HELIX Environmental Planning

12 Oaks Winery Resort Project

Acoustical Site Assessment Report

February 2018

Prepared for:
Standard Portfolio Temecula, LLC
488 E. Santa Clara Street, Suite 304
Arcadia, CA 91006

Prepared by:
HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
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ACOUSTICAL SITE ASSESSMENT REPORT

FOR THE

12 OAKS WINERY RESORT PROJECT

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ACRONYMS

ADT	average daily trips (roadway traffic)
ANSI	American National Standards Institute
County	County of Riverside
CNEL	Community Noise Equivalent Level
dB	decibel
dBA	A-weighted decibels
du	dwelling unit
FTA	Federal Transit Administration
HVAC	heating, ventilating, and air conditioning
Hz	Hertz
kHz	kilohertz
L_{DN}	Day-Night level
L_{EQ}	equivalent sound level
mph	miles per hour
NSLU	noise-sensitive land use
PPV	peak particle velocity
Project	12 Oaks Winery Resort Project
PTAC	Packaged Terminal Air Conditioner
RCNM	Roadway Construction Noise Model
SPL	sound pressure level
S_{WL}	sound power level
TNM	Traffic Noise Model
USDOT	U.S. Department of Transportation

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EXECUTIVE SUMMARY

This report presents an assessment of potential acoustical impacts associated with the 12 Oaks Winery Resort Project (Project). The Project proposes a winery resort consisting of a hotel, restaurant, winery, and residences on approximately 604 acres within the County of Riverside (County). Potential sources of noise during construction and operation of the Project include heavy construction equipment, traffic, event noise, and heating, ventilation, and air conditioning (HVAC) units.

Construction of the Project is not anticipated to exceed any regulatory noise or vibration levels. However, temporary increases in noise levels from construction would occur and the implementation of mitigation measures from the Wine Country Community Plan Environmental Impact Report (EIR) would reduce construction noise associated with the Project and therefore reduce construction impacts to a less than significant level.

HVAC noise from the hotel's individual room air conditioning units and from the larger rooftop condensers would not exceed allowable limits for operational sources.

Outdoor spaces for events would be provided on the Project site. Considering distance and general intervention of building structures between these spaces and nearby on- and off-site residences, potential noise impacts from outdoor events would not exceed allowable limits.

Transportation noise from nearby roads would not create interior or exterior noise impacts to future hotel room or residential uses on the Project site. Additional traffic from the Project would not substantially increase noise levels on surrounding roadways, and therefore would not cause significant impacts to off-site noise-sensitive land uses.

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1.0 INTRODUCTION

This report includes an assessment of potential noise and vibration impacts associated with the 12 Oaks Winery Resort Project (Project) proposed by Standard Portfolio Temecula, LLC (Project Applicant).

1.1 PROJECT LOCATION

The Project consists of 11 parcels containing 1,099.3 acres of land in southwestern Riverside County, northeast of the City of Temecula, including Assessor's Parcel Numbers (APNs) 964-160-001 – 002, 964-160-004, 964-190-001 – 008 (project site). The project site is within the U.S. Geological Survey 7.5-minute Bachelor Mountain quadrangle map within Section 13, Township 7 South, Range 2 West.

The Project site is located approximately 4.5 miles east of the City of Temecula within the Wine Country Community Plan (WCCP) in Riverside County's jurisdiction. The project site is located along Rancho California Road, bound by Buck Road to the south, Warren Road to the east, and Borel Road to the north. Regional access to the Project site is provided via Rancho California Road/Buck Road and from Borel Road to the north of the site. The Project site is surrounded by vacant, undeveloped land, agricultural uses, and sparse single-family residential development. The Project site's location is shown in Figure 1, *Regional Location Map*; Figure 2, *Project Vicinity*; and Figure 3, *Site Plan*.

1.2 PROJECT DESCRIPTION

The Project proposes to develop a winery resort and residences in three construction phases. The first phase consists of a full-service hotel and winery. The proposed winery is considered a large-scale winery in terms of the WCCP and would be similar in size to the existing South Coast Winery. The winery would consist of a tasting room, wedding pavilion and event barn, administrative offices, wine production barn, and two barrel storage buildings. The resort hotel would have 251 rooms in a three-story building. The hotel would also offer additional amenities such as a spa, restaurant, pools, fitness center, and an event center for weddings and events.

The second phase would develop the Wine Village Estate, a 224.3-acre site with 21 residential lots. This phase would include a winery and community clubhouse and would be located directly west of the winery resort. Each lot is approximately 10 acres. The third phase would develop the Wine County Residential Subdivision, consisting of 76 single-family residences in the 172.4-acre western portion of the site.

Several roadway improvements are proposed as part of project. This includes the realignment and extension of the General Plan Circulation Element road, Rancho California Road, between Buck Road and Warren Road. Off-site road improvements include the realignment of Buck Road and Camino El Vino to accommodate environmental restoration and connection to existing roads adjacent to the site.

The hotel resort would be accessed from the extension of Rancho California Road while the winery access driveway would connect to the reconfigured intersection of Warren Road, Benton Road,

and Rancho California Road. The Wine Village Estate Lots at the center of the project would access the site from the east via Warren Road and from the south via Buck Road. The Wine Village Estate Lot at the east end of the project would be accessed from the east via Buck Road and from the west via a driveway off of the realigned Rancho California Road. The single-family homes would have two access points from Buck Road with additional emergency access through the estate lots. The project would also include six internal roadways within the residential portions of the site. These roadways would connect to the realigned and paved Buck Road to the south, and Warren Road to the east.

2.0 ENVIRONMENTAL SETTING

2.1 NOISE AND SOUND LEVEL DESCRIPTORS AND TERMINOLOGY

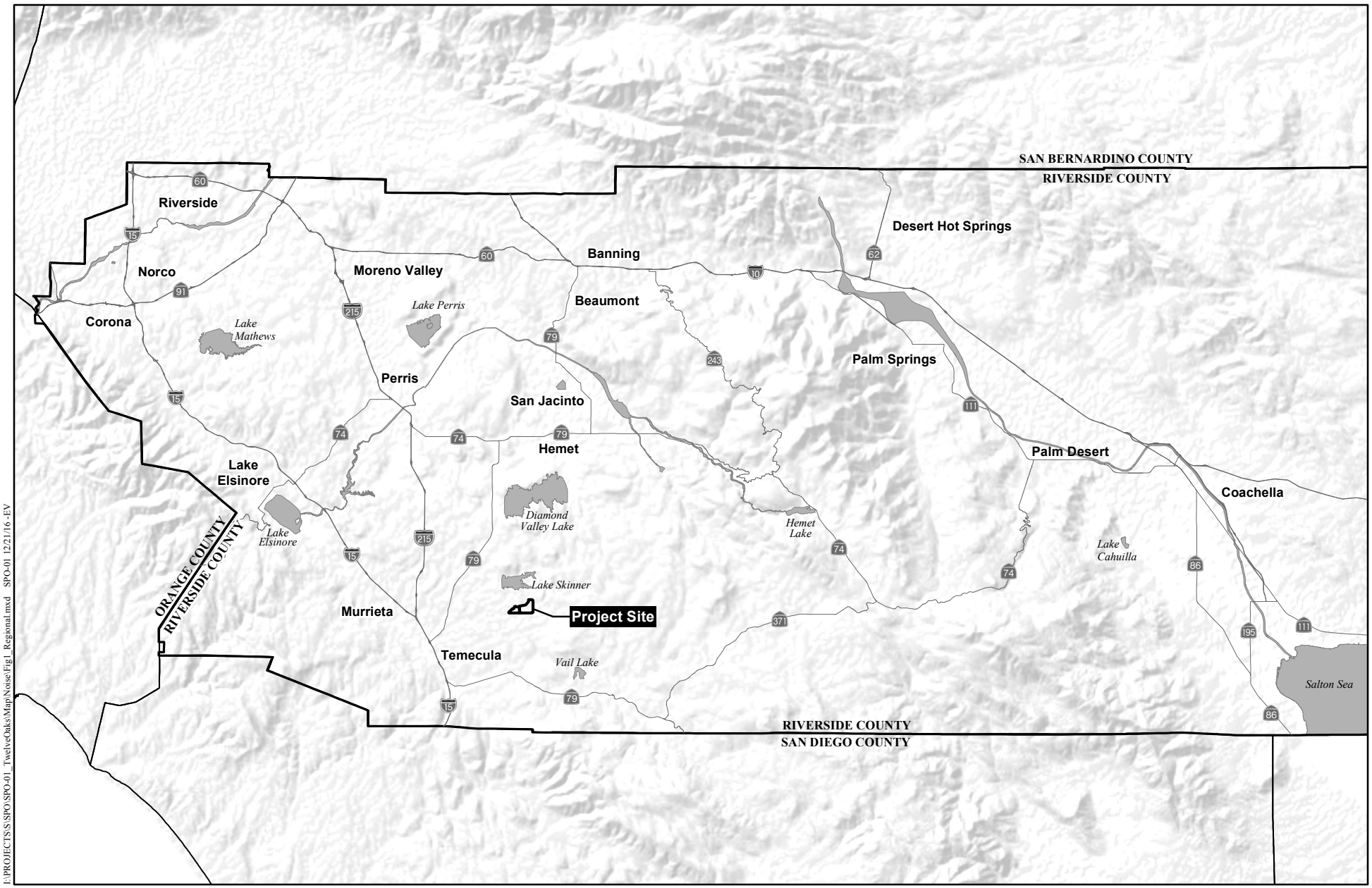
All noise level or sound level values presented herein are expressed in terms of decibels (dB), with A-weighting (dBA) to approximate the hearing sensitivity of humans. Time-averaged noise levels are expressed by the symbol L_{EQ}, with a specified duration. The Community Noise Equivalent Level (CNEL) is a 24-hour average, where noise levels during the evening hours of 7:00 p.m. to 10:00 p.m. have an added 5 dBA weighting, and sound levels during the nighttime hours of 10:00 p.m. to 7:00 a.m. have an added 10 dBA weighting. This is similar to the Day-Night sound level (L_{DN}), which is a 24-hour average with an added 10 dBA weighting on the same nighttime hours but no added weighting on the evening hours. Sound levels expressed in CNEL are always based on dBA. These metrics are used to express noise levels for both measurement and municipal regulations, as well as for land use guidelines and enforcement of noise ordinances.

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air) to a hearing organ, such as a human ear. Noise is defined as loud, unexpected, or annoying sound.

In the science of acoustics, the fundamental model consists of a sound (or noise) source, a receiver, and the propagation path between the two. The loudness of the noise source and obstructions or atmospheric factors affecting the propagation path to the receiver determine the sound level and characteristics of the noise perceived by the receiver. The field of acoustics deals primarily with the propagation and control of sound.

Continuous sound can be described by frequency (pitch) and amplitude (loudness). A low-frequency sound is perceived as low in pitch. Frequency is expressed in terms of cycles per second, or Hertz (Hz) (e.g., a frequency of 250 cycles per second is referred to as 250 Hz). High frequencies are sometimes more conveniently expressed in kilohertz (kHz), or thousands of Hertz. The audible frequency range for humans is generally between 20 Hz and 20,000 Hz.

The amplitude of pressure waves generated by a sound source determines the loudness of that source. A logarithmic scale is used to describe sound pressure level (SPL) in terms of decibels (dB). The threshold of hearing for the human ear is about 0 dBA, which corresponds to 20 micro-Pascals (mPa).



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Regional Location Map

12 OAKS WINERY RESORT

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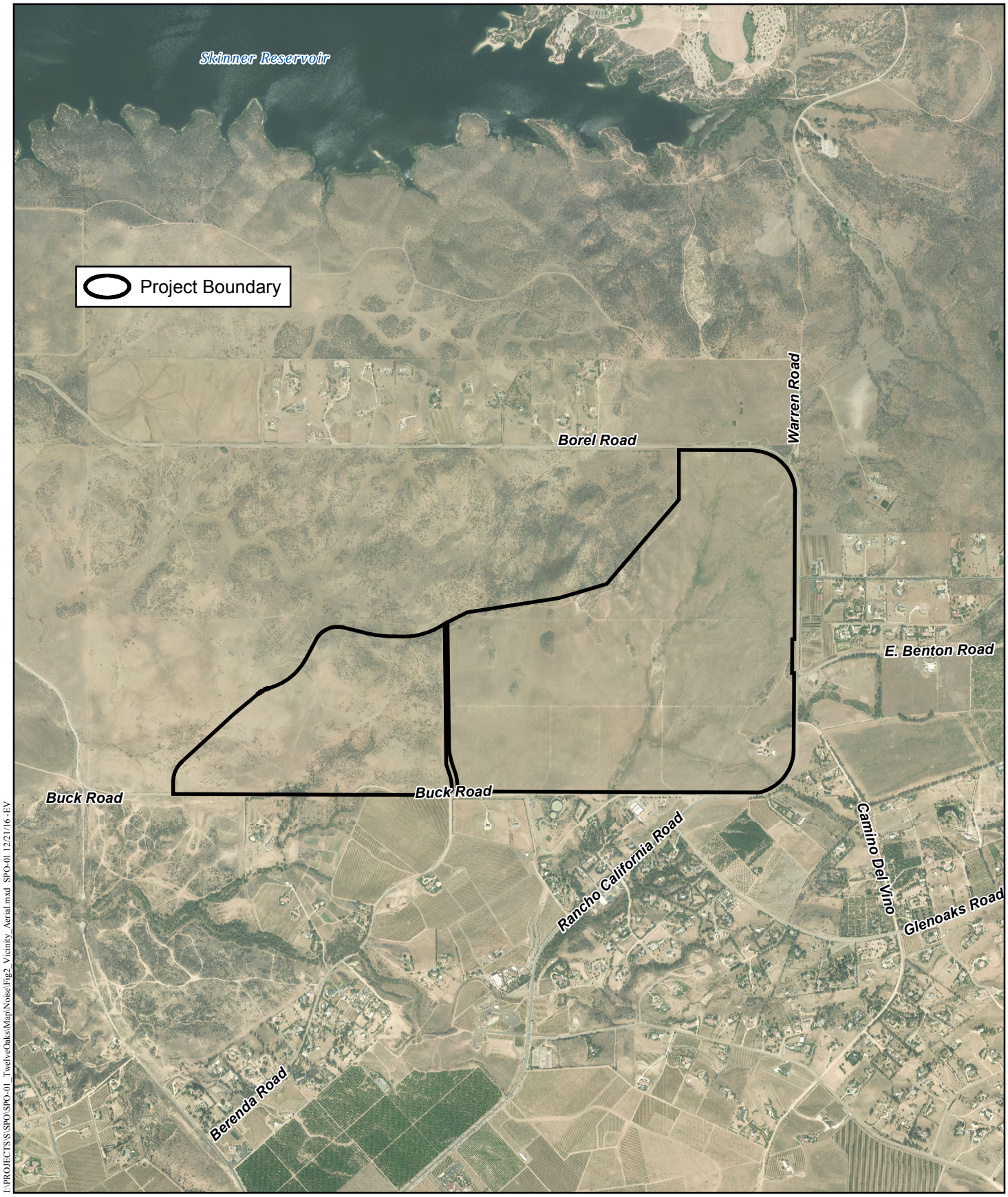
Figure 1



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Project Vicinity

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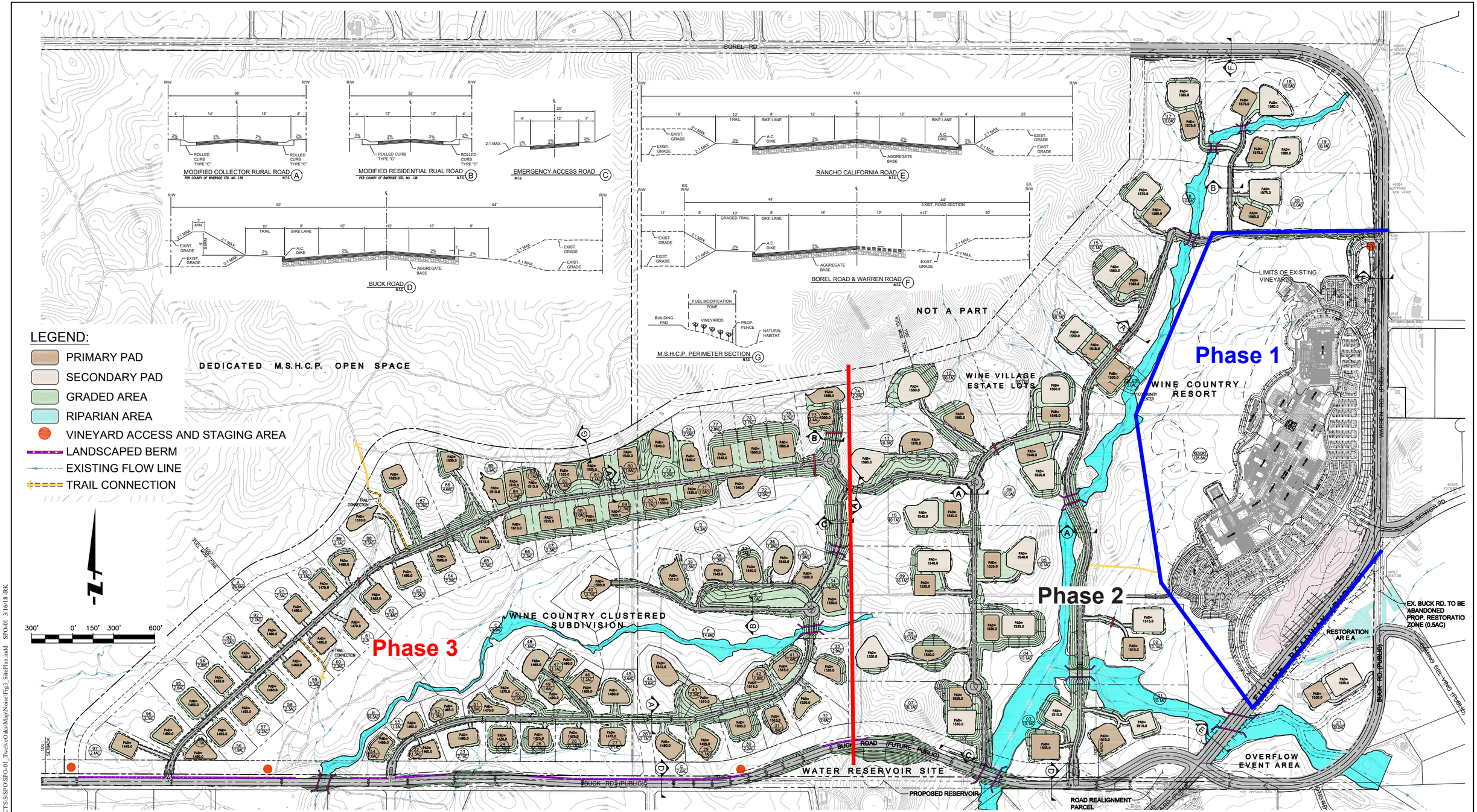
N

0 2,000 Feet

Figure 2



Source: Fuscoe Engineering 2018

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Site Plan

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Figure 3

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Because decibels are logarithmic units, SPL cannot be added or subtracted through ordinary arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3-dBA increase. In other words, when two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dBA higher than one source under the same conditions.

2.2 NOISE AND VIBRATION SENSITIVE LAND USES

Noise-sensitive land uses (NSLU) are land uses that may be subject to stress and/or interference from excessive noise, such as residential dwellings, transient lodging, dormitories, hospitals, educational facilities, and libraries. Industrial and commercial land uses are generally not considered sensitive to noise. NSLUs are located in the vicinity of the Project site, and NSLUs would be constructed on the site as part of the Project. Off-site NSLUs include scattered existing single-family residential development located northwest, directly east of the Project site across Warren Road, and directly south across Buck Road. On-site NSLUs would include a full service hotel with 200 rooms and future residences.

Land uses in which ground-borne vibration could potentially interfere with operations or equipment, such as research, manufacturing, hospitals, and university research operations (Federal Transit Administration [FTA] 2006) are considered "vibration-sensitive." The degree of sensitivity depends on the specific equipment that would be affected by the ground-borne vibration. Excessive levels of ground-borne vibration of either a regular or an intermittent nature can result in annoyance to residential uses. No vibration-sensitive land uses are located on or within 200 feet of the Project site.

2.3 REGULATORY FRAMEWORK

Federal Transit Administration Standards

Although FTA standards are intended for federally funded proposed mass transit projects, the impact assessment procedures and criteria included in the Administration's Transit Noise and Vibration Impact Assessment (May 2006) are routinely used by local jurisdictions for evaluation of other projects.

California Noise Insulation Standards (California Code of Regulations, Title 24)

Title 24 establishes an Interior Noise Standard of 45 dBA CNEL for multiple-unit residential and hotel/motel structures. Acoustical studies must be prepared for proposed multiple-unit residential and hotel/motel structures within the CNEL noise contours of 60 dBA or greater. The studies must demonstrate that the design of the building will reduce interior noise in habitable rooms to 45 dBA CNEL or lower.

County of Riverside General Plan Noise Element

The Noise Element of the Riverside General Plan (County 2008) provides a systematic approach to identifying and appraising noise problems in the community; quantifying existing and projected noise levels; addressing excessive noise exposure; and community planning for the regulation of noise. Table 1, *County of Riverside Land Use Compatibility for Community Noise Exposure,*

summarizes the County's exterior land use-noise compatibility guidelines. Shading in this table represents the noise exposure level considered compatible for each land use category. The Project site land use would be designated as Agriculture and Specific Plan – Residential. The goal for maximum outdoor noise levels in agricultural areas is 75 CNEL, 65 CNEL for hotel uses, and 60 CNEL for low-density residential.

Table 1
COUNTY OF RIVERSIDE LAND USE COMPATIBILITY FOR COMMUNITY NOISE EXPOSURE

Land Use Category	Community Noise Exposure Level (L_{DN} or CNEL, dBA)						
	55	60	65	70	75	80	85
Residential – Low Density Single Family, Duplex, and Mobile Homes							
Residential – Multiple Family							
Transient Lodging – Motels, Hotels							
Schools, Libraries, Churches, Hospitals, and Nursing Homes							
Auditoriums, Concert Halls, Amphitheaters							
Sports Arena, Outdoor Spectator Sports							
Playgrounds, Neighborhood Parks							
Golf Courses, Riding Stables, Water Recreation, Cemeteries							
Office Buildings, Business, Commercial, and Professional							
Industrial, Manufacturing, Utilities, Agriculture							

Source: County of Riverside General Plan Noise Element
Notes:
Light shading represents the maximum noise exposure level considered normally acceptable for each land use category.
Dark shading represents the maximum noise exposure level considered conditionally acceptable for each land use category.

The County Noise Element also outlines policies to protect noise-sensitive land uses from noise emitted by outside sources and prevent new projects from generating adverse noise levels on adjacent properties.

Appendix I: Noise Element Data of the General Plan provides a memorandum from the County of Riverside Department of Public Health with guidelines for the determination of a potential community noise impact due to non-transportation noise sources. Noise sources covered by the standard include all stationary noise sources, including vehicular noise operated off the public roadways, but do not include temporary construction activities.

Facility-related noise, as emitted to any portion of any surrounding property containing a "habitable dwelling, hospital, school, library or nursing home," must not exceed the following worst-case noise levels:

a) 45 dBA – 10 minute noise equivalent level (L_{EQ}), between the hours of 10:00 p.m. to 7:00 a.m. (nighttime standard).

b) 65 dBA – 10 minute noise equivalent L_{EQ}, between 7:00 a.m. and 10:00 p.m. (daytime standard).

Appendix I of the General Plan also includes guidelines for assessment of noise to planned residential structures. Noise standards include:

1. To avoid future noise hazard, the maximum capacity design standard for highways and major roads will be used for determining the maximum future noise level or, in the case of freeways and airports, the estimated conditions 20 years in the future.

2. The interior noise levels in residential dwellings shall not exceed 45 L_{DN}/CNEL.

3. The exterior noise level shall not exceed 65 L_{DN}/CNEL.

4. Required Noise Prediction Model B Traffic Noise: FHWA RD 77-108 Highway Traffic Prediction Model, Sound 32 or the equivalent.

County of Riverside Municipal Code (Noise Ordinance)

Riverside Ordinance No. 847 establishes countywide standards regulating noise. Section 4 establishes general sound level standards for exterior noise levels. The exterior noise limits for each General Plan use designation are summarized in Table 2, *County of Riverside Exterior Sound Level Standards.*

Table 2
COUNTY OF RIVERSIDE EXTERIOR SOUND LEVEL STANDARDS

General Plan Foundation Component	General Plan Land Use Designation Code	General Plan Land Use Designation Name	Density	Maximum Decibel Level (dBA)	
				Daytime (7 a.m. – 10 p.m.)	Nighttime (10 p.m. – 7 a.m.)
Community Development	EDR	Estate Density Residential	2 ac	55	45
	VLDR	Very Low Density Residential	1 ac	55	45
	LDR	Low Density Residential	½ ac	55	45
	MDR	Medium Density Residential	2-5 du/ac	55	45
	MHDR	Medium High Density Residential	5-8 du/ac	55	45
	HDR	High Density Residential	8-14 du/ac	55	45
	VHDR	Very High Density Residential	14-20 du/ac	55	45
	H'TDR	Highest Density Residential	20+ du/ac	55	45
	CR	Retail Commercial	N/A	65	55
	CO	Office Commercial	N/A	65	55
	CT	Tourist Commercial	N/A	65	55
	CC	Community Center	N/A	65	55
	LI	Light Industrial	N/A	75	55
	HI	Heavy Industrial	N/A	75	75
	BP	Business Park	N/A	65	45
	PF	Public Facility	N/A	65	45
	SP	Specific Plan – Residential	N/A	55	45
		Specific Plan – Commercial	N/A	65	55
		Specific Plan – Light Industrial	N/A	75	55
		Specific Plan – Heavy Industrial	N/A	75	75
Rural Community	EDR	Estate Density Residential	2 ac	55	45
	VLDR	Very Low Density Residential	1 ac	55	45
	LDR	Low Density Residential	½ ac	55	45
Rural	RR	Rural Residential	5 ac	45	45
	RM	Rural Mountainous	10 ac	45	45
	RD	Rural Desert	10 ac	45	45
Agriculture	AG	Agriculture	10 ac	45	45
Open Space	C	Conservation	N/A	45	45
	CH	Conservation Habitat	N/A	45	45
	REC	Recreation	N/A	45	45
	RUR	Rural	20 ac	45	45
	W	Watershed	N/A	45	45
	MR	Mineral Resources	N/A	75	45

Source: County of Riverside Municipal Code Ord. 847
ac = acre; du/ac = dwelling unit per acre

Section 2 provides exemptions for agricultural and construction operations. Agricultural exemptions will be made for sound emanating from agricultural operations on land designated Agriculture in the Riverside County General Plan, or provided such operations are carried out in a

manner consistent with accepted industry standards. This exemption includes, without limitation, sound emanating from all equipment used during such operations, whether stationary or mobile. Construction exemptions will be made for construction occurring outside the hours of 6:00 p.m. and 6:00 a.m. from June and September and 6:00 p.m. and 7:00 a.m. from October to May. These limits are set for projects located within one-quarter of a mile from an inhabited dwelling.

2.4 EXISTING CONDITIONS

2.4.1 Surrounding Land Uses

The area surrounding the Project site consists primarily of agricultural land uses, open space, and residential uses. Many of the surrounding parcels are undeveloped. Chapin Family Vineyards and Doffo Winery are located immediately east of the Project site, and a plant nursery is located directly southeast. Vineyards, an orchard, and greenhouses are located directly south of the Project site. Residential uses are located to the south along Buck Road and Rancho California Road, to the southeast along Camino del Vino, and east of Warren Road. Open space is located northeast across Warren Road, and northwest of the Project site.

The Project is currently bounded on three sides by roads. Buck Road forms the entirety of the southern boundary and a portion of the eastern boundary. Buck Road is currently unpaved west of the intersection with Rancho California Road. Buck Road becomes Warren Road north of the intersection with East Benton Road. Borel Road forms the Project's northern boundary. Buck Road, Borel Road, and Warren Road are two-lane roadways with speed limits of 55 miles per hour (mph).

2.4.2 Ambient Noise Measurements

Two 15-minute noise measurements were conducted during the site visit on Tuesday, June 14, 2015. One traffic noise measurement was located along Warren Road adjacent to the proposed Project site approximately 900 feet north of Summitville Street, and another was taken in the unpaved area where Buck Road intersects with Rancho California Road adjacent to the site. No traffic counts were made, as traffic volumes were too low to provide a basis of noise model accuracy correlation. Measurement conditions and results are described in Table 3, and the two measurement locations are noted on Figure 4, *Ambient Noise Measurement Locations*, as M1 and M2.

Table 3 NOISE MEASUREMENT CONDITIONS AND RESULTS	
Date	June 14, 2015
Conditions	Overcast, negligible wind conditions, temperature of approximately 76°F, with 40% humidity
Measurement 1: Traffic Noise Measurement (Warren Road)	
Time	1:20 p.m. – 1:35 p.m.
Location	20 feet west from the edge of Warren Road approximately 900 feet north of Summitville Street
Distance to Centerline of Roadway from Noise Meter	Approximately 32 feet
Measured Noise Level 1	52.3 dBA L_{EQ}
Measurement 2: Ambient Measurement (Rancho California Road)	
Time	1:50 p.m. – 2:05 p.m.
Location	30 feet north from edge of Rancho California Road/ Buck Road intersection
Measured Noise Level 2	54.6 dBA L_{EQ}

3.0 METHODOLOGY AND SIGNIFICANCE CRITERIA

3.1 METHODOLOGY AND EQUIPMENT

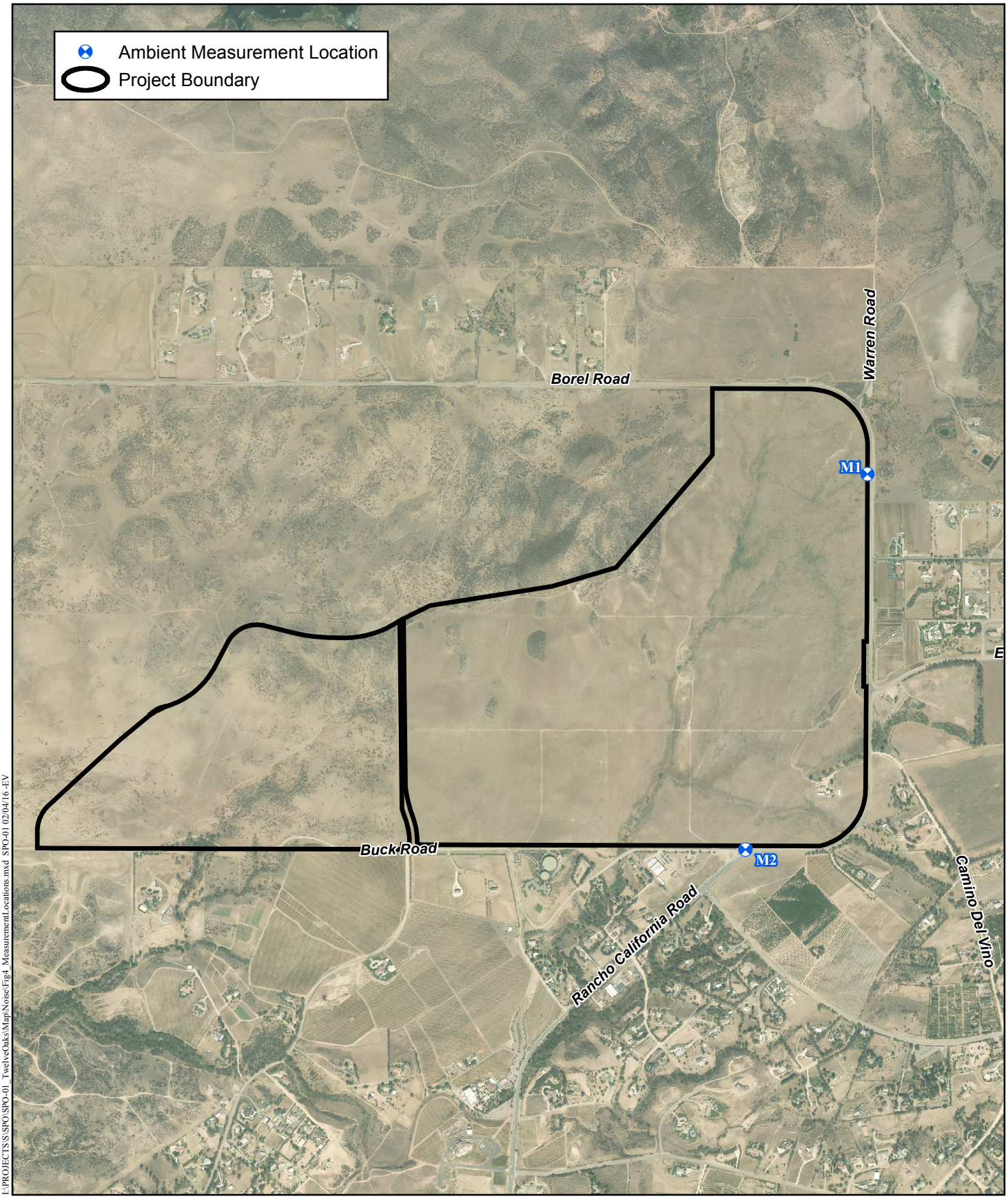
Traffic volumes for existing (2014) and future (2020) conditions were obtained from the 12 Oaks Transportation Impact Analysis Report by Fehr & Peers (2017). For existing (2014) conditions, Fehr & Peers collected existing traffic counts at five study intersections and counts from recent studies.

The following equipment was used to measure existing noise levels at the Project site:

- Larson Davis System LD 831 Sound Level Meter
- Larson Davis Model CA250 Calibrator
- Windscreen and tripod for the sound level meter
- Digital camera

The sound level meter was field-calibrated immediately prior to the noise measurements to ensure accuracy. All measurements were made with a meter that conforms to the American National Standards Institute (ANSI) specifications for sound level meters (ANSI SI.4-1983 R2001). All instruments were maintained with National Bureau of Standards traceable calibration per the manufacturers' standards.

Modeling of the outdoor noise environment for this report was accomplished using the Traffic Noise Model (TNM) software version 2.5. The TNM was released in February 2004 by the U.S. Department of Transportation (USDOT) and calculates the daytime average hourly L_{EQ} from three-dimensional model inputs and traffic data.



Ambient Noise Measurement Locations

12 OAKS WINERY RESORT

Figure 4

The one-hour L_{EQ} noise level is calculated utilizing peak-hour traffic; peak-hour traffic volumes can be estimated based on the assumption that 8 to 10 percent of the average daily traffic would occur during a peak hour. The model-calculated one-hour L_{EQ} noise output is equivalent to the CNEL (Caltrans Technical Noise Supplement, November 2009).

Project construction noise was analyzed using the Roadway Construction Noise Model (RCNM; USDOT 2008), which utilizes estimates of sound levels from typical construction equipment.

3.2 ASSUMPTIONS

3.2.1 Construction

The Project would be completed in phases. Construction would require heavy equipment during mass grading, utility installations, building construction and paving. Construction equipment utilized on site would include: dozers, excavators, graders, a crane, loaders, and backhoes. Operation of Phase 1 is expected to commence by 2020, Phase 2 by 2020, and Phase 3 by 2022. Refer to Table 4, *Anticipated Construction Schedule*, for more specific information regarding the schedule of construction activities for each construction phase.

Table 4
ANTICIPATED CONSTRUCTION SCHEDULE

Construction Phase	Construction Activity	Working Days
Phase 1 (Winery Resort)	Site Preparation	15
	Grading	88
	Infrastructure Installation	173
	Building Construction	477
	Architectural Coatings	150
	Paving	60
Phase 2 (Wine Village Estate Lots)	Site Preparation	10
	Grading	60
	Infrastructure Installation	120
	Building Construction	525
	Architectural Coatings	30
	Paving	30
Phase 3 (Wine County Residential Subdivision)	Site Preparation	15
	Grading	130
	Infrastructure Installation	220
	Building Construction	530
	Architectural Coatings	30
	Paving	30

The Project is not expected to involve blasting. The most likely source of vibration during the Project construction would be a vibratory roller, which may be used to achieve soil compaction as part of the foundation construction and for the roadway construction.

3.2.2 Operation

Agricultural Activities

The agricultural activities on site include planted vineyards and olive groves throughout the Project area. These activities are exempted from noise control limits per from Section 2 of the Noise Ordinance and are not analyzed further in this report.

Hotel Air Conditioners

Specific planning data for the future heating, ventilation, and air conditioning (HVAC) systems is not available at this stage of Project design. The individual hotel guest rooms' HVAC units would likely be Vertical Packaged Terminal Air Conditioners (PTACs). These units are mounted in each room, with vents opening to the outer walls of the building. These units would be relatively quiet and do not create noise over 45 dBA at 10 to 15 feet and are not analyzed further in this report.

The hotel also would likely utilize 15- to 20-ton rooftop-mounted packaged air conditioning and heating units. The unit used in this analysis is a Carrier 30RB70 condenser (see Appendix A, *Carrier 30RB70 Condenser*). Typical noise levels for a unit are provided below in Table 5, *Carrier 30RB70 Condenser Noise for Hotel*.

Table 5
CARRIER 30RB70 CONDENSER NOISE FOR HOTEL

Noise Levels in Decibels[1] (dB) Measured at Octave Frequencies								Overall Noise Level in A-weighted Scale (dBA)[1]
63 Hz	125 Hz	250 Hz	500 Hz	1 KHz	2 KHz	4 KHz	8 KHz	
62	78	83	89	92	87	84	74	95

[1] Sound Power Levels (S_{WL})
Hz = Hertz; KHz = kilohertz

Residential Air Conditioners

Specific planning data for the future residential HVAC systems is not available at this stage of Project design; however, analysis using a typical to larger-sized residential condenser mounted on ground level pads provides a reasonable basis for analysis. The unit used in this analysis is a Carrier 38HDR060 split system condenser (see Appendix B, Carrier 38HDR060 Split System Condenser). The manufacturer's noise data is provided below in Table 6, *Carrier HDR060 Condenser Noise for Residences*.

Table 6 CARRIER HDR060 CONDENSER NOISE FOR RESIDENCES							
Noise Levels in Decibels[1] (dB) Measured at Octave Frequencies							**Overall Noise Level in A-weighted Scale (dBA)[1]**
125 Hz	**250 Hz**	**500 Hz**	**1 KHz**	**2 KHz**	**4 KHz**	**8 KHz**	
63.0	61.5	64.0	66.5	66.0	64.5	55.5	72.0

[1] Sound Power Levels (S_{WL})
Hz = Hertz; KHz = kilohertz

Transportation Sources

To determine traffic noise levels that may affect proposed hotel rooms and future residences, standards from the Riverside County Department of Public Health were used. These standards were identified in the Requirements for Determining and Mitigating Traffic Noise Impacts to Residential Structures memorandum, found in the County General Plan Appendix I (2008). These standards require roadway traffic volume to be modeled using Average Daily Trips (ADT) Level of Service "C" design capacities as classified in the General Plan. The noise modeling uses the specified roadway mix for these classifications at different hours using these hourly average traffic volumes to generate the traffic noise levels. These roadway mixes are provided in the Table 7, *Vehicle Mix Assumptions*.

Table 7 VEHICLE MIX ASSUMPTIONS				
Vehicle	**Overall %**	**Day (7 a.m. – 7 p.m.) %**	**Evening (7 a.m. – 7 p.m.) %**	**Night (7 a.m. – 7 p.m.) %**
Major, arterial highways, or expressways				
Auto	92	69.5	12.9	9.6
Medium Truck	3	1.44	0.06	1.5
Heavy Truck	5	2.4	0.1	2.5
Secondary, collectors, or smaller roadways				
Auto	97.4	73.6	13.6	10.22
Medium Truck	1.84	0.9	0.04	0.9
Heavy Truck	0.74	0.35	0.04	0.35

Source: Traffic volumes obtained from Requirements for Determining and Mitigating Traffic Noise Impacts to Residential Structures Memo found in Appendix I of the County of Riverside General Plan.

To determine Project-added traffic noise impacts, the 12 Oaks Transportation Impact Analysis (Fehr & Peers 2017) provides the existing and future (existing plus ambient growth) and future plus Project-added traffic volumes for the street segments surrounding the proposed Project site. Upon completion, the Project is expected to generate 263 trips in the AM peak hour, 457 trips in the PM peak hour, and 664 trips during the Saturday peak hour. Speed limits on nearby roadways are 55 mph. The TNM software utilizes these hourly average traffic volumes to generate the traffic noise modeling results.

3.3 SIGNIFICANCE CRITERIA

Based on Appendix G of the CEQA Guidelines, implementation of the Project would result in a significant adverse impact if it would:

Threshold 1: *Expose persons to or generate noise levels in excess of standards established in the County of Riverside General Plan or noise ordinance, or applicable standards of other agencies.*

According to Appendix I of the County of Riverside General Plan, noise generated by the Project would be significant if facility-related noise, as projected to any portion of any surrounding property containing a "habitable dwelling, hospital, school, library or nursing home" exceeds the following worst-case noise levels: 45 dBA 10 minute L_{EQ} between the hours of 10:00 p.m. and 7:00 a.m.; or 65 dBA 10 minute L_{EQ} between the daytime hours of 7:00 a.m. and 10:00 p.m. According to the County of Riverside General Plan, exposure of persons to noise levels would be significant if new agricultural uses are subjected to levels above 75 CNEL, hotel uses are subjected to 65 CNEL, and low-density residential uses are subjected to 60 CNEL.

Threshold 2: *Result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project.*

A substantial permanent increase would occur if implementation of the proposed Project results in an ambient noise level that meets or exceeds the noise compatibility standards established in the County of Riverside General Plan. Because the County does not have specific thresholds for traffic-related noise, this report uses the FTA's Transit Noise and Vibration Impact Assessment criteria. A permanent increase in traffic noise at the following levels would be substantial and significant:

- 3 dBA increase on roadways where the baseline noise level is less than 60 CNEL
- 2 dBA for roadways where the baseline noise level is 60-64.9 CNEL
- 1 dBA for roadways where the baseline noise level is 65 CNEL or over

Threshold 3: *Result in a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project.*

Construction activity would be considered significant if it violates the limits established in the County of Riverside Noise Ordinance. The ordinance prohibits construction and building work between the hours of 6:00 p.m. and 6:00 a.m. of the next day during the months of June through September and 6:00 p.m. and 7:00 a.m. during the months of October through May. These limits would be in effect for private construction projects located within one-quarter of a mile from an inhabited dwelling.

Threshold 4: *Expose persons to or generation of excessive ground-borne vibration or ground-borne noise levels.*

Excessive ground-borne vibration is defined as equal to or in excess of 0.2 in/sec peak particle velocity (PPV). Construction activities within 200 feet and pile driving within 600 feet of a vibration sensitive use would be potentially disruptive to vibration-sensitive operations (Caltrans 2013).

Threshold 5: *For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public use airport or private airstrip, expose people residing or working in the Project area to excessive noise*.

Based on Appendix G of the CEQA Guidelines, implementation of the Project would have a significant adverse impact if it results in the exposure of persons to or generation of noise levels in excess of standards established in applicable plans or noise ordinance, or applicable standards of other agencies, or otherwise result in a substantial temporary or permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project.

4.0 IMPACTS

4.1 ISSUE 1: EXCESSIVE NOISE LEVELS

Would the Project expose persons to or generate noise levels in excess of standards established in the County of Riverside General Plan or noise ordinance, or applicable standards of other agencies?

4.1.1 Impact Analysis

4.1.1.1 *On-site Transportation Noise*

Exterior Residential Noise Levels

The Project is located within the rural Wine Country community, approximately 4.5 miles east of the City of Temecula. The nearest roadways are Rancho California Road/Buck Road to the south and Warren Road to the east. Upon completion of the future roadway configuration, a new public roadway would cut through the Project site. Hotel rooms and outdoor areas associated with the Project would be approximately 250 feet from Warren Road at the closest point, and approximately 500 feet from the new public roadway. Future residences would be approximately 350 feet from Rancho California Road.

The loudest existing noise levels adjacent to the roadway were measured as 54.6 dBA L_{EQ} at measurement site M2, near the intersection of Rancho California Road and Buck Road. According to the General Plan's land use compatibility for community noise exposure, this noise level is lower than the County's acceptable limits for adjacent Agricultural land uses (75 CNEL), planned hotel room uses (65 CNEL), and low density residential (60 CNEL).

Modeling was conducted for the maximum traffic noise levels at distances between 50 and 500 feet using ADT estimates for 2020 including ambient growth, the proposed Project, and cumulative Project growth. Traffic parameters for nearby roads as required by the County of Riverside Department of Public Health were used to model CNEL. At 250 feet, noise levels associated with Warren Road would be 52.8 CNEL. This is within the applicable exterior noise standards for hotel and residential uses. Traffic noise associated with the future public roadway at 500 feet would be 52.2 CNEL. Traffic noise associated with Rancho California Road at 350 feet and Buck Road at 150 feet would be 59.2 CNEL and 56.5 CNEL, respectively, at the nearest on-site residences. These levels would be below exterior noise limits for low-density residential (60 CNEL). Therefore, impacts related to the exposure of proposed hotel and residential uses at the Project site would be less than significant. Additional analysis for day, evening, and night CNEL distances is provided in Appendix D, *On-site Traffic Noise Levels.*

Interior Residential Noise Levels

Traditional architectural materials are normally able to reduce exterior to interior noise by up to 15 to 20 dBA. Because the Project's hotel and residential façade noise levels would not exceed 60 CNEL, traditional architectural materials would be expected to attenuate interior noise to a level of 45 CNEL, which is the interior limit for hotel and residential uses. Therefore, impacts related to interior noise limits are less than significant.

4.1.1.2 *Stationary Noise (Building HVAC Units)*

The nearest property line to a likely on-site rooftop HVAC at the resort would be approximately 310 feet to the east. At this distance, five of these units operating on a rooftop shielded behind a parapet wall would generate noise levels of approximately 45 dBA L_{EQ}. The exterior noise level limit for nearby land uses is 45 dBA L_{EQ}. HVAC units at the Project's hotel would not exceed these exterior noise thresholds, and potential noise impacts from HVAC equipment would be less than significant.

The nearest property line to a likely residential HVAC unit would be approximately 300 feet to the south. At this distance, a Carrier 38HDR060 HVAC unit would generate noise levels of approximately 23.4 dBA L_{EQ}. The exterior noise level limit for nearby land uses is 45 dBA L_{EQ}. A residential HVAC unit would exceed noise levels of 45 dBA L_{EQ} if spaced less than 25 feet from a receiver. No on-site residences would be within 25 feet of a neighboring HVAC unit, and units would not exceed these exterior noise thresholds, and potential noise impacts from HVAC equipment would be less than significant.

4.1.1.3 *Event Noise*

The proposed Project would provide outdoor event spaces where groups of people would congregate. An outdoor wine event space of about 1,667 square feet would be located in the hotel and winery resort area. The space would be capable of hosting up to three outdoor events at once. These may include weddings, concerts, and corporate events.

Regarding crowd noise, the noise level generated by human speech ranges from 55 to 65 dBA at a distance of 5 feet. This analysis assumes a maximum of three simultaneous functions with up to 250 attendees per function. Assuming that at any given time, approximately 30 percent of these

individuals are talking in a moderate to loud voice, there would be an approximate noise level of 65 dBA. With attendees scattered over an area spaced approximately 5 feet apart, the general area noise would be 74 to 77 dBA. Outdoor amplification of sound would be used in the event spaces, or elsewhere in the Project, but would be subject to Ordinance 847.

With the general intervention of building structures between event spaces and nearby receivers, the noise level would be approximately 25 dBA at 250 feet. Potential noise impacts from events at these distances would be less than significant.

4.1.2 Mitigation Measures

Because impacts related to Issue 1 would be less than significant, no mitigation is required.

4.1.3 Significance of Impacts After Mitigation

Impacts would be less than significant without mitigation.

4.2 ISSUE 2: PERMANENT INCREASE IN AMBIENT NOISE

Would the Project result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project?

4.2.1 Impact Analysis

4.2.1.1 *Off-site Transportation Noise*

The proposed Project would generate 263 trips in the AM peak hour, 457 trips in the PM peak hour, and 664 trips during the Saturday peak hour (Fehr & Peers 2017). Table 8, *Estimated Roadway Noise Levels*, shows the traffic noise levels along street segments surrounding the Project for both weekdays and weekends. These levels were calculated for existing conditions in 2014, 2020 conditions without the Project, and 2020 conditions including buildout of the Project. Additional analysis for these roadways is provided in Appendix E, *Off-site Traffic Noise Levels*.

Table 8
ESTIMATED ROADWAY NOISE LEVELS

Roadway	Segment	Existing (2014) (CNEL at 100 feet)	No Project (2020) (CNEL at 100 feet)	Project Buildout (2020) (CNEL at 100 feet)	Increase in Noise Level Due to Project (dBA)[1]
Weekday					
Rancho California Road	Glen Oaks Road to Monte de Oro	63.5	64.0	65.1	+1.1
	Monte de Oro to Anza Road	64.5	65.0	65.9	+0.9
Warren Road	Benton to Borel Road	58.9	59.4	60.1	+0.7
Borel Road	West of Warren Road	58.9	59.4	60.2	+0.8
Buck Road/Future Roadway	Glen Oaks to Benton Road	60.3	60.9	61.9	+1.0
Weekend					
Rancho California Road	Glen Oaks Road to Monte de Oro	64.2	64.7	66.0	+1.3
	Monte de Oro to Anza Road	65.8	66.3	67.2	+0.9
Warren Road	Benton to Borel Road	59.0	59.5	60.6	+1.1
Borel Road	West of Warren Road	59.0	59.5	60.3	+0.8
Buck Road/Future Roadway	Glen Oaks to Benton Road	59.3	59.8	61.6	+1.8

Source: Traffic volumes obtained from Fehr & Peers 2017
Project Buildout = Existing plus ambient growth plus Project
[1] Difference between No Project (2020) and Project Buildout (2020)

Using the County's incremental traffic noise impact criteria, which become progressively more stringent as the baseline traffic noise levels increase, an increase of 3 dBA for areas with existing ambient noise levels below 60 CNEL would be significant. Where baseline noise levels are between 60 and 64 dBA, an increase of 2 dBA would be significant.

Upon buildout of the Project, traffic noise levels generated along surrounding roadways would increase. The largest increase would occur during weekends along Buck Road. Implementation of the Project would increase noise levels by 2.3 dBA at 100 feet. Baseline noise levels along Buck Road would be under 60 dBA without the Project. Therefore, a 2.3 dBA increase would not be significant.

4.2.2 Mitigation Measures

Because impacts related to Issue 2 would be less than significant, no mitigation is required.

4.2.3 Significance of Impacts After Mitigation

Impacts would be less than significant without mitigation.

4.3 ISSUE 3: TEMPORARY INCREASE IN AMBIENT NOISE

Would the Project result in a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project?

4.3.1 Impact Analysis

Construction of the Project would generate elevated noise levels that may disrupt nearby noise sensitive receptors. The magnitude of the impact would depend on the type of construction activity, equipment, duration of each construction phase, distance between the noise source and receiver, and any intervening structures.

Rough grading is typically substantially louder than other activities and has the greatest potential to create impacts to off-site NSLUs. Site grading would be required to even out the existing terrain. Project grading and site preparation for each phase would require the use of approximately one grader, three rubber tired dozers, two excavators, and up to four dozer/ loader/backhoes.

Construction equipment would not all operate at the same time or location. Construction of Phase 2 would occur during operation of Phase 1, and Phase 3 construction would continue construction following completion of Phase 2. Construction noise would be audible to both on-site and off-site receivers. The southernmost residential construction pad of the second phase is approximately 300 feet from the nearest off-site residence. Construction of Phase 2 would occur at approximately 800 feet from the completed winery resort and hotel. Construction of Phase 3 would occur at distances as short as 200 feet from completed Phase 2 residences.

It is assumed that the two loudest pieces of equipment (an excavator and dump truck) would be operating at the same time in a given hour. Table 9, *Construction Equipment Noise Levels*, provides the 200-foot distance noise level of the equipment used in this analysis. The construction noise model assumes that pieces of construction equipment are only operating for a percentage of a given hour; these percentage assumptions are incorporated into the noise level calculations provided in Table 9. Refer to Appendix C for full construction noise modeling outputs.

Table 9
CONSTRUCTION EQUIPMENT NOISE LEVELS

Unit	Percent Operating Time	dBA L_{EQ} (1-hour) @ 200 feet	L_{MAX} @ 200 feet
Excavator	40	64.7	68.7
Dump Truck	40	60.4	64.4

Source: RCNM

The loudest estimated noise level would be 68.7 dBA at a distance of 200 feet. Although noise from the construction of the Project would temporarily increase noise levels in the vicinity of the Project above ambient levels, the County does not impose a noise level limit for construction activities. Rather, the County restricts the hours of operation of construction equipment to the times that are least disturbing to residents. Construction activities would occur within the limits specified for construction in Section 2 of the County's noise ordinance. Because construction would comply with the applicable operation limits for construction noise, the project would not generate noise

levels in excess of standards. However, temporary increases in noise levels from construction would occur and the implementation of mitigation measures from the WCCP Environmental Impact Report (EIR) would reduce construction noise associated with the Project and therefore reduce construction impacts to a less than significant level.

4.3.2 Mitigation Measures

The WCCP EIR includes the following mitigation measures that are required to be implemented for the proposed Project, which would reduce construction noise impacts:

WCCP EIR Mitigation Measure NOI-1: All implementing projects shall comply with the following noise reduction measures during grading and building activities:

- If construction occurs within one-quarter mile of an inhabited dwelling, construction activities shall be limited to the daytime hours of 6:00 a.m. to 6:00 p.m. during the months of June through September, and to 7:00 a.m. to 6:00 p.m. during the months of October through May.

- To minimize noise from idling engines, all vehicles and construction equipment shall be prohibited from idling in excess of three minutes when not in use.

- Best efforts should be made to locate stockpiling and/or vehicle staging areas as far as practicable from existing residential dwellings.

- Equipment and trucks shall utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures, and acoustically-attenuating shields or shrouds, wherever feasible).

- Impact tools (e.g., jack hammers, pavement breakers, and rock drills) shall be hydraulically or electronically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler shall be used; this muffler can lower noise levels from the exhaust by up to about ten dBA. External jackets on the tools themselves shall be used where feasible, and this could achieve a reduction of five dBA. Quieter procedures shall be used, such as drills rather than impact equipment, whenever feasible.

- Stationary construction noise sources shall be located as far from adjacent receptors as possible, and they shall be muffled and incorporate insulation barriers, or other measures to the extent feasible.

WCCP EIR Mitigation Measure NOI-2: Implementing project proponents shall submit a list of measures to respond to and track complaints pertaining to construction noise, ongoing throughout demolition, grading, and/or construction. These measures may include the following:

- A sign posted on-site pertaining the permitted construction days and hours and complaint procedures and who to notify in the event of a problem. The sign may also include a listing

of both the County and construction contractor's telephone numbers (during regular construction hours and off-hours); and

- A pre-construction meeting may be held with the job inspectors and the general contractor/on-site project manager to confirm that noise measures and practices (including construction hours, neighborhood notification, posted signs, etc.) are completed.

Because impacts related to Issue 3 would be less than significant following implementation of WCCP EIR Mitigation Measures NOI-1 and NOI-2, no additional mitigation is required.

4.3.3 Significance of Impacts After Mitigation

Impacts would be less than significant after mitigation.

4.4 ISSUE 4: EXCESSIVE GROUND-BORNE VIBRATION

Would the Project result in exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?

4.4.1 Impact Analysis

The main concern associated with ground-borne vibration from this type of Project is annoyance; however, vibration-sensitive instruments and operations, such as those found in hospitals and laboratories, can be disrupted at much lower levels than would typically affect other uses. In extreme cases, the vibration can cause damage to buildings, particularly those that are old or otherwise fragile. The primary source of ground-borne vibration occurring as part of the proposed Project would be construction activity.

No pile driving or blasting is anticipated to be necessary as part of Project construction; the greatest source of potential vibration from Project construction would be the potential use of vibratory rollers, which may be used to achieve soil compaction as part of the foundation construction and roadway paving.

No vibration-sensitive land uses are located within 200 feet of Project site. Therefore, construction vibration would not affect vibration-sensitive land uses. Residential land uses are located in the vicinity of the proposed Project. Excessive levels of ground-borne vibration of either a regular or an intermittent nature can result in annoyance to residential uses. An on-site source of vibration during Project construction would be a vibratory roller (primarily used to achieve soil compaction as part of the foundation and paving construction). A vibratory roller creates approximately 0.210 in/sec PPV at a distance of 25 feet. A 0.210 inch per second PPV vibration level would equal 0.046 in/sec PPV at a distance of 100 feet.[1] Vibratory rollers are expected to be used during paving of Buck Road and would operate approximately 100 feet from the nearest occupied residence. At this distance, although vibration may be perceptible by nearby residents, temporary impacts associated with the vibratory roller (and other potential equipment) would be less than significant.

[1] Equipment PPV = Reference PPV * $(25/D)^n$ (in/sec), where Reference PPV is PPV at 25 feet, D is distance from equipment to the receiver in feet, and n = 1.1 (the value related to the attenuation rate through the ground); formula from Caltrans 2013.

4.4.2 Mitigation Measures

Because impacts related to Issue 4 would be less than significant, no mitigation is required.

4.4.3 Significance of Impacts After Mitigation

Impacts would be less than significant without mitigation.

4.5 ISSUE 5: AIRPORT NOISE

For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public use airport or private airstrip, would the Project expose people residing or working in the Project area to excessive noise?

4.5.1 Impact Analysis

The Project site is not located near any active airports. The closest airport is the Billy Joe Airport, a private airstrip located approximately 4 miles southwest of the Project site. A public airport, Hemet-Ryan Airport, is located approximately 11 miles north of the Project site. At these distances, no effects related to airport noise would occur at the Project site, and impacts would be less than significant.

4.5.2 Mitigation Measures

Because impacts related to Issue 5 would be less than significant, no mitigation is required.

4.5.3 Significance of Impacts After Mitigation

Impacts would be less than significant without mitigation.

5.0 LIST OF PREPARERS

Jason Runyan	Environmental Planner
Charles Terry	Senior Acoustic Specialist
Joanne M. Dramko, AICP	Quality Assurance Reviewer
Andrea Bitterling	Project Manager

6.0 REFERENCES

California Department of Transportation (Caltrans)

2013 Transportation and Construction Vibration Guidance Manual, September.

2009 Technical Noise Supplement (TENs) Caltrans.

California Noise Insulation Standards, effective 11/01/02. Based on 1997 Uniform Building Code, California Code of Regulations, Title 24. 2001.

County of Riverside

2008 General Plan. Noise Element.

2008 General Plan. Appendix I: Noise Element Data.

2006 Municipal Code Ordinance No. 847 (Noise Ordinance).

Federal Highway Administration (FHWA)

2004 FHWA Traffic Noise Model, Version 2.5. February. FHWA-PD-96-010. Washington D.C.

Federal Transit Administration (FTA)

2006 Transit Noise and Vibration Impact Assessment. May.

Fehr & Peers

2017 12 Oaks Transportation Impact Analysis. February.

U.S. Department of Transportation (USDOT), Roadway Construction Noise Model, 2008.

2006 Federal Transit Administration, "Transit Noise and Vibration Impact Assessment," May.

Appendix A

Carrier 30RB70 Condenser

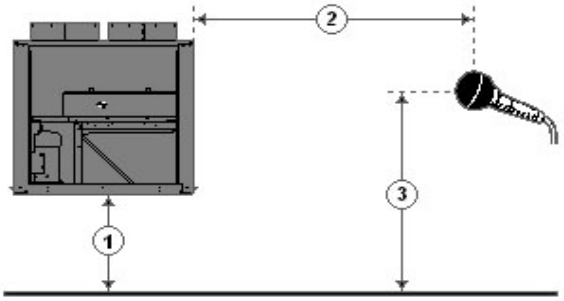
Acoustic Summary For 30RB70

Project: ATT Lakeside Turpin
Prepared By: Mike Kolaric

10/18/2013
10:38AM

Unit Parameters

Tag Name:	**30RB70**	
Model Number:	**30RB070**	
Condenser Type:	**Air Cooled**	
Compressor Type:	**Scroll**	
Chiller Nameplate Voltage:	**460-3-60**	V-Ph-Hz
Quantity:	**1**	
Manufacturing Source:	**Charlotte, NC USA**	
Refrigerant:	**R410A**	
Shipping Weight:	**3738**	lb
Operating Weight:	**3978**	lb
Unit Length:	**95**	in
Unit Width:	**89**	in
Unit Height:	**90**	in



1 - Chiller Height Above Ground
2 - Horizontal Distance From Chiller to Receiver
3 - Receiver Height Above Ground

Accessories and Installed Options

Freeze Protection	Ultra Low Sound Option
Suction Line Insulation	Low Ambient Head Pressure Control
Suction Service Valves	Minimum Load Control
Non-Fused Disconnect	Single Point
Energy Management Module	BACnet Translator Control
Micro Channel	Coil Trim Panels

Acoustic Information (Full Load)

Octave Band Center Frequency, Hz	31	63	125	250	500	1k	2k	4k	8k	Total
Sound pressure at specified distance in a free field, dB	53	56	62	60	60	59	54	51	43	67
A-Weighted Sound Pressure Level, dBA	13	30	46	51	56	59	55	52	42	63
Sound Power at Chiller Acoustic Center, dB	85	88	94	92	92	92	86	83	75	99
A-Weighted Sound Power, dBA	45	62	78	83	89	92	87	84	74	95

Notes

1 - Chiller Height Above Ground = 0.0 ft
2 - Horizontal Distance From Chiller to Receiver = 50.0 ft
3 - Receiver Height Above Ground = 0.0 ft
Estimated Sound Power levels - dB re: 1 picowatt
Estimated Sound Pressure levels - dB re: 20 micropascal
Estimated sound levels given above are assumed to originate at the acoustic center of the chiller.

Sound pressure level data used to develop this program was determined in accordance with AHRI Standard 575 for water chillers in a free field and ANSI/AHRI Standard 370 for air cooled chillers.

Calculation methods used in this program are patterned after the ASHRAE Guide; other ASHRAE Publications and the AHRI Acoustical Standards. While a very significant effort has been made to insure the technical accuracy of this program, it is assumed that the user is knowledgeable in the art of system sound estimation and is aware of the tolerances involved in real world acoustical estimation. This program makes certain assumptions as to the dominant sound sources and sound paths which may not always be appropriate to the real system being estimated. Because of this, no assurances can be offered that this software will always generate an accurate sound prediction from user supplied input data. If in doubt about the estimation of expected sound levels in a space, an Acoustical Engineer or a person with sound prediction expertise should be consulted.

Appendix B

Carrier 38HDR060 Split System Condenser

ELECTRICAL DATA

38HDR UNIT SIZE	V–PH–Hz	VOLTAGE RANGE*		COMPRESSOR		OUTDOOR FAN MOTOR			MIN CKT AMPS	FUSE/ HACR BKR AMPS
		Min	Max	RLA	LRA	FLA	NEC Hp	kW Out		
018	208/230–1–60	187	253	9.0	48.0	0.80	0.125	0.09	12.1	20
024	208/230–1–60	187	253	12.8	58.3	0.80	0.125	0.09	16.8	25
030	208/230–1–60	187	253	14.1	73.0	1.45	0.25	0.19	19.1	30
036	208/230–1–60	187	253	14.1	77.0	1.45	0.25	0.19	19.1	30
	208/230–3–60	187	253	9.0	71.0	1.45	0.25	0.19	12.7	20
	460–3–60	414	506	5.6	38.0	0.80	0.25	0.19	7.8	15
048	208/230–1–60	187	253	21.8	117.0	1.45	0.25	0.19	28.7	50
	208/230–3–60	187	253	13.7	83.1	1.45	0.25	0.19	18.6	30
	460–3–60	414	506	6.2	41.0	0.80	0.25	0.19	8.6	15
060	208/230–1–60	187	253	26.4	134.0	1.45	0.25	0.19	34.5	60
	208/230–3–60	187	253	16.0	110.0	1.45	0.25	0.19	21.5	35
	460–3–60	414	506	7.8	52.0	0.80	0.25	0.19	10.6	15

* Permissible limits of the voltage range at which the unit will operate satisfactorily

FLA – Full Load Amps
HACR – Heating, Air Conditininng, Refrigeration
LRA – Locked Rotor Amps
NEC – National Electrical Code
RLA – Rated Load Amps (compressor)

NOTE: Control circuit is 24–V on all units and requires external power source. Copper wire must be used from service disconnect to unit.
All motors/compressors contain internal overload protection.

SOUND LEVEL

Unit Size	Standard Rating (dB)	Typical Octave Band Spectrum (dBA) (without tone adjustment)						
		125	250	500	1000	2000	4000	8000
018	68	52.0	57.5	60.5	63.5	60.5	57.5	46.5
024	69	57.5	61.5	63.0	61.0	60.0	56.0	45.0
030	72	56.5	63.0	65.0	66.0	64.0	62.5	57.0
036	72	65.0	61.5	63.5	65.0	64.5	61.0	54.5
048	72	58.5	61.0	64.0	67.5	66.0	64.0	57.0
060	72	63.0	61.5	64.0	66.5	66.0	64.5	55.5

CHARGING SUBCOOLING (TXV-TYPE EXPANSION DEVICE)

UNIT SIZE–VOLTAGE, SERIES	REQUIRED SUBCOOLING °F (°C)
018	12 (6.7)
024	12 (6.7)
030	12 (6.7)
036	12 (6.7)
048	12 (6.7)
060	12 (6.7)

Appendix C

Construction Noise Modeling Outputs

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat 1/13/2017
Case Description:

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
1	Residential	40	40	40

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dump Truck	No	40		76.5	200	0
Excavator	No	40		80.7	200	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dump Truck	64.4	60.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	68.7	64.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	68.7	66.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Appendix D

On-site Traffic Noise Levels

Existing and Future Traffic Levels - Day Traffic

Roadway	Roadway Type	Segment	E + A + P + C (2020)				Posted Speed
			ADT	Traffic Breakdown			
				Cars	MT	HT	
Rancho California Road				69.5%	1.4%	2.4%	
	Mountain Arterial	Glen Oaks to Monte	15,850	11016	228	380	55
		Monte to Anza	21,460	14915	309	515	55
Warren Road				73.6%	0.9%	0.4%	
	Secondary Road	Benton to Borel	6,780	4990	61	24	55
Future Roadway				73.6%	0.9%	0.4%	
	Secondary Road	North of Buck Road	7,470	5498	67	26	55
Buck				69.5%	1.4%	2.4%	
	Secondary Road		8,990	6248	129	216	55

Existing and Future Traffic Levels - Evening Traffic

Roadway	Roadway Type	Segment	E + A + P + C (2020)				Posted Speed
			ADT	Traffic Breakdown			
				Cars	MT	HT	
Rancho California Road				12.9%	0.06%	0.1%	
	Mountain Arterial	Glen Oaks to Monte	15,850	2045	10	16	55
		Monte to Anza	21,460	2768	13	21	55
Warren Road				13.6%	0.04%	0.04%	
	Secondary Road	Benton to Borel	6,780	922	3	0	55
Future Roadway				13.6%	0.04%	0.04%	
	Secondary Road	North of Buck Road	7,470	1016	3	0	55
Buck				12.9%	0.06%	0.1%	
	Secondary Road		8,990	1160	5	9	55

Existing and Future Traffic Levels - Night Traffic

Roadway	Roadway Type	Segment	E + A + P + C (2020)				Posted Speed
			ADT	Traffic Breakdown			
				Cars	MT	HT	
Rancho California Road				9.6%	1.5%	2.5%	
	Mountain Arterial	Glen Oaks to Monte	15,850	1522	238	396	55
		Monte to Anza	21,460	2060	322	537	55
Warren Road				10.2%	0.9%	0.35%	
	Secondary Road	Benton to Borel	6,780	693	61	24	55
Future Roadway				10.2%	0.9%	0.35%	
	Secondary Road	North of Buck Road	7,470	763	67	26	55
Buck				9.6%	1.5%	2.5%	
	Secondary Road	W of Rancho California	8,990	863	135	225	55

Appendix E

Off-site Traffic Noise Levels

Existing and Future Traffic Levels - Weekday

Roadway		Existing Conditions (2014)				Existing + Ambient (2020)				Existing + Ambient + Project (2020)				Existing + Ambient + Cumul _Project (2020)				
	Segment	Peak Hour	Traffic Breakdown			Peak Hour Traffic	Traffic Breakdown			Peak Hour Traffic	Traffic Breakdown			Peak Hour Traffic	Traffic Breakdown			
			Cars	MT	HT		Cars	MT	HT		Cars	MT	HT		Cars	MT	HT	Speed
Rancho California Road			92%	3%	5%		92.0%	3.0%	5.0%		92.0%	3.0%	5.0%		92.0%	3.0%	5.0%	
	Glen Oaks to Monte	810	745	24	41	907	834	27	45	1,155	1063	35	58	1,239	1140	37	62	55
	Monte to Anza	1023	941	31	51	1146	1054	34	57	1,394	1282	42	70	1,524	1402	46	76	55
Warren Road			97.4%	1.84%	0.74%		97.4%	1.84%	0.74%		97.4%	1.84%	0.74%		97.4%	1.84%	0.74%	
	Benton to Borel	404	393	7	3	454	442	8	3	526	512	10	4	570	555	10	4	55
Borel Road			97.4%	1.84%	0.74%		97.4%	1.84%	0.74%		97.4%	1.84%	0.74%		97.4%	1.84%	0.74%	
	W of Warren Rd.	404	393	7	3	454	442	8	3	540	526	10	4	584	569	11	4	55
Buck Road/Future Roadway			97.4%	1.84%	0.74%		97.4%	1.84%	0.74%		97.4%	1.84%	0.74%		97.4%	1.84%	0.74%	
	Glen Oaks to Benton	561	546	10	4	629	613	12	5	804	783	15	6	883	860	16	7	55
Internal Roadway A											97.4%	1.84%	0.74%		97.4%	1.84%	0.74%	
	South of Borel									9	9	0	0	9	9	0	0	25
Internal Roadway B											97.4%	1.84%	0.74%		97.4%	1.84%	0.74%	
	North of Buck									38	37	1	0	38	37	1	0	25
Internal Roadway C											97.4%	1.84%	0.74%		97.4%	1.84%	0.74%	
	North of Buck									38	37	1	0	38	37	1	0	25
Internal Roadway D											97.4%	1.84%	0.74%		97.4%	1.84%	0.74%	
	North of Buck									64	62	1	0	64	62	1	0	25
Internal Roadway E											97.4%	1.84%	0.74%		97.4%	1.84%	0.74%	
	West of Rncho Cal									113	110	2	1	113	110	2	1	25
Internal Roadway F											97.4%	1.84%	0.74%		97.4%	1.84%	0.74%	
	West of Rncho Cal									188	183	3	1	118	115	2	1	25

Existing and Future Traffic Levels - Weekend

Roadway		Existing Conditions (2014)				Existing + Ambient (2020)				Existing + Ambient + Project (2020)				Existing + Ambient + Cumul _Project (2020)				
	Segment	Peak Hour	Traffic Breakdown			Peak Hour	Traffic Breakdown			Peak Hour Traffic	Traffic Breakdown			Peak Hour Traffic	Traffic Breakdown			
			Cars	MT	HT		Cars	MT	HT		Cars	MT	HT		Cars	MT	HT	Speed
Rancho California Road			92%	3%	5%		92.0%	3.0%	5.0%		92.0%	3.0%	5.0%		92.0%	3.0%	5.0%	
	Glen Oaks to Monte	960	883	29	48	1076	990	32	54	1,427	1313	43	71	1,585	1458	48	79	55
	Monte to Anza	1377	1267	41	69	1543	1420	46	77	1,895	1743	57	95	2,146	1974	64	107	55
Warren Road			97.4%	1.84%	0.74%		97.4%	1.84%	0.74%		97.4%	1.84%	0.74%		97.4%	1.84%	0.74%	
	Benton to Borel	414	403	8	3	464	452	9	3	594	579	11	4	678	660	12	5	55
Borel Road			97.4%	1.84%	0.74%		97.4%	1.84%	0.74%		97.4%	1.84%	0.74%		97.4%	1.84%	0.74%	
	W of Warren Rd.	414	403	8	3	464	452	9	3	566	551	10	4	650	633	12	5	55
Buck Road/Future Roadway			97.4%	1.84%	0.74%		97.4%	1.84%	0.74%		97.4%	1.84%	0.74%		97.4%	1.84%	0.74%	
	Glen Oaks to Benton	440	429	8	3	493	480	9	4	747	728	14	6	899	876	17	7	55
Internal Roadway A											97.4%	1.84%	0.74%		97.4%	1.84%	0.74%	
	South of Borel									11	11	0	0	11	11	0	0	25
Internal Roadway B											97.4%	1.84%	0.74%		97.4%	1.84%	0.74%	
	North of Buck									36	35	1	0	36	35	1	0	25
Internal Roadway C											97.4%	1.84%	0.74%		97.4%	1.84%	0.74%	
	North of Buck									36	35	1	0	36	35	1	0	25
Internal Roadway D											97.4%	1.84%	0.74%		97.4%	1.84%	0.74%	
	North of Buck									68	66	1	1	68	66	1	1	25
Internal Roadway E											97.4%	1.84%	0.74%		97.4%	1.84%	0.74%	
	West of Rncho Cal									141	137	3	1	141	137	3	1	25
Internal Roadway F											97.4%	1.84%	0.74%		97.4%	1.84%	0.74%	
	West of Rncho Cal									348	339	6	3	348	339	6	3	25

EXISTING AND FUTURE TRAFFIC NOISE LEVELS - Weekday (offsite impacts)

Roadway/Segment	Existing Conditions (2014)				Existing + Ambient (2020)					Existing + Ambient + Project (2020)					
	CNEL @ 100 ft. (dBA)	70 CNEL (ft.)	65 CNEL (ft.)	60 CNEL (ft.)	CNEL @ 100 ft. (dBA)	Change at 100 (ft) (dBA)	70 CNEL (ft.)	65 CNEL (ft.)	60 CNEL (ft.)	CNEL @ 100 ft. (dBA)	Change from No Project 2014 (100 ft) (dBA)	Change from No Project 2020 (100ft) (dBA)	70 CNEL (ft.)	65 CNEL (ft.)	60 CNEL (ft.)
Rancho California Road															
Glen Oaks to Monte	63.5	50	85	150	64.0	0.5	53	90	155	**65.1**	1.6	**1.1**	60	100	175
Monte to Anza	64.5	56	95	165	65.0	0.5	58	100	175	**65.9**	1.4	**0.9**	65	110	190
Warren Road															
Benton to Borel	58.9	20	55	90	59.4	0.5	22	57	95	**60.1**	1.2	**0.7**	27	62	100
Borel Road															
W of Warren Rd.	58.9	20	55	90	59.4	0.5	22	57	95	**60.2**	1.3	**0.8**	27	62	101
Buck Road/Future Roadway															
Glen Oaks to Benton	60.3	27	63	103	60.9	0.6	33	66	110	**61.9**	1.6	**1.0**	40	74	120
Internal Roadway A															
South of Borel															
Internal Roadway B															
North of Buck															
Internal Roadway C															
North of Buck															
Internal Roadway D															
North of Buck															
Internal Roadway E															
West of Rncho Cal															
Internal Roadway F															
West of Rncho Cal															

EXISTING AND FUTURE TRAFFIC NOISE LEVELS - Weekend (offsite impacts)

	Existing Conditions (2014)				Existing + Ambient (2020)					Existing + Ambient + Project (2020)					
Roadway/Segment	CNEL @ 100 ft. (dBA)	70 CNEL (ft.)	65 CNEL (ft.)	60 CNEL (ft.)	CNEL @ 100 ft. (dBA)	Change at 100 (ft) (dBA)	70 CNEL (ft.)	65 CNEL (ft.)	60 CNEL (ft.)	CNEL @ 100 ft. (dBA)	Change from No Project 2014 (100 ft) (dBA)	Change from No Project 2020 (100ft) (dBA)	70 CNEL (ft.)	65 CNEL (ft.)	60 CNEL (ft.)
Rancho California Road															
Glen Oaks to Monte	64.2	55	92	160	64.7	0.5	57	96	170	**66.0**	1.8	**1.3**	65	110	195
Monte to Anza	65.8	65	110	190	66.3	0.5	68	115	200	**67.2**	1.4	**0.9**	75	127	220
Warren Road															
Benton to Borel	59.0	20	55	90	59.5	0.5	24	58	95	**60.6**	1.6	**1.1**	30	65	106
Borel Road															
W of Warren Rd.	59	20	55	90	59.5	0.5	24	58	95	**60.3**	1.3	**0.8**	29	64	104
Buck Road/Future Roadway															
Glen Oaks to Benton	59.3	21	58	95	59.8	0.5	25	60	99	**61.6**	2.3	**1.8**	39	71	117
Internal Roadway A															
South of Borel															
Internal Roadway B															
North of Buck															
Internal Roadway C															
North of Buck															
Internal Roadway D															
North of Buck															
Internal Roadway E															
West of Rncho Cal															
Internal Roadway F															
West of Rncho Cal															