26.3	0.0			
Lilac Hills Ranch Road				1	21.3	0
Mountain Ridge Road					17.5	0
Rodriquez Road					0	0
West Lilac Road - 10					23.7	0
3	1.Fl	27.1	0.0			
Lilac Hills Ranch Road				1	22.4	0
Mountain Ridge Road					22.6	0
Rodriquez Road					0	0
West Lilac Road - 10					22.1	0
4	1.Fl	28.1	0.0			
Lilac Hills Ranch Road				1	20.9	0
Mountain Ridge Road					23.9	0
Rodriquez Road					0	0
West Lilac Road - 10					24.4	0
5	1.Fl	28.0	0.0			
Lilac Hills Ranch Road				1	20.6	0
Mountain Ridge Road					23.7	0
Rodriquez Road					0	0
West Lilac Road - 10					24.5	0
6	1.Fl	27.6	0.0			
Lilac Hills Ranch Road				1	20.9	0
Mountain Ridge Road					23.2	0
Rodriquez Road					0	0
West Lilac Road - 10					24	0
7	1.Fl	28.0	0.0			
Lilac Hills Ranch Road				1	21.2	0
Mountain Ridge Road					23.4	0
Rodriquez Road					0	0
West Lilac Road - 10					24.4	0
8	1.Fl	27.8	0.0			
Lilac Hills Ranch Road				1	21.5	0
Mountain Ridge Road					23.1	0
Rodriquez Road					0	0
West Lilac Road - 10					24.1	0
9	1.Fl	26.1	0.0			
Lilac Hills Ranch Road				1	21.5	0
Mountain Ridge Road					20.3	0
Rodriquez Road					0	0

West Lilac Road - 10				22.1	0
10	1.Fl	28.6	0.0		
Lilac Hills Ranch Road1				22.6	0
Mountain Ridge Road				23.6	0
Rodriquez Road				0	0
West Lilac Road - 10				25	0
11	1.Fl	27.7	0.0		
Lilac Hills Ranch Road1				22.3	0
Mountain Ridge Road				22.7	0
Rodriquez Road				0	0
West Lilac Road - 10				23.6	0
12	1.Fl	29.7	0.0		
Lilac Hills Ranch Road1				23.9	0
Mountain Ridge Road				25.7	0
Rodriquez Road				0	0
West Lilac Road - 10				24.9	0
13	1.Fl	23.0	0.0		
Lilac Hills Ranch Road1				17.6	0
Mountain Ridge Road				16.4	0
Rodriquez Road				0	0
West Lilac Road - 10				20	0
14	1.Fl	21.9	0.0		
Lilac Hills Ranch Road1				10.7	0
Mountain Ridge Road				17.5	0
Rodriquez Road				0	0
West Lilac Road - 10				19.4	0
15	1.Fl	23.4	0.0		
Lilac Hills Ranch Road1				19.3	0
Mountain Ridge Road				16.7	0
Rodriquez Road				0	0
West Lilac Road - 10				19.4	0
18	1.Fl	23.8	0.0		
Lilac Hills Ranch Road1				20.5	0
Mountain Ridge Road				22.6	0
Rodriquez Road				0	0
West Lilac Road - 10				23.3	0
19	1.Fl	25.6	0.0		
Lilac Hills Ranch Road1				19.5	0
Mountain Ridge Road				16	0
Rodriquez Road				0	0
West Lilac Road - 10				20.5	0
20	1.Fl	28.0	0.0		
Lilac Hills Ranch Road1				19.3	0
Mountain Ridge Road				21.3	0
Rodriquez Road				0	0
West Lilac Road - 10				21.5	0
21	1.Fl	28.3	0.0		

Lilac Hills Ranch Road	1			20.8	0
Mountain Ridge Road				25.4	0
Rodriquez Road				0	0
West Lilac Road - 10				22.1	0
22	1.Fl	26.3	0.0		
Lilac Hills Ranch Road	1			20.6	0
Mountain Ridge Road				25.8	0
Rodriquez Road				0	0
West Lilac Road - 10				22.5	0
23	1.Fl	26.2	0.0		
Lilac Hills Ranch Road	1			19.8	0
Mountain Ridge Road				22.6	0
Rodriquez Road				0	0
West Lilac Road - 10				21.9	0
24	1.Fl	24.2	0.0		
Lilac Hills Ranch Road	1			20.6	0
Mountain Ridge Road				22.2	0
Rodriquez Road				0	0
West Lilac Road - 10				21.5	0
25	1.Fl	23.6	0.0		
Lilac Hills Ranch Road	1			19.1	0
Mountain Ridge Road				19.3	0
Rodriquez Road				0	0
West Lilac Road - 10				19.9	0
26	1.Fl	23.6	0.0		
Lilac Hills Ranch Road	1			18.6	0
Mountain Ridge Road				18.1	0
Rodriquez Road				0	0
West Lilac Road - 10				19.6	0
27	1.Fl	22.7	0.0		
Lilac Hills Ranch Road	1			19.1	0
Mountain Ridge Road				17.4	0
Rodriquez Road				0	0
West Lilac Road - 10				19.7	0
28	1.Fl	27.3	0.0		
Lilac Hills Ranch Road	1			19	0
Mountain Ridge Road				15.9	0
Rodriquez Road				0	0
West Lilac Road - 10				18.4	0
29	1.Fl	28.6	0.0		
Lilac Hills Ranch Road	1			20.7	0
Mountain Ridge Road				24.1	0
Rodriquez Road				0	0
West Lilac Road - 10				22	0
30	1.Fl	28.3	0.0		
Lilac Hills Ranch Road	1			23.3	0
Mountain Ridge Road				24.5	0

Rodriquez Road				0	0
West Lilac Road - 10				23.6	0
31	1.Fl	28.6	0.0		
Lilac Hills Ranch Road1				23	0
Mountain Ridge Road				24.5	0
Rodriquez Road				0	0
West Lilac Road - 10				22.8	0
32	1.Fl	28.0	0.0		
Lilac Hills Ranch Road1				23.2	0
Mountain Ridge Road				24.9	0
Rodriquez Road				0	0
West Lilac Road - 10				23	0
33	1.Fl	27.2	0.0		
Lilac Hills Ranch Road1				22.7	0
Mountain Ridge Road				24.3	0
Rodriquez Road				0	0
West Lilac Road - 10				22.6	0
34	1.Fl	26.2	0.0		
Lilac Hills Ranch Road1				19.5	0
Mountain Ridge Road				23.2	0
Rodriquez Road				0	0
West Lilac Road - 10				23.5	0
35	1.Fl	28.2	0.0		
Lilac Hills Ranch Road1				19.7	0
Mountain Ridge Road				22.1	0
Rodriquez Road				0	0
West Lilac Road - 10				22.1	0
36	1.Fl	27.8	0.0		
Lilac Hills Ranch Road1				22.4	0
Mountain Ridge Road				24.6	0
Rodriquez Road				0	0
West Lilac Road - 10				22.9	0
37	1.Fl	27.1	0.0		
Lilac Hills Ranch Road1				22.6	0
Mountain Ridge Road				23.3	0
Rodriquez Road				0	0
West Lilac Road - 10				23.2	0
38	1.Fl	27.6	0.0		
Lilac Hills Ranch Road1				20.4	0
Mountain Ridge Road				23.2	0
Rodriquez Road				0	0
West Lilac Road - 10				22.9	0
39	1.Fl	28.3	0.0		
Lilac Hills Ranch Road1				20.9	0
Mountain Ridge Road				22.8	0
Rodriquez Road				0	0
West Lilac Road - 10				24.2	0

40	1.Fl	26.3	0.0		
Lilac Hills Ranch Road	1			22.7	0
Mountain Ridge Road				24.8	0
Rodriquez Road				0	0
West Lilac Road - 10				22.9	0
41	1.Fl	26.8	0.0		
Lilac Hills Ranch Road	1			20.2	0
Mountain Ridge Road				22	0
Rodriquez Road				0	0
West Lilac Road - 10				22.1	0
42	1.Fl	26.5	0.0		
Lilac Hills Ranch Road	1			20.4	0
Mountain Ridge Road				22.7	0
Rodriquez Road				0	0
West Lilac Road - 10				22.6	0
43	1.Fl	27.0	0.0		
Lilac Hills Ranch Road	1			20.5	0
Mountain Ridge Road				22.2	0
Rodriquez Road				0	0
West Lilac Road - 10				22.2	0
44	1.Fl	26.2	0.0		
Lilac Hills Ranch Road	1			20.3	0
Mountain Ridge Road				22.6	0
Rodriquez Road				0	0
West Lilac Road - 10				23.4	0
45	1.Fl	25.3	0.0		
Lilac Hills Ranch Road	1			20.2	0
Mountain Ridge Road				22.2	0
Rodriquez Road				0	0
West Lilac Road - 10				21.8	0
46	1.Fl	27.1	0.0		
Lilac Hills Ranch Road	1			20.2	0
Mountain Ridge Road				20.4	0
Rodriquez Road				0	0
West Lilac Road - 10				21	0
47	1.Fl	26.7	0.0		
Lilac Hills Ranch Road	1			21.1	0
Mountain Ridge Road				22.9	0
Rodriquez Road				0	0
West Lilac Road - 10				22.8	0
48	1.Fl	27.3	0.0		
Lilac Hills Ranch Road	1			21.2	0
Mountain Ridge Road				22.2	0
Rodriquez Road				0	0
West Lilac Road - 10				22.5	0
49	1.Fl	27.4	0.0		
Lilac Hills Ranch Road	1			22	0

Mountain Ridge Road				22.7	0
Rodriquez Road				0	0
West Lilac Road - 10				22.7	0
50	1.Fl	25.5	0.0		
Lilac Hills Ranch Road1				22.5	0
Mountain Ridge Road				22	0
Rodriquez Road				0	0
West Lilac Road - 10				23.4	0
51	1.Fl	25.4	0.0		
Lilac Hills Ranch Road1				21.2	0
Mountain Ridge Road				19.1	0
Rodriquez Road				0	0
West Lilac Road - 10				21.5	0
52	1.Fl	25.7	0.0		
Lilac Hills Ranch Road1				20.8	0
Mountain Ridge Road				19.7	0
Rodriquez Road				0	0
West Lilac Road - 10				21.2	0
53	1.Fl	26.6	0.0		
Lilac Hills Ranch Road1				22.1	0
Mountain Ridge Road				18.9	0
Rodriquez Road				0	0
West Lilac Road - 10				21.2	0
54	1.Fl	23.0	0.0		
Lilac Hills Ranch Road1				23.2	0
Mountain Ridge Road				20.8	0
Rodriquez Road				0	0
West Lilac Road - 10				21.1	0
55	1.Fl	25.1	0.0		
Lilac Hills Ranch Road1				20	0
Mountain Ridge Road				16.8	0
Rodriquez Road				0	0
West Lilac Road - 10				17.1	0
56	1.Fl	28.3	0.0		
Lilac Hills Ranch Road1				22.8	0
Mountain Ridge Road				17.6	0
Rodriquez Road				0	0
West Lilac Road - 10				18.6	0
57	1.Fl	29.0	0.0		
Lilac Hills Ranch Road1				22.5	0
Mountain Ridge Road				24.1	0
Rodriquez Road				0	0
West Lilac Road - 10				23.7	0
58	1.Fl	32.0	0.0		
Lilac Hills Ranch Road1				25.6	0
Mountain Ridge Road				20.5	0
Rodriquez Road				0	0

West Lilac Road - 10				25	0
59	1.Fl	27.7	0.0		
Lilac Hills Ranch Road1				28	0
Mountain Ridge Road				27.1	0
Rodriquez Road				0	0
West Lilac Road - 10				26.3	0
60	1.Fl	37.8	0.0		
Lilac Hills Ranch Road1				25	0
Mountain Ridge Road				21.9	0
Rodriquez Road				0	0
West Lilac Road - 10				20.9	0
61	1.Fl	53.0	0.0		
Lilac Hills Ranch Road1				37.5	0
Mountain Ridge Road				21.9	0
Rodriquez Road				0	0
West Lilac Road - 10				23.6	0
62	1.Fl	54.2	0.0		
Lilac Hills Ranch Road1				53	0
Mountain Ridge Road				20.5	0
Rodriquez Road				0	0
West Lilac Road - 10				25.1	0
63	1.Fl	53.7	0.0		
Lilac Hills Ranch Road1				54.2	0
Mountain Ridge Road				22.7	0
Rodriquez Road				0	0
West Lilac Road - 10				24.5	0
64	1.Fl	56.8	0.0		
Lilac Hills Ranch Road1				53.5	0
Mountain Ridge Road				41.5	0
Rodriquez Road				0	0
West Lilac Road - 10				29.8	0
66	1.Fl	26.2	0.0		
Lilac Hills Ranch Road1				56.5	0
Mountain Ridge Road				44.6	0
Rodriquez Road				0	0
West Lilac Road - 10				30.2	0
68	1.Fl	28.2	0.0		
Lilac Hills Ranch Road1				19.6	0
Mountain Ridge Road				22.7	0
Rodriquez Road				0	0
West Lilac Road - 10				21.3	0
69	1.Fl	27.4	0.0		
Lilac Hills Ranch Road1				17.4	0
Mountain Ridge Road				15	0
Rodriquez Road				0	0
West Lilac Road - 10				16.6	0
70	1.Fl	22.5	0.0		

Lilac Hills Ranch Road1				22	0
Mountain Ridge Road				23.6	0
Rodriquez Road				0	0
West Lilac Road - 10				24.3	0
71	1.Fl	28.5	0.0		
Lilac Hills Ranch Road1				20.5	0
Mountain Ridge Road				23.7	0
Rodriquez Road				0	0
West Lilac Road - 10				23.1	0
72	1.Fl	28.3	0.0		
Lilac Hills Ranch Road1				18.1	0
Mountain Ridge Road				15.9	0
Rodriquez Road				0	0
West Lilac Road - 10				18.6	0
73	1.Fl	26.8	0.0		
Lilac Hills Ranch Road1				20.4	0
Mountain Ridge Road				26.4	0
Rodriquez Road				0	0
West Lilac Road - 10				22.1	0
74	1.Fl	24.0	0.0		
Lilac Hills Ranch Road1				20.4	0
Mountain Ridge Road				26.3	0
Rodriquez Road				0	0
West Lilac Road - 10				21.5	0
75	1.Fl	28.5	0.0		
Lilac Hills Ranch Road1				19	0
Mountain Ridge Road				23.7	0
Rodriquez Road				0	0
West Lilac Road - 10				22.3	0
76	1.Fl	28.7	0.0		
Lilac Hills Ranch Road1				19.7	0
Mountain Ridge Road				18	0
Rodriquez Road				0	0
West Lilac Road - 10				19.9	0
77	1.Fl	28.6	0.0		
Lilac Hills Ranch Road1				22.2	0
Mountain Ridge Road				23.7	0
Rodriquez Road				0	0
West Lilac Road - 10				24.9	0
78	1.Fl	28.9	0.0		
Lilac Hills Ranch Road1				23.8	0
Mountain Ridge Road				24.1	0
Rodriquez Road				0	0
West Lilac Road - 10				24	0
79	1.Fl	21.2	0.0		
Lilac Hills Ranch Road1				22.9	0
Mountain Ridge Road				24.3	0

Rodriquez Road				0	0
West Lilac Road - 10				24.1	0
80	1.Fl	28.2	0.0		
Lilac Hills Ranch Road1				22.9	0
Mountain Ridge Road				24.8	0
Rodriquez Road				0	0
West Lilac Road - 10				24.4	0
81	1.Fl	29.0	0.0		
Lilac Hills Ranch Road1				18.7	0
Mountain Ridge Road				12	0
Rodriquez Road				0	0
West Lilac Road - 10				16.1	0
83	1.Fl	22.3	0.0		
Lilac Hills Ranch Road1				21.9	0
Mountain Ridge Road				25.1	0
Rodriquez Road				0	0
West Lilac Road - 10				22.7	0
84	1.Fl	26.7	0.0		
Lilac Hills Ranch Road1				22.8	0
Mountain Ridge Road				24.8	0
Rodriquez Road				0	0
West Lilac Road - 10				24.8	0
86	1.Fl	22.7	0.0		
Lilac Hills Ranch Road1				18.7	0
Mountain Ridge Road				12.9	0
Rodriquez Road				0	0
West Lilac Road - 10				18.9	0
87	1.Fl	21.7	0.0		
Lilac Hills Ranch Road1				20.8	0
Mountain Ridge Road				22.3	0
Rodriquez Road				0	0
West Lilac Road - 10				22.4	0
88	1.Fl	20.6	0.0		
Lilac Hills Ranch Road1				18	0
Mountain Ridge Road				15.1	0
Rodriquez Road				0	0
West Lilac Road - 10				19.1	0
89	1.Fl	14.8	0.0		
Lilac Hills Ranch Road1				18	0
Mountain Ridge Road				15.8	0
Rodriquez Road				0	0
West Lilac Road - 10				19.3	0
90	1.Fl	29.3	0.0		
Lilac Hills Ranch Road1				18.1	0
Mountain Ridge Road				15.7	0
Rodriquez Road				0	0
West Lilac Road - 10				16.4	0

91	1.Fl	28.3	0.0		
Lilac Hills Ranch Road	1			17.8	0
Mountain Ridge Road				12.8	0
Rodriquez Road				0	0
West Lilac Road - 10				15.4	0
92	1.Fl	29.7	0.0		
Lilac Hills Ranch Road	1			12.9	0
Mountain Ridge Road				6.9	0
Rodriquez Road				0	0
West Lilac Road - 10				7.8	0
93	1.Fl	36.9	0.0		
Lilac Hills Ranch Road	1			26.9	0
Mountain Ridge Road				21.1	0
Rodriquez Road				0	0
West Lilac Road - 10				23.7	0
94	1.Fl	34.6	0.0		
Lilac Hills Ranch Road	1			25.9	0
Mountain Ridge Road				21	0
Rodriquez Road				0	0
West Lilac Road - 10				22	0
95	1.Fl	34.4	0.0		
Lilac Hills Ranch Road	1			26.4	0
Mountain Ridge Road				24.2	0
Rodriquez Road				0	0
West Lilac Road - 10				23.7	0
96	1.Fl	33.0	0.0		
Lilac Hills Ranch Road	1			35.6	0
Mountain Ridge Road				28.3	0
Rodriquez Road				0	0
West Lilac Road - 10				27.6	0
97	1.Fl	33.0	0.0		
Lilac Hills Ranch Road	1			32.7	0
Mountain Ridge Road				26.4	0
Rodriquez Road				0	0
West Lilac Road - 10				27.9	0
98	1.Fl	34.1	0.0		
Lilac Hills Ranch Road	1			32.2	0
Mountain Ridge Road				25.4	0
Rodriquez Road				0	0
West Lilac Road - 10				28.9	0
99	1.Fl	38.6	0.0		
Lilac Hills Ranch Road	1			31.1	0
Mountain Ridge Road				23.2	0
Rodriquez Road				0	0
West Lilac Road - 10				27.1	0
100	1.Fl	39.8	0.0		
Lilac Hills Ranch Road	1			31.4	0

Mountain Ridge Road				22.4	0
Rodriquez Road				0	0
West Lilac Road - 10				26.4	0
101	1.Fl	37.4	0.0		
Lilac Hills Ranch Road1				32.8	0
Mountain Ridge Road				23.4	0
Rodriquez Road				0	0
West Lilac Road - 10				26.7	0
102	1.Fl	46.5	0.0		
Lilac Hills Ranch Road1				38.2	0
Mountain Ridge Road				22.8	0
Rodriquez Road				0	0
West Lilac Road - 10				26.6	0
103	1.Fl	42.4	0.0		
Lilac Hills Ranch Road1				39.5	0
Mountain Ridge Road				21.8	0
Rodriquez Road				0	0
West Lilac Road - 10				27.5	0
104	1.Fl	44.0	0.0		
Lilac Hills Ranch Road1				37	0
Mountain Ridge Road				23	0
Rodriquez Road				0	0
West Lilac Road - 10				24.4	0
105	1.Fl	55.6	0.0		
Lilac Hills Ranch Road1				46.4	0
Mountain Ridge Road				20.9	0
Rodriquez Road				0	0
West Lilac Road - 10				24.7	0
108	1.Fl	51.6	0.0		
Lilac Hills Ranch Road1				41.1	0
Mountain Ridge Road				35.2	0
Rodriquez Road				0	0
West Lilac Road - 10				30.5	0
109	1.Fl	55.8	0.0		
Lilac Hills Ranch Road1				43	0
Mountain Ridge Road				36.2	0
Rodriquez Road				0	0
West Lilac Road - 10				29.8	0
110	1.Fl	50.3	0.0		
Lilac Hills Ranch Road1				42.9	0
Mountain Ridge Road				55.4	0
Rodriquez Road				0	0
West Lilac Road - 10				27.3	0