HELIX
Environmental Planning

Verizon Wireless Telecommunications Facility "Lost Hills"

Noise Impact Analysis

January 14, 2015

Project Proponent:
Core Development Services
2749 Saturn Street
Brea, California 92821

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COMMUNITY DEVELOPMENT
PLANNING DEPT.

Prepared for:
Verizon Wireless
15505 Sand Canyon Avenue
Irvine, CA 92618

Prepared by:
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Noise Impact Analysis

Verizon Wireless Telecommunications Facility

"Lost Hills"
26791 Agoura Road
Calabasas, CA 91302

Prepared for:

Verizon Wireless
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Irvine, CA 92618

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Core Development Services
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January 14, 2015

EXECUTIVE SUMMARY

This noise impact analysis is submitted to satisfy the following City of Calabasas (City) noise requirements for the proposed Verizon Wireless "Lost Hills" Telecommunications site (hereafter referred to as the "Project" or the "proposed Project"). This report includes an analysis of Project-related noise sources and an assessment of whether the Project complies with the City's nighttime noise level limit for commercial uses, which is 60 dBA (A-weighted decibels).

The proposed Project entails the modification of an existing Verizon communications substation, which includes the removal and replacement of 6 panel antennas; installation of 3 Raycap boxes, including one with a surge protector; installation of new hybriflex cables; extension of the existing fiber reinforced plastic (FRP) screen; and removal of the equipment cabinet that would be replaced with a new CommScope equipment cabinet on the rooftop.

The Project site is located at 26791 Agoura Road in the City of Calabasas, California (Assessor's Parcel Numbers [APNs] 2064-021-009 and 2064-021-010), in the Calabasas Farms Bar and Grill building in the Summit at Calabasas shopping center. The Project site is in a fully developed neighborhood commercial/shopping center with associated parking. The area planned for the new and modified equipment is on the rooftop of a building used for a restaurant. The Project site is surrounded by commercial uses.

The estimated equipment noise levels at all of the surrounding commercial locations (Receptor [R] 1-R5) range between 29.1 dBA and 36.2 dBA, which are within the City's nighttime noise limit at the site boundary. Therefore, potential impacts associated with the proposed equipment noise would be considered less than significant and no mitigation is required.

1.0 INTRODUCTION

This noise impact analysis is submitted to satisfy the following City of Calabasas (City) noise requirements for the proposed Verizon Wireless "Lost Hills" Telecommunications site (hereafter referred to as the "Project" or the "proposed Project"). The report includes the following:

(1) An assessment of noise impacts from on-site Project-related noise sources;

(2) A determination of whether mitigation is necessary and feasible to reduce interior noise impacts to below 60 dBA (A-weighted decibels), in compliance with the City's nighttime commercial property-line noise limit.

1.1 PROJECT LOCATION

The Project site is located at 26791 Agoura Road in the City of Calabasas, California (Assessor's Parcel Numbers [APNs] 2064-021-009 and 2064-021-010), in the Calabasas Farms Bar and Grill building in the Summit at Calabasas shopping center. Refer to Figures 1 and 2 for a regional location map and aerial photograph of the Project site, respectively.

1.2 PROJECT DESCRIPTION

The proposed Project entails the modification of a Verizon communications substation, which includes the removal and replacement of 6 panel antennas; installation of 3 Raycap boxes, including one with a surge protector; installation of new hybriflex cables; extension of the fiber reinforced plastic (FRP) screen; and removal of the equipment cabinet that would be replaced with a new CommScope equipment cabinet on the rooftop.

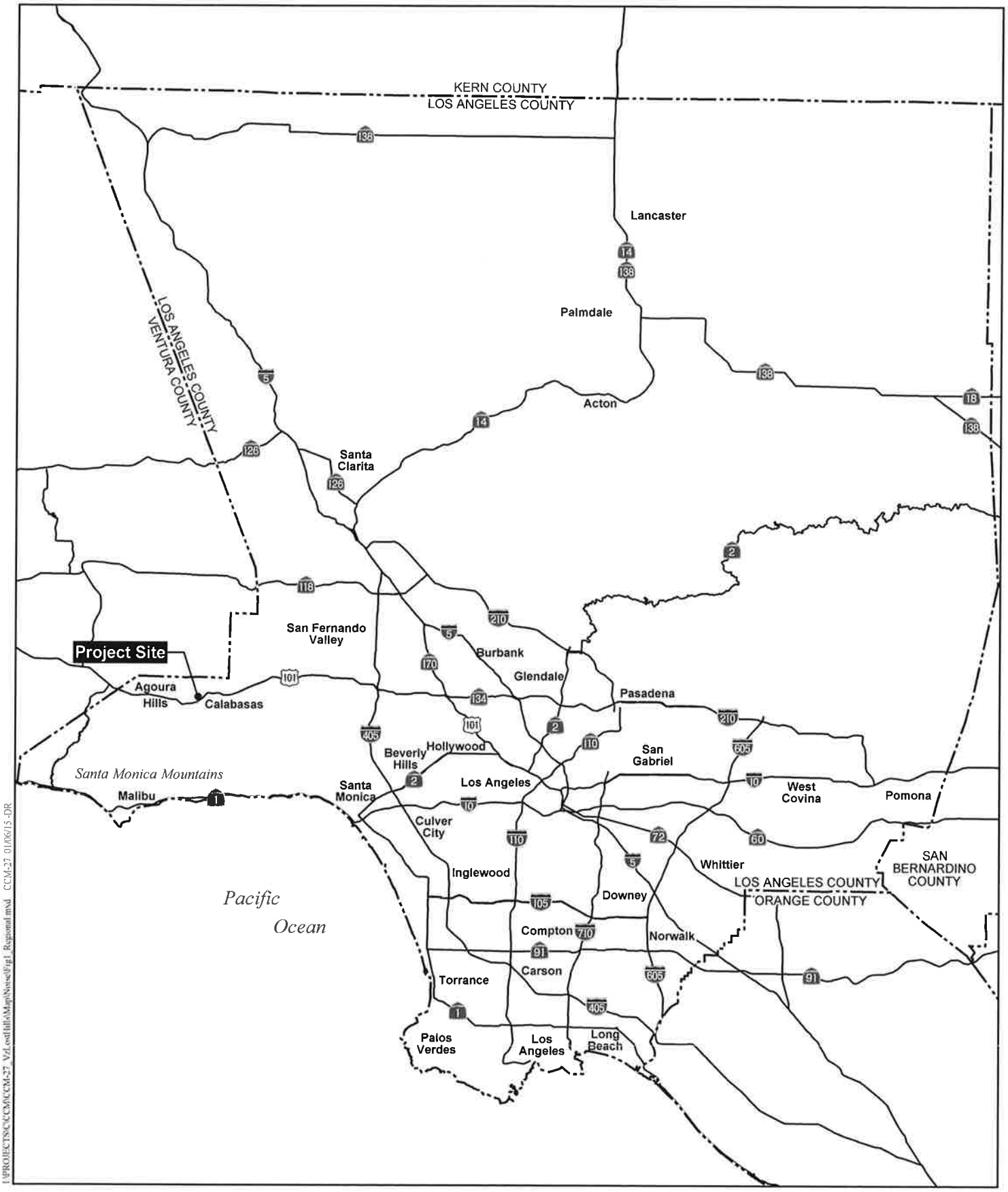
Refer to the detailed site plan shown in both Figure 3 and Appendix A for additional Project details.

1.3 ANALYZED RECEPTORS

While not typical property lines, the inside of the restaurant and the exterior dining area has been analyzed to determine whether noise levels might interfere with their normal usage. Noise impact information for the property lines to the northwest, northeast, southeast, and southwest locations closest to the installation has also been provided.

1.4 NOISE METRICS

All noise-level and sound-level values presented herein are expressed in terms of decibels (dB), with A-weighting, abbreviated "dBA," to approximate the hearing sensitivity of humans. Time-averaged noise levels of one hour are expressed by the symbol "L_{EQ}" unless a different period is specified. Some of the data also may be presented as octave-band-filtered and/or A-octave-band-filtered data, which are a series of sound spectra centered on each stated frequency, with half of the bandwidth above, and half of the bandwidth below, the stated frequency. These data are typically used for machinery noise analysis and barrier-effectiveness calculations.



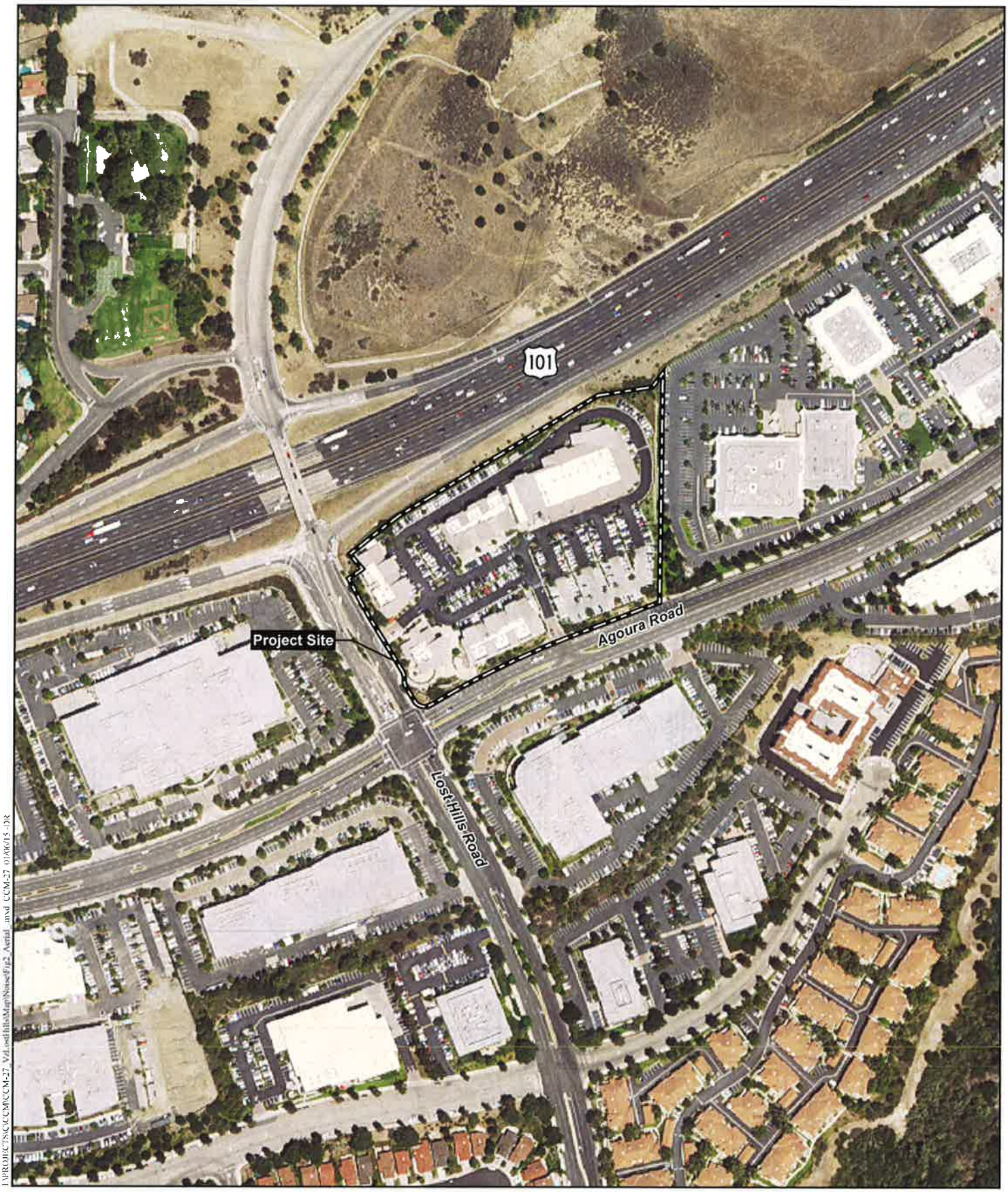
Regional Location

VERIZON WIRELESS LOST HILLS NOISE IMPACT ANALYSIS

HELIX Environmental Planning

N 0 10 Miles

Figure 1



Aerial Photograph

VERIZON WIRELESS LOST HILLS NOISE IMPACT ANALYSIS

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N 0 300 Feet

Figure 2

E. Interior Noise Level Standards for Residential Uses. No person shall operate or cause to operate any source of sound within any residential dwelling unit or allow the creation of noise on property owned, leased, occupied or otherwise controlled by such person which causes the noise level, when measured inside a neighboring dwelling unit to exceed the levels set forth in Table 3-2 (referred to as Table 2 in this report).

Table 2*
INTERIOR NOISE LEVEL STANDARDS

	Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
Hourly Equivalent Sound Level (L_{EQ}, dBA)	45	40
Maximum level, dBA	60	55

*Table 3-2 in City Municipal Code

2.0 ENVIRONMENTAL SETTING

Ground topography on the site is nearly level with no significant topological shielding near the planned site.

2.1 SITE LAND USE

The Project site is in a fully developed neighborhood commercial/shopping center with associated parking. The area planned for the new and modified equipment is on the rooftop of a building used for a restaurant and office. The Project site is zoned Commercial, Retail (CR).

2.2 ADJACENT LAND USES

Located northwest of the shopping center's property line is Highway 101. The western property line is adjacent to Lost Hills Road; across the street is a large commercial building, zoned as Commercial, Business Park (CB). The southern Project property line is adjacent to Agoura Road; across the street is another large commercial building, zoned as Commercial, Mixed Use (CMU). For a City of Calabasas zoning map, see Appendix B.

2.3 EXISTING NOISE LEVELS

An on-site inspection was conducted at 1:15 p.m. on Friday, December 19, 2014. A 15-minute ambient noise measurement was made at ground level adjacent to the proposed equipment enclosure in the outdoor dining area. The measured noise level was 61.7 dBA L_{EQ}. During the ambient noise measurement, there was no measurable breeze, the humidity was moderate, and the temperature was in the lower 70s (degrees Fahrenheit). The primary source of ambient noise was from traffic on the nearby streets including Highway 101, Lost Hills Road, and Agoura Road.

3.4 PROPERTY LINE DISTANCES

For verification of noise impacts, Table 4 includes a partial list of equipment-to-property-line distances at the planning receiver locations. These locations are shown on Figure 4, *Noise Contours and Receiver Locations*. Figure 4 also displays the predicted site noise contours that show estimated noise levels associated with the equipment noise.

Table 4
PARTIAL LIST OF EQUIPMENT-TO-PROPERTY-LINE DISTANCES

Receiver	Property-line Location	Distance (Feet)[1]
R1	Northwest Property Line	305
R2	Northeast Property Line	287
R3	Southeast Property Line	102
R4	Southwest Property Line	90
R5	Outdoor Dining Area	41

[1] The distance provided is from the center of the equipment pad area to the select location line.

4.0 OPERATIONAL NOISE IMPACTS

4.1 SIGNIFICANCE THRESHOLDS

As described in Sections 2.1 and 2.2, the proposed Project site is zoned commercial and adjacent properties are all zoned commercial; therefore, the most conservative operational noise level limit is 60 dBA from 10 p.m. to 7 a.m.

4.2 PROJECT-RELATED NOISE SOURCES

Project-related noise sources would include the existing and new outdoor electronics cabinets using forced air cooling systems as given in Sections 4.3.1 to 4.2.4 below.

4.2.1 <u>CommScope RBA72-36 Cabinet</u>

The calculated composite worst-case noise level in Sound Power for the Power Plant cabinets is shown in Table 5 below.

Table 5
COMPOSITE WORST-CASE OCTAVE DATA FOR OPERATIONAL COMMSCOPE CABINET

Octave Band Center Frequency (Hz)	63 Hz	125 Hz	250 Hz	500 Hz	1 KHz	2 KHz	4 KHz	8 KHz	dBA L_{EQ}
Calculated S_{WL}	80.3	75.8	76.1	74.3	75.2	72	66	61.7	79

SWL = Sound Power Level

Noise Contours and Receiver Locations

VERIZON WIRELESS LOST HILLS NOISE IMPACT ANALYSIS

HELIX Environmental Planning

N 0 130 Feet

Figure 4

4.3 CALCULATED NOISE IMPACTS

Table 9 provides the calculated noise levels at the five receiver locations for the operational equipment noise associated with the proposed Project (outdoor electronics cabinets). The receiver locations are also shown on Figure 4. Figure 4 also depicts the predicted site noise contours that show estimated noise levels associated with the equipment noise.

As shown in Table 9, the estimated equipment noise level at all of the commercial locations (R1 R5) ranges between 29.1 dBA and 36.2 dBA, which is within the City's nighttime noise limit at the site boundary (60 dBA L_{EQ} for commercial) established by the City's noise ordinance shown in Table 1. Standard solid roof/wall construction would provide a minimum reduction of 20 dBA to the interior office/restaurant uses. The resulting interior noise level of 39.4 dBA (59.4 dBA minus 20 dBA) would be within acceptable limits for commercial office uses. Therefore, potential impacts associated with the proposed equipment noise would be considered less than significant.

Table 9
CALCULATED NOISE IMPACTS AT POTENTIAL EXTERIOR RECEPTOR LOCATIONS WITH ALL SITE EQUIPMENT OPERATING

Receiver	Location	Proposed Equipment Noise (dBA L_{EQ})
R1	Northwest Property Line	29.2
R2	Northeast Property Line	29.1
R3[3]	Southeast Property Line	32.6
R4	Southwest Property Line	36.2
R5	Outdoor Dining Area	33.7

4.4 REQUIRED PROJECT FEATURES

No Project Design features are required.

5.0 MITIGATION

The proposed Project would be in compliance with the City of Calabasas noise level limits. No mitigation is required.

7.0 QUALIFICATIONS

Mr. Terry is a senior acoustical consultant for HELIX Environmental Planning, Inc. with nearly 30 years of experience in engineering and mechanical systems. His specialized experience in acoustical and mechanical engineering includes evaluating noise from various sources including engines, compressors, generators, chillers, pump stations, turbines, presses, manufacturing equipment, and air handling systems, as well as providing recommendations (including design elements) for noise control solutions to achieve satisfactory noise levels. Mr. Terry has analyzed several power plant or public utility projects involving evaluation and control of noise from mechanical equipment. Mr. Terry's responsibilities include research, computer modeling, analysis, and noise monitoring. Other projects have focused on noise control within industrial, commercial, or residential projects, and have ranged from equipment noise reduction to building modification or design enhancement.

Mr. Terry oversees report preparation, noise control design, testing of prototype solutions, project management, and client support. He has served as an Industry Expert in General Acoustics, Nuisance Noise and Vibration Control, and Building Construction Practices at numerous public hearings and workshops, including Planning Commissions, City Councils, and Boards of Supervisors. He has provided court testimony and depositions on many cases in litigation involving noise and vibration issues. Clients have included engineers and architects for various utilities, manufacturers, and water and sewer districts, including Pacific Bell, San Diego Gas & Electric, PG&E Dispersed Generating Systems, Callaway Golf, Verizon, Cingular, Nextel, SBC, AT&T, Sprint, several water districts, and a number of large law firms.

Affiliations

Acoustical Society of America
Institute for Noise Control Engineering
California Association of Environmental Professionals
San Diego Forensic Consultants Association

Education

B.S., Mechanical Engineering, San Diego State University

Appendix A

DETAILED SITE PLANS