Lake Elsinore Honda Project

Acoustical Analysis Report

April 2018 | DEA-08

Prepared for:

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TABLE OF CONTENTS

TABLE OF CONTENTS (cont.)

LIST OF APPENDICES

LIST OF FIGURES

LIST OF TABLES

EXECUTIVE SUMMARY

This report assesses potential construction and operational noise impacts associated with the proposed Lake Elsinore Honda project (project).

The project site is located on an approximately 7-acre site in the City of Lake Elsinore, California (City) at the northern corner of the intersection of Collier Avenue and 3rd Street. The project would construct an automobile dealership, which would include showroom displays, sales offices, parts inventories, automotive repair services, a hand detailing car wash, and an automated car wash.

On-site noise impacts from Interstate 15 would be less than significant with the provision of a fresh air supply or air conditioning system, so that windows may be closed to achieve acceptable interior noise levels at occupied areas of the automobile dealership.

Combined operational noise sources, including the project's automobile servicing floor, automated car wash, and hand detailing car wash, do not exceed limits defined by the City Municipal Code for operational sources at the nearest property lines. Impacts would be less than significant, and no mitigation measures would be required.

Construction would generate elevated noise levels but would remain below established thresholds at occupied commercial uses located across Collier Avenue. Temporary construction noise levels may exceed established thresholds at properties immediately adjacent to northwest and southeast of the project site, but these properties would be unoccupied during construction activities, and impacts would be less than significant. Vibration impacts from use of a vibratory roller during construction would not exceed applicable standards.

The project would add traffic to nearby roadways, but transportation noise impacts to off-site land uses would be less than significant.

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1.0 INTRODUCTION

1.1 PURPOSE OF THE REPORT

This report analyzes potential noise and vibration impacts associated with the proposed Lake Elsinore Honda Dealership project (project). The analysis includes a description of existing conditions in the project vicinity, an assessment of potential impacts associated with project construction, and an evaluation of project operational noise impacts. Analysis within this report addresses the relevant issues listed in Appendix G of the California Environmental Quality Act (CEQA) Guidelines.

1.2 PROJECT LOCATION

The project site is located on an approximately 7-acre site in the City of Lake Elsinore, California (City) at the northern corner of the intersection of Collier Avenue and 3rd Street. Interstate (I-) 15 borders the site along the northeastern edge. A lot currently under the construction of a commercial use is located along the project's northwestern boundary. A pump station is located immediately adjacent to the southwestern edge of the site, separated from the site by a 6-foot masonry wall. Commercial manufacturing and office uses are located to the southwest across Collier Avenue. See Figure 1, *Regional Location*, and Figure 2, *Project Vicinity*.

1.3 PROJECT DESCRIPTION

The project proposes a Honda automotive dealership on an undeveloped site that currently consists of three contiguous parcels (Assessor's Parcel Numbers [APN] 377-080-053, 377-080-057, and 377-080-079). The project would construct a single-story, approximately 30-foot high structure which includes showroom displays, sales offices, parts inventories, automotive repair services, and a hand-detailing car wash. A separate automated car wash building would be constructed northeast of the main structure, near I-15. See Figure 3, *Site Plan*.

Other features include a large paved area for car sales, car servicing, and parking. The project would contain 465 parking spaces, 244 of which would be for inventory and display. Two driveways would be located along Collier Drive. The existing masonry wall would be protected in place. Landscaped areas would be located throughout the site and a treatment area would be located along the northwestern edge of the site.

The project would require earthwork activities, including 3,800 cubic yards of cut and 24,00 cubic yards of fill.

The site is zoned as General Commercial (GC) with a General Commercial land use designation.

1.4 NOISE AND SOUND LEVEL DESCRIPTORS AND TERMINOLOGY

1.4.1 Descriptors

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 noise 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.

1.4.2 Terminology

1.4.2.1 Sound, Noise, and Acoustics

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 determines 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.

1.4.2.2 Frequency

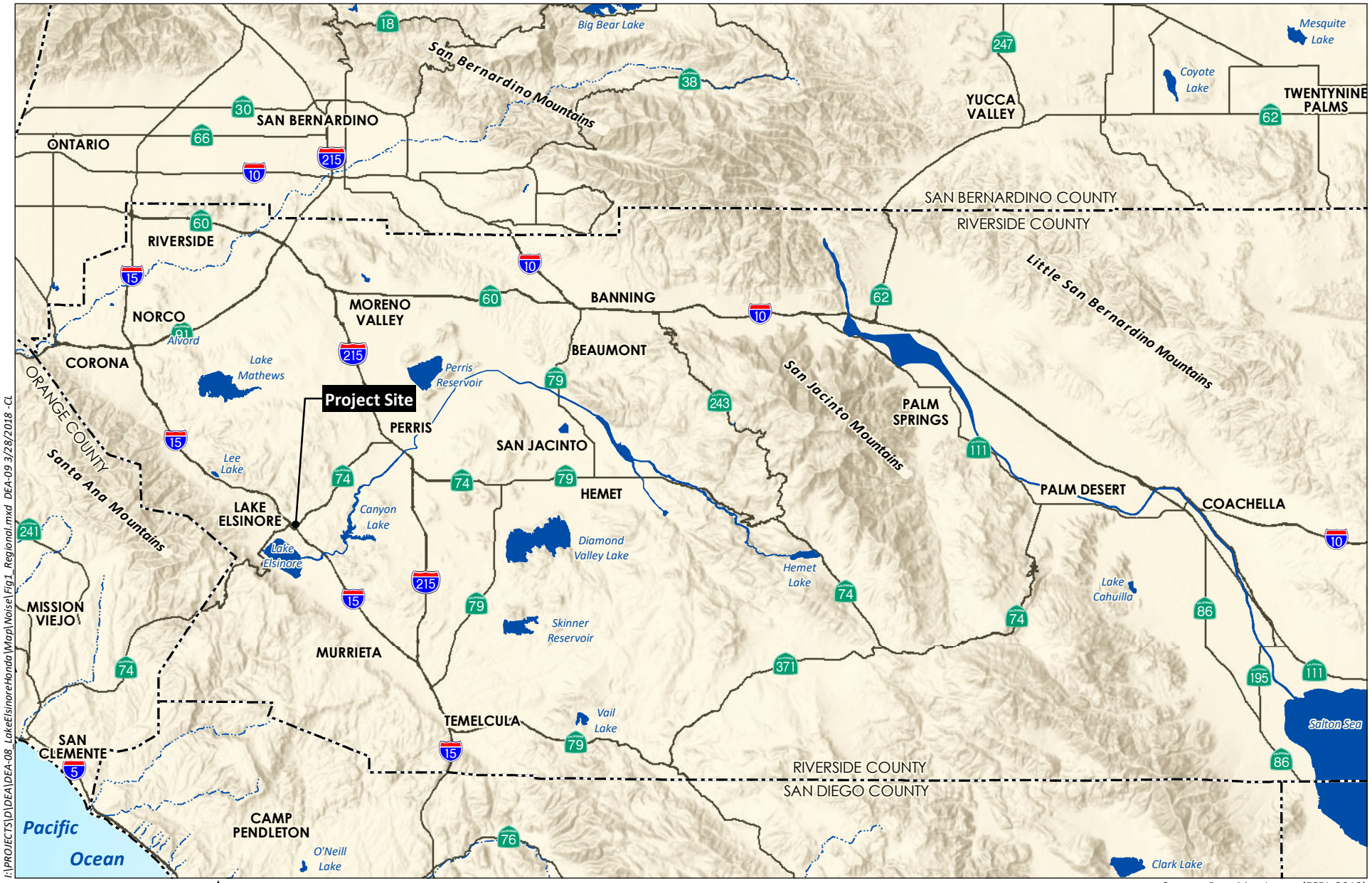
Continuous sound can be described by frequency (pitch) and amplitude (loudness). A low-frequency sound is perceived as low in pitch. Frequency is expressed in terms of cycles per second, or Hertz (Hz) (e.g., a frequency of 250 cycles per second is referred to as 250 Hz). High frequencies are sometimes 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.

1.4.2.3 Sound Pressure Levels and Decibels

The amplitude of pressure waves generated by a sound source determines the loudness of that source. Sound pressure amplitude is measured in micro-Pascals (mPa). One mPa is approximately one hundred billionth (0.00000000001) of normal atmospheric pressure. Sound pressure amplitudes for different kinds of noise environments can range from less than 100 to 100,000,000 mPa. Because of this wide range of values, sound is rarely expressed in terms of mPa. Instead, a logarithmic scale is used to describe sound pressure level (SPL) in terms of dBA. The threshold of hearing for the human ear is about 0 dBA, which corresponds to 20 mPa.

Because decibels are logarithmic units, SPL cannot be added or subtracted through standard 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 from one source under the same conditions. For example, if one automobile produces an SPL of 70 dB when it passes an observer, two cars passing simultaneously would not produce 140 dBA—rather, they would combine to produce 73 dBA. Under the decibel scale, three sources of equal loudness together produce a sound level 5 dBA louder than one source.

Honda Lake Elsinore



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0 10 Miles

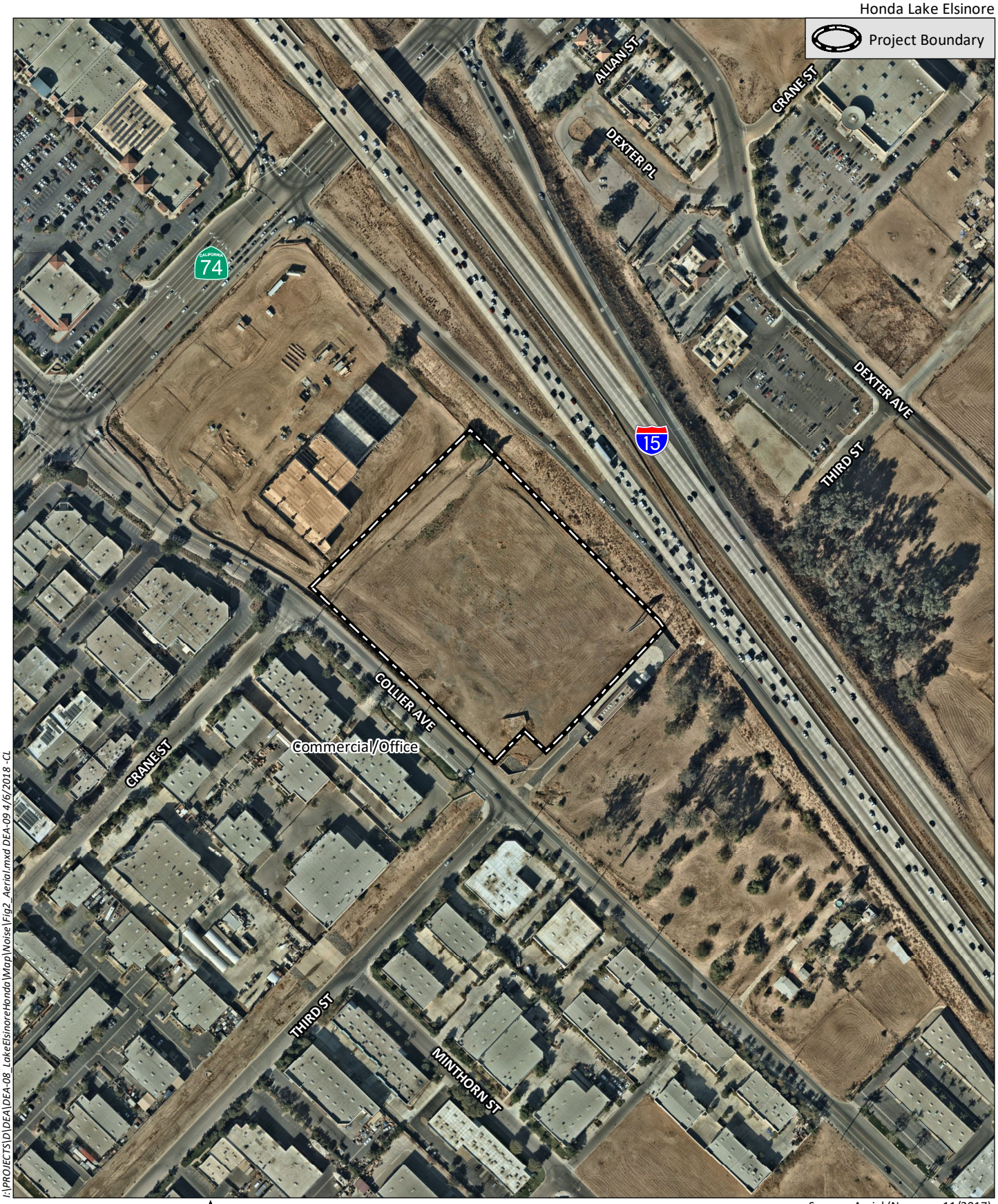
Source: Base Map Layers (ESRI, 2013)

HELIX Environmental Planning

Regional Location

Figure 1

Honda Lake Elsinore



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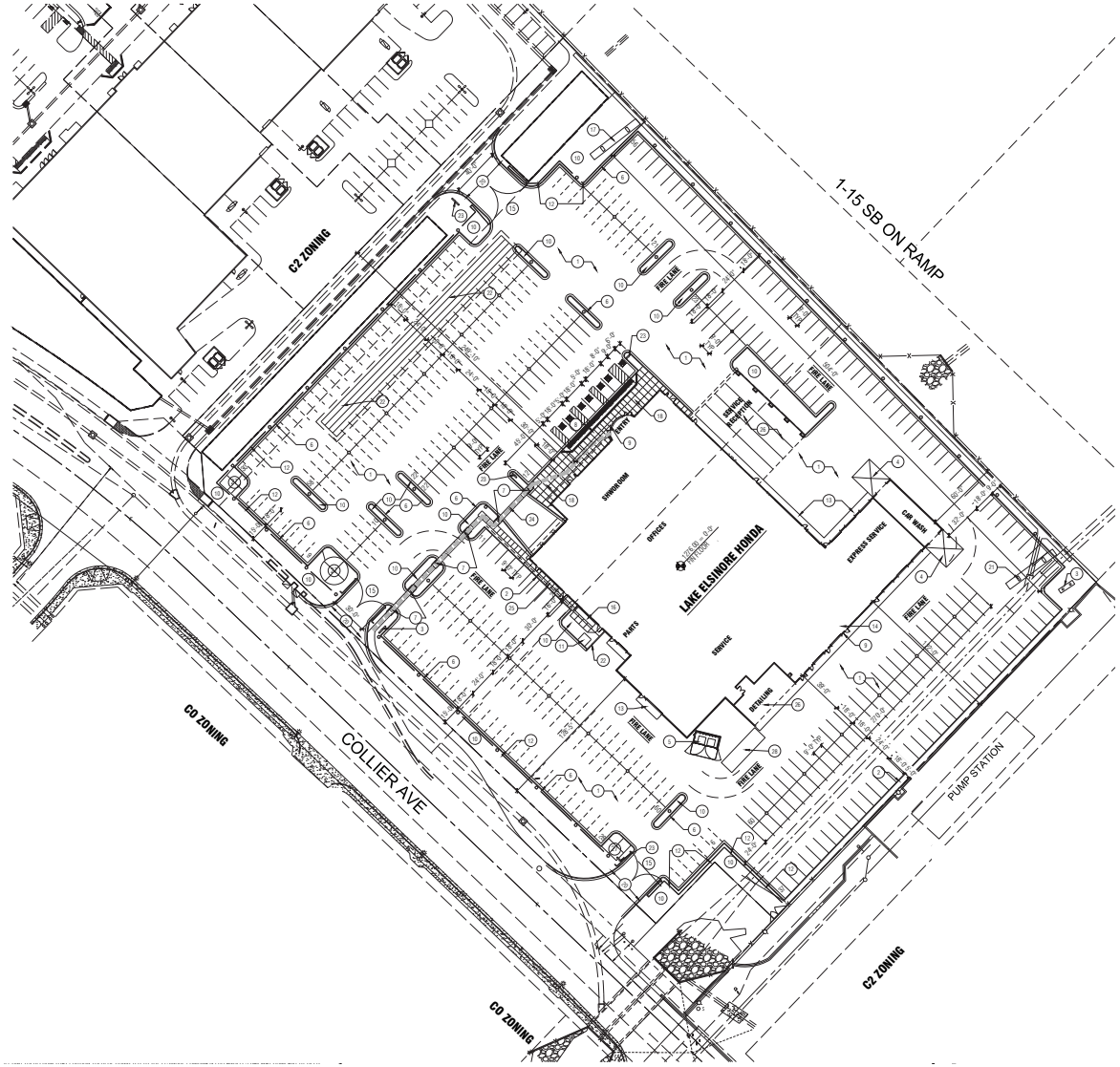
0 300 Feet

Source: Aerial (Nearmap 11/2017).

HELIX Environmental Planning

Project Vicinity

Figure 2



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Source: David Evans and Associates, 2018

HELIX Environmental Planning

Site Plan

Figure 3

Under controlled conditions in an acoustical laboratory, the trained, healthy human ear is able to discern 1-dBA changes in sound levels, when exposed to steady, single-frequency ("pure-tone") signals in the mid-frequency (1,000 Hz–8,000 Hz) range. In typical noisy environments, changes in noise of 1 to 2 dBA are generally not perceptible. It is widely accepted, however, that people begin to detect sound level increases of 3 dB in typical noisy environments. Further, a 5-dBA increase is generally perceived as a distinctly noticeable increase, and a 10-dBA increase is generally perceived as a doubling of loudness.

No known studies have directly correlated the ability of a healthy human ear to discern specific levels of change in traffic noise over a 24-hour period. Many ordinances, however, specify a change of 3 CNEL as the significant impact threshold. This is based on the concept of a doubling in noise energy resulting in a 3-dBA change in noise, which is the amount of change in noise necessary for the increase to be perceptible to the average healthy human ear.

1.5 NOISE-SENSITIVE LAND USES

Noise-sensitive land uses (NSLUs) are land uses that may be subject to stress and/or interference from excessive noise, including residences, hospitals, schools, hotels, resorts, libraries, sensitive wildlife habitat, or similar facilities where quiet is an important attribute of the environment. Noise receptors are individual locations that may be affected by noise. No NSLUs are within the immediate vicinity of the project site. The nearest NSLU is Ortega High School located approximately 0.35 miles south of the project site.

1.6 REGULATORY FRAMEWORK

1.6.1 California Noise Control Act

The California Noise Control Act is a section within the California Health and Safety Code that describes excessive noise as a serious hazard to the public health and welfare and that exposure to certain levels of noise can result in physiological, psychological, and economic damage. It also finds that there is a continuous and increasing bombardment of noise in the urban, suburban, and rural areas. The California Noise Control Act declares that the State of California has a responsibility to protect the health and welfare of its citizens by the control, prevention, and abatement of noise. It is the policy of the State to provide an environment for all Californians free from noise that jeopardizes their health or welfare.

1.6.2 City of Lake Elsinore General Plan, Noise Element

The Noise Element of the City's General Plan includes a noise/land use compatibility matrix for assessing the suitability of different categories of planned land uses based on exterior noise level exposure (Table 3-1 from the City General Plan). For the project's automotive dealership commercial land use, the Noise Element specifies exterior noise levels up to 70 CNEL as clearly compatible.

1.6.3 City of Lake Elsinore, Noise Ordinance (Municipal Code, Chapter 17.176, Noise Control)

Sections 17.176.010 through 17.176.110 of the City of Lake Elsinore Municipal Code pertain to City noise requirements and enforcement of violations.

Table 1, *City of Lake Elsinore Exterior Noise Limits,* lists the applicable exterior property line noise limits. It is unlawful for any person to cause or allow the creation of any noise that exceeds the following noise limits for more than 30 minutes in any hour.

Table 1
CITY OF LAKE ELSINORE EXTERIOR NOISE LIMITS

Receiving Land Use Category	Time Period	Noise Level (dBA)
Single-Family Residential	10:00 p.m. – 7:00 a. m. 7:00 a.m. – 10:00 p. m.	40 50
Multiple Dwelling Residential	10:00 p.m. – 7:00 a. m. 7:00 a.m. – 10:00 p. m.	45 50
Public Space, Limited Commercial and Office	10:00 p.m. – 7:00 a. m. 7:00 a.m. – 10:00 p. m.	55 60
General Commercial	10:00 p.m. – 7:00 a. m. 7:00 a.m. – 10:00 p. m.	60 65
Light Industrial	Anytime	70
Heavy Industrial	Anytime	75

Source: City of Lake Elsinore Municipal Code Section 17.176.060

The project site and immediately adjacent properties are zoned as General Commercial. The adjacent properties, however, are currently undeveloped. Properties located across Collier Avenue are zoned as Commercial Manufacturing, which would fall under the Light Industrial receiving land use category.

The City of Lake Elsinore Noise Ordinance also stipulates controlling construction noise. Lake Elsinore Municipal Code Section 17.176.080, Prohibited acts, states that, except for emergency work, it shall be unlawful for any person to operate or cause to be operated construction equipment:

A. Between 7:00 p.m. and 7:00 a.m., or at any time on weekends or holidays, such that the sound therefrom creates a noise disturbance across a residential or commercial real property line.

B. At affected business properties: in excess of a maximum of 85 dBA daily, including Sundays and Legal holidays, during all hours for nonscheduled, intermittent, short-term operation of mobile equipment.

C. At affected business properties: in excess of a maximum of 75 dBA daily, including Sundays and Legal Holidays, during all hours for repetitively scheduled and relatively long-term operation of stationary equipment.

2.0 ENVIRONMENTAL SETTING

2.1 SURROUNDING LAND USES

Collier Avenue forms the southwestern boundary of the project. A pump station and 6-foot masonry wall form the southeastern boundary, and I-15 forms the northeastern boundary. A lot currently under the construction of a commercial use is located to the northwest of the project site. Commercial/office buildings are located to the southwest across Collier Avenue. Refer to Figure 2 for nearby land uses.

2.2 EXISTING NOISE ENVIRONMENT

The existing noise environment is dominated by traffic noise from I-15 to the northeast.

2.2.1 Ambient Noise Survey

One measurement was included in the ambient noise survey. The location of the measurement was at the entrance to the site along Collier Avenue. The measured noise level and related environmental conditions are shown in Table 2, *Noise Measurement Results*.

Table 2
NOISE MEASUREMENT RESULTS

Measurement 1	
Date:	February 20, 2018
Conditions:	Temperature: 59°F. Wind Speed: 0 mph. Sunny.
Time:	3:50 p.m. – 4:00 p.m.
Location:	Entrance to site along Collier Avenue
Measured Noise Level:	62.7 dBA L_{EQ}

3.0 ANALYSIS, METHODOLOGY, AND ASSUMPTIONS

3.1 METHODOLOGY

3.1.1 Ambient Noise Survey

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

- Larson Davis 831 Noise Meter
- Larson Davis Model CA250 Calibrator
- Windscreen and tripod for the sound level meter

The sound level meter was field-calibrated immediately prior to the noise measurements to ensure accuracy. All sound level measurements conducted and presented in this report were made with a sound level meter that conforms to the American National Standards Institute (ANSI) specifications for sound level meters (ANSI SI.4-1983 R2006). All instruments were maintained with National Institute of Standards and Technology traceable calibration per the manufacturers' standards.

3.1.2 Noise Modeling Software

Modeling of the exterior noise environment for this report was accomplished using Computer Aided Noise Abatement (CadnaA) version 2018. CadnaA is a model-based computer program developed by *DataKustik* for predicting noise impacts in a wide variety of conditions. CadnaA assists in the calculation, presentation, assessment, and mitigation of noise exposure. It allows for the input of project-related information, such as noise source data, barriers, structures, and topography to create a detailed CadnaA

model, and uses the most up-to-date calculation standards to predict outdoor noise impacts. Input variables included road alignment, elevation, lane configuration, area topography, existing and planned noise control features, projected traffic volumes, estimated truck composition percentages, and vehicle speeds.

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 10 percent of the average daily traffic would occur during a peak hour. The model-calculated one-hour L_{EQ} noise output is the 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 standard construction equipment.

3.2 ASSUMPTIONS

3.2.1 Construction Equipment

Construction would require the use of equipment throughout the site for the full term of construction. Construction activities would include site preparation, demolition, grading, installation of underground utilities, building construction, and paving. Equipment used on site would include an excavator, backhoe, dump truck, forklift, crane, scraper, dozer, vibratory roller, paver, and other smaller equipment. Construction-related noise levels would be highest during the simultaneous use of a scraper and a dozer during grading of the site.

The most likely source of vibration during project construction would be a vibratory roller, which may be used to achieve soil and fill compaction as part of foundation construction.

3.2.2 Automobile Servicing

The service entrance and receiving area for incoming vehicles would not have any external speaker paging system. Noise sources in this area would be from incoming vehicles, such as idling engines and occasional tire squeal, and human activity, such as talking. For the purposes of this analysis, noise levels within the entrance area is assumed to be approximately 70 dBA L_{EQ}.

Work at the service floor shop is assumed to be conducted predominately with battery-powered tools and occasional air tools used for limited work. For the purposes of this analysis, noise generated within the service area is assumed to be approximately 70 dBA L_{EQ}. It was also assumed that bay doors at the service floor shop would be open during operation, thus allowing for the transmission of noise to the exterior of the shop.

3.2.3 Automated Car Wash

Noise generated by the automated car wash is assumed to be from several internal sources. The loudest single source is the air-blast drying systems (blower) just inside the car wash exit. Additional noise would be generated by the interior spray washers and hydraulics systems.

The manufacturer's data sheet for the blower is summarized in Table 3, *Blower Data Table at 50 Feet*, and is attached as Appendix A, *Aerodry Summary Report*. The specific unit analyzed is the

60 horsepower (HP) unit using the sound power levels shown in Table 4, *60 HP Blower Unit Octave Data*. The interior hydraulics and nozzles are assumed to generate 65 dBA at 20 feet. All of the systems are analyzed on a 15-minutes per hour operating time.

Table 3
BLOWER DATA TABLE AT 50 FEET

Octave Band Center Frequency	16 Hz	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 KHz	2 KHz	4 KHz	8 KHz	16 KHz
A45	65.1	70.8	65.6	61.9	69.5	54.2	53.5	48.8	42.4	31.1	74.3
A60	65.5	71.6	65.2	62.6	69.5	56.5	55.1	50.3	43.9	33.1	74.3
A60+	66.8	72.2	65.5	64.3	71.2	56.5	55.1	50.8	44.4	33.1	74.3
A90	66.5	72.8	66.5	63.2	69.4	56.8	56.8	52.3	45.9	35.1	74.3
A120	67.8	74.7	67.5	64.8	70.9	59.1	58.5	53.8	47.6	37.1	74.3
A75	66.8	73.6	65.8	63.9	69.6	57.1	56.1	51.8	44.6	34.1	14.8

Hz=Hertz; kHz=kilohertz

Table 4
60 HP BLOWER UNIT OCTAVE

Octave Band Center Frequency	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 KHz	2 KHz	4 KHz	8 KHz
Manufacturer's Data	89.3	95.4	89	86.4	93.3	80.3	79	74.6	69.6

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

3.2.4 Hand Detailing Car Wash

The wet spray washer nozzles and the vacuum wand nozzles are assumed to generate noise levels of 65 dBA L_{EQ} measured at 20 feet. Equipment for hand detailing is assumed to be operating 15 minutes in a given hour at each of two locations.

3.2.5 Vehicular Traffic

Existing and project-generated traffic volumes in the vicinity of the project site was provided by the project's Traffic Impact Analysis (David Evans and Associates, Inc. [DEA] 2018). It is estimated that the project would generate 1,487 daily trips, including 100 primary trips during the AM peak hour, 130 primary trips during the PM peak hour, and 215 trips during the Saturday peak hours. Existing traffic volumes along I-15 near the project site were provided by the Caltrans Traffic Census Program (Caltrans 2017). At the junction with Route 74, there were 242,000 average daily trips along I-15 in 2016.

3.3 GUIDELINES FOR THE DETERMINATION OF SIGNIFICANCE

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 City of Lake Elsinore General Plan or noise ordinance.*

Noise exposure within the project would be significant if proposed exterior spaces exceed noise levels of 70 CNEL. Noise generated by the project would be significant if daytime or nighttime noise levels at the property line of a Commercial Manufacturing zone exceed 70 dBA L_{EQ}, if daytime noise levels at the property line of General Commercial zone exceed 65 dBA L_{EQ}, or if nighttime noise levels at the property line of a General Commercial zone exceed 60 dBA L_{EQ}.

Threshold 2: *Expose persons to or generate excessive ground-borne vibration or ground-borne noise levels.*

Vibration generated by the project would be significant if construction-related ground-borne vibration levels exceed the "strongly perceptible" vibration annoyance potential criteria for human receptors, as specified by Caltrans (2013), of 0.1 inches per second peak particle velocity (PPV), or 2.0 inches per second PPV for damage to industrial structures.

Threshold 3: *Cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.*

For traffic-related noise, impacts are considered significant in areas where implementation of the project would result in an increase of the ambient noise level by 3 dBA or more.

Threshold 4: *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 for nearby commercial properties if the maximum noise level exceeds 85 dBA for non-scheduled, intermittent, short-term operation of mobile equipment; if the maximum noise level exceeds 75 dBA for repetitively scheduled and relatively long-term operation of stationary equipment; or if construction activity occurs between the hours of 7:00 p.m. and 7:00 a.m. of the next day, on a weekend, or on a holiday.

***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 levels*.

Noise exposure within the project would be significant if proposed exterior spaces exceed noise levels of 70 CNEL.

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 City of Lake Elsinore General Plan or noise ordinance?

4.1.1 Exposure to Excessive Noise

On-site noise impacts would be significant if exterior noise levels adjacent to interior use areas exceed 70 CNEL. Vehicular noise from I-15 would be the most prominent noise source at the project site. As shown in Figure 4, *Interstate 15 Noise Contours*, noise levels in the northeastern portion of the site would exceed the 70 CNEL "clearly compatible" threshold. This portion of the site, however, is proposed as a parking area that would not include any noise-sensitive receptors or employees, and no noise control is required. Two portions of the proposed automotive dealership, the carwash and the service reception, are located in the northeastern portion of the site where noise levels would exceed 70 CNEL. The noise level at the northeastern exterior wall of the carwash would be 74 CNEL, which is classified at "normally compatible"; however, there is no interior use associated with the car wash. The noise level at the exterior of the service reception would be 73 CNEL, which is also classified as "normally compatible." Because the service reception would be an interior use area, it would have to comply with the Zone B – Normally Compatible requirements. Requirements include conventional construction with closed windows and the provision of a fresh air supply or air conditioning system. Upon compliance with these requirements, on-site noise impacts would be less than significant.

4.1.2 Noise Generation

Modeling for the project's operations includes the combined noise levels generated by the automobile servicing floor, automated car wash, and hand detailing car wash. The 6-foot masonry wall currently located along the southeastern border of the site was included in the model. Receivers in the model were located at six off-site locations in the immediate vicinity of the project site, as shown in Figure 5, *Operational Noise Contours*. The results of this modeling are shown in Table 5, *Operational Noise Levels.*

Table 5
OPERATIONAL NOISE LEVELS

Receiver	Zoning Designation	Noise Limit (dBA L_{EQ})	Noise Levels (dBA L_{EQ})
R1	C2	65	48.2
R2	C2	65	52.8
R3	CM	70	49.3
R4	CM	70	35.7
R5	C2	65	37.4
R6	C2	65	48.0

Noise levels at all six receivers were below the applicable noise limit for the nearby Commercial Manufacturing and General Commercial zones. As such, noise impacts from future project operations would be less than significant.

4.2 ISSUE 2: EXCESSIVE VIBRATION

Would the project expose persons to or generate excessive ground-borne vibration or noise levels?

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), which may be used within 60 feet of the nearest off-site commercial use. A vibratory roller creates approximately 0.210 inches per second (in/sec) peak particle velocity (PPV) at a distance of 25 feet. A 0.210 in/sec PPV vibration level would equal 0.08 in/sec PPV at a distance of 60 feet.[1] This would be lower than the 0.1 in/sec PPV vibration annoyance potential criteria for human receptors and the 2.0 in/sec PPV potential criteria for damage to industrial structures. Furthermore, the vibratory roller would be short-term and temporary, and no vibration from operation of the project is anticipated. Therefore, temporary impacts associated with the vibratory roller (and other potential equipment) would be less than significant.

4.3 ISSUE 3: PERMANENT INCREASE IN AMBIENT NOISE LEVELS

Would the project cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

As noted in the assumptions, existing and future traffic volumes used in this analysis were provided by the project's Traffic Impact Analysis (DEA 2018). The project is expected to generate 1,487 daily trips, including 100 primary trips during the AM peak hour, 130 primary trips during the PM peak hour, and 215 trips during the Saturday peak hours. A general rule of thumb is that a doubling of vehicles would cause a doubling in sound energy (a 3 CNEL increase), which would be considered a perceptible and significant increase. PM peak hour traffic volumes with and without the added project traffic are shown in Table 6, *Existing and Future Traffic Volumes*. Given the expected project-related increase in traffic, the project would not cause a doubling in traffic on Central Avenue, Collier Avenue, or other roads in the vicinity of the project site, and therefore would not result in a 3 CNEL increase in ambient noise levels. Impacts from off-site traffic noise would be less than significant.

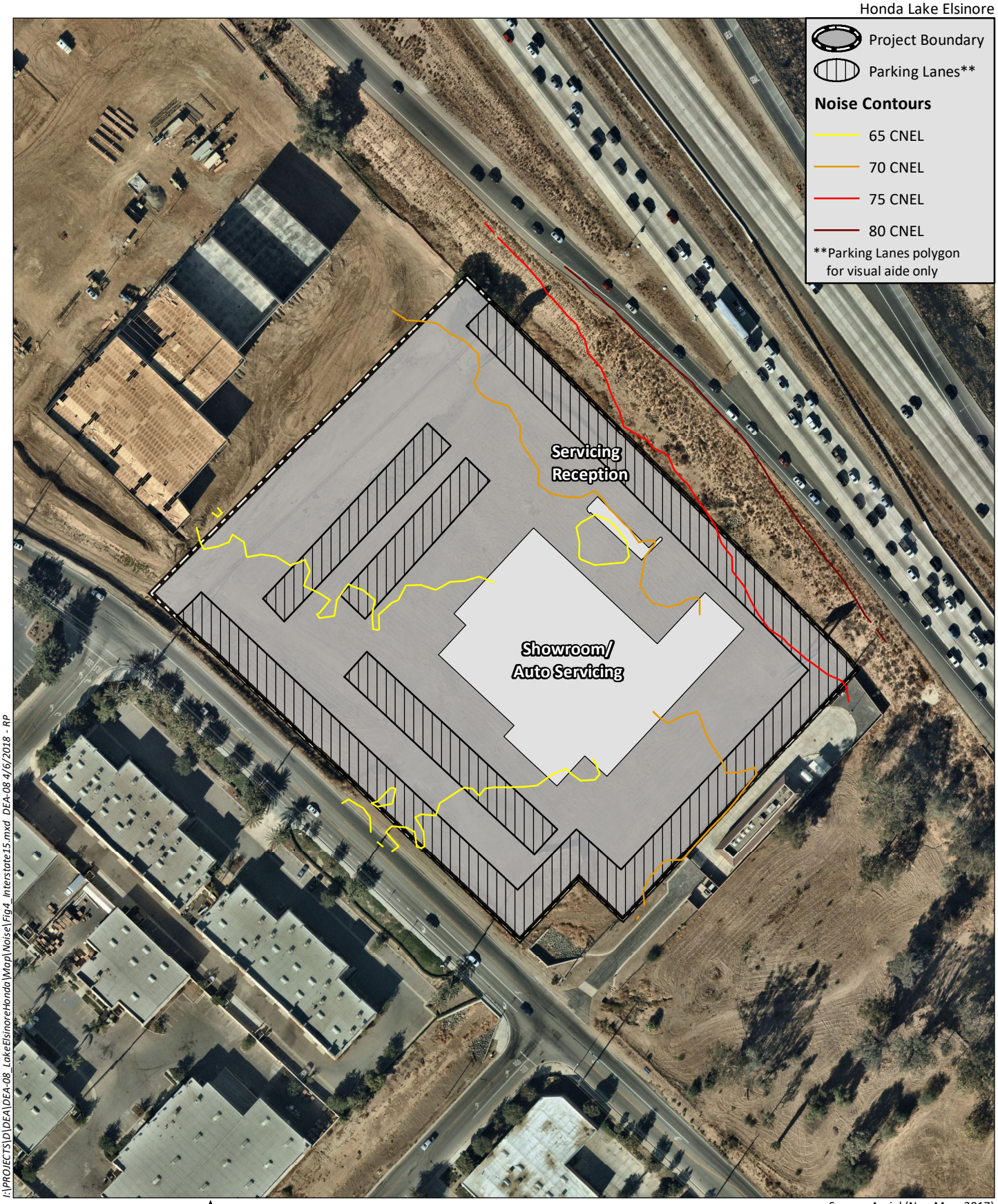
Table 6
EXISTING AND FUTURE TRAFFIC VOLUMES

Roadway Segment	Existing	Existing + Project	Change from Existing	Direct Impact[1]
Central Avenue				
Northeast of Collier Avenue	2,293	2,358	+65	No
Southwest of Collier Avenue	1,011	1,011	0	No
Collier Avenue				
Southeast of Central Avenue	1,072	1,170	+98	No
Northwest of Central Avenue	1,750	1,783	+33	No

[1] A direct impact to off-site uses would occur if the project more than doubles the existing traffic volumes and thus increases noise levels by more than 3 CNEL.

[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.

Honda Lake Elsinore



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0 150 Feet

Source: Aerial (NearMap, 2017)

HELIX Environmental Planning

Interstate 15 Noise Contours

Figure 4

Honda Lake Elsinore

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0 150 Feet

Source: Aerial (NearMap, 2017)

HELIX Environmental Planning

Operational Noise Contours

Figure 5

4.4 ISSUE 4: 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?

4.4.1 Construction Noise

Construction of the project would involve demolition of an existing on-site masonry wall, vegetation removal, grading, installation of underground utilities, construction of new buildings, and paving of the site. 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 intervening structures. Construction would generate elevated noise levels that may disrupt nearby commercial uses southwest of the project.

Construction equipment would not all operate at the same time or location. Furthermore, construction equipment would not be in constant use during the 8-hour operating day. A scraper and a dozer would likely be used to grade the site. The simultaneous use of a scraper and dozer would be the loudest combination of equipment and was therefore analyzed to provide a conservative analysis for construction noise impacts. The nearest commercial property is located as close as 60 feet to areas of the project site that would be graded. Table 7, *Construction Equipment Noise Levels,* provides the 60-foot distance noise level for expected construction equipment.

Table 7
CONSTRUCTION EQUIPMENT NOISE LEVELS

Unit	Percent Operating Time	L_{MAX} at 60 feet	dBA L_{EQ} at 60 feet
Backhoe	40	76.0	72.0
Concrete Mixer Truck	40	77.2	73.2
Concrete Pump Truck	20	79.8	72.8
Crane	16	79.0	71.0
Dozer	40	80.1	76.1
Dump Truck	40	74.9	70.9
Excavator	40	79.1	75.1
Front End Loader	40	77.5	73.5
Paver	50	75.6	72.6
Roller	20	78.4	71.4
Scraper	40	82.0	78.0

Source: RCNM

Based on these assumptions, the maximum noise level (L_{MAX}) generated by the simultaneous use of a scraper and a dozer at the point closest to the commercial uses across Collier Avenue would be 82.0 dBA L_{MAX} (see Appendix B, *Construction Noise Modeling Outputs*). This would not exceed the maximum allowable noise level of 85 dBA L_{MAX} for nonscheduled, intermittent, short-term operation of mobile equipment. Construction-related noise may be out of compliance at the properties immediately adjacent to the southeastern and northwestern boundaries of the project site; however, the pump station to the southeast is assumed to be unoccupied and the commercial property under construction to the northwest is assumed to not be in operation until after the completion of the proposed project's

construction activities. Therefore, temporary increases in noise level from construction activities would be less than significant.

4.5 ISSUE 5: AIRPORT NOISE EXPOSURE

Would the project expose people residing or working in the project area to excessive noise from a nearby public use airport or private airstrip?

4.5.1 Airport Noise

The project is subject to some distant aircraft noise, although the site is not located near a major public airport. The nearest airport is the private Skylark Airport, located approximately 4 miles to the southeast. Skylark Airport provides glider and skydiving opportunities, but due to its gravel and sand runway surface, it generally does not permit optimal conditions for frequent and convenient airport operations (City 2011). As such, no effects related to airport noise would occur at the project site, and impacts would be less than significant.

5.0 LIST OF PREPARERS

Hunter Stapp	Noise Analyst
Charles Terry	Principal Acoustician
Joanne M. Dramko, AICP	Senior Technical Specialist, QA/QC

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6.0 REFERENCES

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Appendix A

Aerodry Summary Report

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303.455.1900

August 11, 2016

Ms. Cheryl Dobie
Aerodry Systems, LLC
P.O. Box 907
Broomfield, Colorado 80038

Re: Aerodry – Spectral Sound Measurements (DLAA #16-131) Summary Report

Dear Cheryl,

The following is a summary of the blower sound level measurements taken at the site on August 4, 2016. Attached is Table 1 which is a summary of the 1/3 octave band sound measurements taken at the site.

We measured a variety of configurations with various model numbers that correspond to different groupings of dryers. The system sizes ranging from 45 HP to 120 HP consisted of configurations utilizing 1 and 2 overhead towers and 1 set of 6-outlet side columns..

Measurements were taken in ANSI-standard 1/3-octave bands between 25 Hertz (Hz) and 20,000 Hz. The blowers were located as shown in Figure 1. Sound measurements were taken outside the building at four distances: 1m, 20', 50', and 90' from the exterior edge of the building at centerline of the opening as shown in Figure 1.

Table 1 (enclosed) summarizes the measurements taken at the four measurement locations under six different operating conditions as described below Table 1.

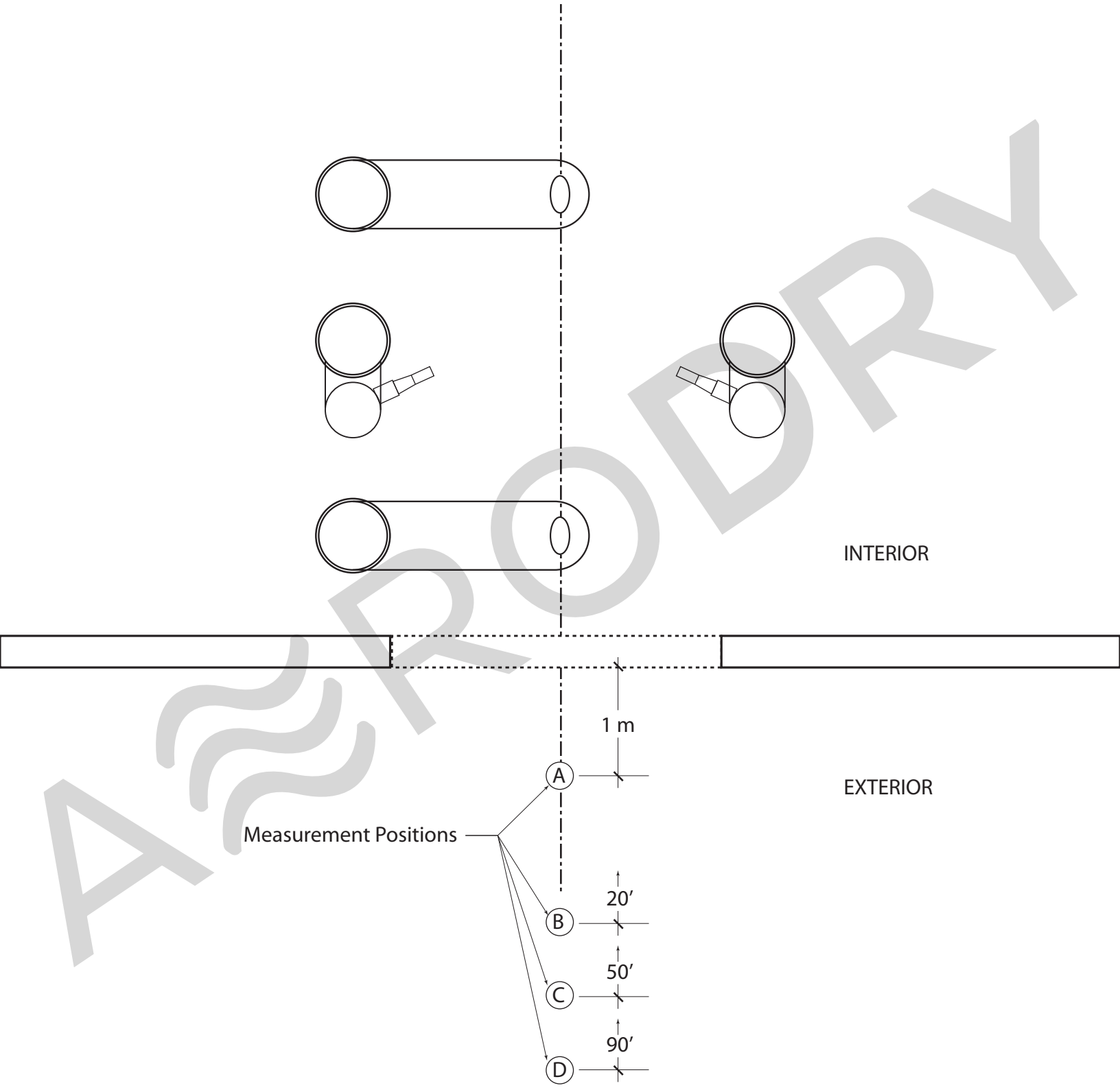
Measurements were taken with a Larson Davis Model 831 Type 1 sound level meter and a PCB Piezotronics Model 377B02 condensing microphone. Immediately prior to measuring, the sound level meter's calibration was checked and recorded. Calibration was again verified at the conclusion of the measurements. All of our equipment has been calibrated within the recommended time period set by the manufacturer. Documentation verifying measurement calibration compliance is available upon request,

If you have any questions, please call me.

Sincerely,

Mick Barnhardt
Senior Consultant

Encl: Figure 1; Table 1



Dryer Configuration

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Aerodry

scale: 1/4" = 1' - 0"

Figure 1

8-11-16 | Project No. 16-161 | Drawn by MBB

TABLE 1: Sound Measurement Summary (in dB)

		1/3 Octave Band Frequency																													
Location	**Condition**	**25.0**	**31.5**	**40.0**	**50.0**	**63.0**	**80.0**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**20000**	**dBA**
A	Condition 1	75	75	76	79	79	78	73	72	76	73	67	75	83	81	66	65	66	65	66	65	65	62	60	59	57	56	55	52	47	39	**82**
B	Condition 1	63	67	69	70	74	67	66	61	64	62	60	64	76	71	55	57	55	56	54	56	54	51	51	50	48	46	45	42	36	29	**74**
C	Condition 1	60	61	60	64	68	65	62	61	59	57	54	59	68	64	50	50	48	50	49	49	48	45	44	43	40	37	34	30	24	16	**67**
D	Condition 1	57	55	57	61	62	63	64	56	53	52	49	55	64	58	45	46	45	45	45	44	43	40	39	37	34	30	27	22	16	10	**62**
A	Condition 2	69	73	74	76	79	80	80	74	74	77	73	68	73	81	81	74	66	69	67	67	66	66	63	62	61	59	58	56	53	49	**81**
B	Condition 2	65	65	68	70	74	70	66	64	65	63	58	66	73	71	60	57	57	57	57	56	57	53	52	51	49	47	46	43	38	30	**73**
C	Condition 2	60	60	62	64	69	66	61	61	59	58	53	60	67	65	59	52	51	52	51	50	50	47	45	44	41	39	36	32	26	17	**67**
D	Condition 2	61	57	59	64	64	62	59	58	54	54	49	55	62	59	46	48	47	47	47	46	46	41	41	39	36	32	29	23	16	9	**62**
A	Condition 3	76	76	77	78	80	82	74	76	78	73	71	75	84	80	68	67	69	68	69	67	68	64	63	63	60	59	57	54	51	44	**83**
B	Condition 3	65	67	68	70	74	73	66	64	66	63	59	67	77	72	59	58	57	56	57	56	56	54	53	52	49	47	46	42	37	29	**75**
C	Condition 3	61	62	63	64	69	68	61	60	61	59	55	62	70	65	51	52	51	52	51	50	50	47	46	45	42	39	36	32	26	17	**68**
D	Condition 3	59	58	58	60	63	65	58	58	55	53	51	56	65	60	45	47	46	46	47	45	45	43	41	39	35	32	28	23	16	9	**63**
A	Condition 4	74	75	76	80	81	80	75	76	78	75	69	72	80	84	73	67	71	69	69	68	68	65	64	62	61	59	57	55	50	42	**84**
B	Condition 4	65	65	68	72	75	73	68	66	66	65	59	63	72	74	63	59	58	59	59	59	58	56	54	53	51	49	48	45	39	31	**74**
C	Condition 4	61	62	62	66	70	67	63	61	61	60	55	59	65	67	58	52	51	53	53	52	51	49	47	46	43	41	38	34	28	19	**68**
D	Condition 4	58	57	59	63	64	64	60	58	56	55	52	54	60	62	58	49	47	48	49	48	46	44	42	41	37	34	30	25	18	11	**63**
A	Condition 5	77	77	79	80	84	84	77	79	81	76	73	74	81	83	73	69	73	71	72	71	71	67	66	66	63	62	60	58	54	46	**85**
B	Condition 5	68	69	71	72	77	75	69	67	68	65	61	67	75	75	64	61	60	60	61	61	60	57	56	56	53	51	50	47	42	34	**76**
C	Condition 5	63	63	63	66	72	70	63	62	63	61	57	61	67	68	60	54	54	55	54	54	53	50	49	48	45	42	40	36	30	21	**69**
D	Condition 5	59	59	60	62	64	66	61	61	58	56	51	56	62	63	54	49	49	49	50	49	48	45	44	42	38	35	32	26	19	11	**64**
A	Condition 6	76	76	78	79	82	82	75	77	79	74	72	76	83	81	75	68	70	69	69	68	69	65	64	63	61	59	58	55	51	43	**84**
B	Condition 6	66	68	69	71	76	74	67	65	67	64	60	68	76	72	63	59	57	58	59	58	58	55	54	53	50	49	47	44	39	31	**75**
C	Condition 6	62	62	62	64	71	69	62	60	61	59	56	61	68	64	55	53	52	52	52	51	51	48	47	46	42	39	37	33	27	18	**68**
D	Condition 6	58	58	58	62	63	65	60	59	58	55	51	55	63	60	50	48	46	47	48	47	46	44	41	40	36	32	29	24	17	10	**63**

Location A: 1 meter from exterior door opening
Location B: 20 feet from exterior door opening
Location C: 50 feet from exterior door opening
Location D: 90 feet from exterior door opening

Condition 1: Model A45
Condition 2: Model A60
Condition 3: Model A60+
Condition 4: Model A90
Condition 5: Model A120
Condition 6: Model A75

Results are exclusive to the Advantage Drying System manufactured by Aerodry Systems, LLC. Use and interpretation for other equipment models or brands is expressly prohibited. Aerodry Systems, LLC is an independent, certified WBE.

Appendix B

Construction Noise Modeling Outputs

Roadway Construction Noise Model (RCNM),Version 1.1
Project: DEA-08
Report date: 4/3/2018

Receptor

		Baselines (dBA)		
Description	**Land Use**	**Daytime**	**Evening**	**Night**
Commercial Manufacturing	Industrial	70	70	70

Equipment

Description	**Usage(%)**	**Spec Lmax (dBA)**	**Actual Lmax (dBA)**	**Distance (feet)**	**Estimated shielding (dBA)**
Dozer	40	85	81.7	60	0
Scraper	40	85	83.6	60	0

Results

	Calculated (dBA)	
Equipment	***Lmax**	**Leq**
Dozer	80.1	76.1
Scraper	82	78
Total	82	80.2