APPENDIX D

Noise Study Report

DRAFT

NOISE IMPACT ANALYSIS
TIGE WATERSPORTS PROJECT
CITY OF LAKE ELSINORE

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PROJECT NO. 17016

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ACRONYMS AND ABBREVIATIONS

ANSI	American National Standards Institute
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
dB	Decibel
dBA	A-weighted decibels
DOT	Department of Transportation
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
EPA	Environmental Protection Agency
Hz	Hertz
Ldn	Day-night average noise level
Leq	Equivalent sound level
Lmax	Maximum noise level
ONAC	Federal Office of Noise Abatement and Control
OSB	Oriented Strand Board
OSHA	Occupational Safety and Health Administration
PPV	Peak particle velocity
RMS	Root mean square
SEL	Single Event Level or Sound Exposure Level
STC	Sound Transmission Class
UMTA	Federal Urban Mass Transit Administration

1.0 INTRODUCTION

1.1 Purpose of Analysis and Study Objectives

This Noise Impact Analysis has been prepared to determine the noise impacts associated with the proposed Tige Watersports project (proposed project). The following is provided in this report:

- A description of the study area and the proposed project;
- Information regarding the fundamentals of noise;
- Information regarding the fundamentals of vibration;
- A description of the local noise guidelines and standards;
- An evaluation of the current noise environment;
- An analysis of the potential short-term construction-related noise impacts from the proposed project; and,
- An analysis of long-term operations-related noise impacts from the proposed project.

1.2 Site Location and Study Area

The project site is located in the northern portion of the City of Lake of Lake Elsinore (City) on the southwest side of the intersection of Riverside Drive and Collier Avenue. The approximately 2.78-acre project site is located on a vacant parcel that is bounded by commercial uses to the northwest and northeast, vacant land to the east, Riverside Drive and vacant land to the southeast, and a water detention basin and vacant land to the southwest. The project location is shown in Figure 1.

Sensitive Receptors in Project Vicinity

The nearest offsite sensitive receptors to the project site consist of workers at the commercial uses located as near as 60 feet northwest of the project site. There are also single-family homes located as near as 1,400 feet southwest of the project site. The nearest school to the project site is Temescal Canyon High School that is located as near as 0.5 mile northwest of the project site.

1.3 Proposed Project Description

The proposed project would consist of the development of a 25,682-square foot building which will include space for a boat showroom, offices, boat servicing and manufacturing uses. The proposed project would also include an overflow boat service parking area, outdoor storage areas, and a 61-space parking lot. The proposed site plan is shown in Figure 2.

1.4 Standard Noise Regulatory Conditions

The proposed project will be required to comply with the following regulatory conditions from the City of Lake Elsinore and State of California.

<u>Section 17.176.080(A) – Maximum Permissible Sound Levels</u>

Section 17.176.060(A) of the Municipal Code limits onsite noise sources to 65 dBA between 7:00 a.m. and 10:00 p.m. and 60 dBA between 10:00 p.m. and 7:00 a.m. at the nearby commercial properties located as near as 60 feet northwest of the project site. Compliance with this regulation will reduce the operations-related noise impacts to the nearby receptors.

Section 17.176.080(F) – Construction Noise Limits

Section 17.176.080(F)(1) of the City's Municipal Code restricts construction activities from occurring between the weekday hours of 7:00 p.m. and 7:00 a.m., or at any time on weekends or holidays. Section 17.176.080(F)(2) of the City's Municipal Code limits construction noise that occurs at the nearby business uses to 85 dBA from mobile equipment and 75 dBA from stationary equipment and at the nearby single-family homes to 75 dBA for mobile equipment and 60 dBA for stationary equipment. Compliance with this regulation will reduce the construction-related noise impacts to the nearby receptors.

Section 17.176.080(G) – Vibration Limits

Section 17.176.080(G) of the City's Municipal Code restricts the operation of any device that creates a vibration which is above the vibration threshold of any individual at or beyond the property boundary of the source. Compliance with this regulation will reduce the construction-related vibration impacts to the nearby sensitive receptors.

State of California Rules

The following lists the State of California rules that are applicable to all non-residential projects in the State.

California Vehicle Code Section 27200-27207 – On-Road Vehicle Noise

California Vehicle Code Section 27200-27207 provides noise limits for vehicles operated in California. For vehicles over 10,000 pounds noise is limited to 88 dB for vehicles manufactured before 1973, 86 dB for vehicles manufactured before 1975, 83 dB for vehicles manufactured before 1988, and 80 dB for vehicles manufactured after 1987. All measurements are based at 50 feet from the vehicle.

California Vehicle Section 38365-38380 – Off-Road Vehicle Noise

California Vehicle Code Section 38365-38380 provides noise limits for off-highway motor vehicles operated in California. 92 dBA for vehicles manufactured before 1973, 88 dBA for vehicles manufactured before 1975, 86 dBA for vehicles manufactured before 1986, and 82 dBA for vehicles manufactured after December 31, 1985. All measurements are based at 50 feet from the vehicle.

1.5 Summary of Analysis Results

The following is a summary of the proposed project's impacts with regard to the State CEQA Guidelines noise checklist questions.

Expose persons to noise levels in excess of standards?

Potentially significant impact. Implementation of Mitigation Measures 1 would reduce the impact to less than significant levels.

Expose persons to excessive groundborne vibration?

Less than significant impact.

Result in a substantial permanent increase in ambient noise levels above existing levels without the proposed project?

Less than significant impact.

Result in a substantial temporary increase in ambient noise levels above existing levels without the proposed project?

Potentially significant impact. Implementation of Mitigation Measure 1 would reduce the impact to less than significant levels.

Expose persons to excessive noise levels from aircraft?

Less than significant impact.

1.6 Mitigation Measures Required for the Proposed Project

This analysis found that through adherence to the noise and vibration regulations detailed in Section 1.4 above and through implementation of the following mitigation all noise and vibration impacts would be reduced to less than significant levels.

> **Mitigation Measure 1:**
> The project applicant shall require any construction contractor that needs to use stationary construction equipment within 100 feet of the project's northeast and northwest property lines to place a temporary sound barrier between the stationary equipment and nearest sensitive receptors.

SOURCE: Google Earth.

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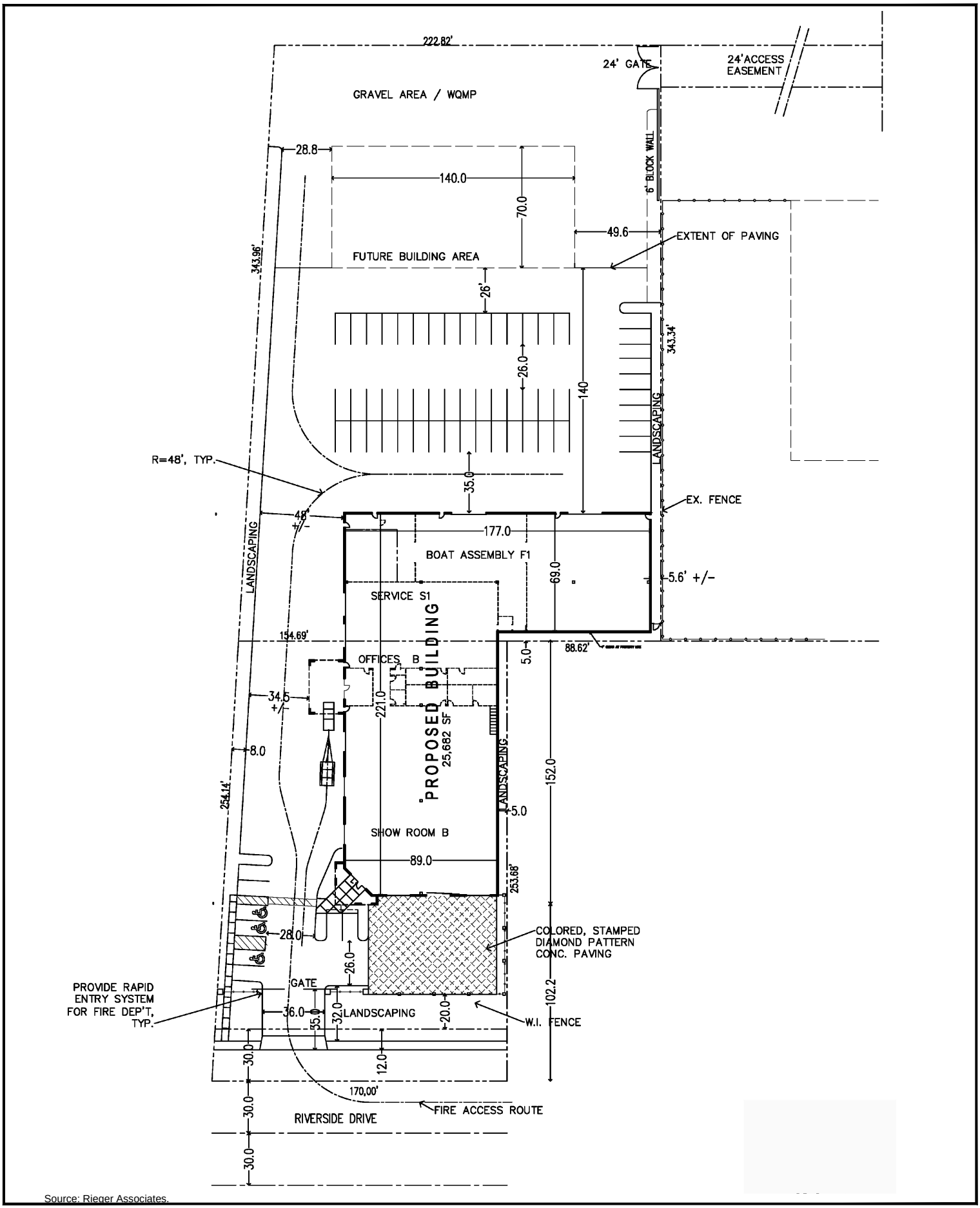
Figure 1
Project Location Map



Source: Rieger Associates.

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Figure 2
Proposed Site Plan

2.0 NOISE FUNDAMENTALS

Noise is defined as unwanted sound. Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm or when it has adverse effects on health. Sound is produced by the vibration of sound pressure waves in the air. Sound pressure levels are used to measure the intensity of sound and are described in terms of decibels. The decibel (dB) is a logarithmic unit which expresses the ratio of the sound pressure level being measured to a standard reference level. A-weighted decibels (dBA) approximate the subjective response of the human ear to a broad frequency noise source by discriminating against very low and very high frequencies of the audible spectrum. They are adjusted to reflect only those frequencies which are audible to the human ear.

2.1 Noise Descriptors

Noise Equivalent sound levels are not measured directly, but are calculated from sound pressure levels typically measured in A-weighted decibels (dBA). The equivalent sound level (Leq) represents a steady state sound level containing the same total energy as a time varying signal over a given sample period. The peak traffic hour Leq is the noise metric used by California Department of Transportation (Caltrans) for all traffic noise impact analyses.

The Day-Night Average Level (Ldn) is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. The time of day corrections require the addition of ten decibels to sound levels at night between 10 p.m. and 7 a.m. While the Community Noise Equivalent Level (CNEL) is similar to the Ldn, except that it has another addition of 4.77 decibels to sound levels during the evening hours between 7 p.m. and 10 p.m. These additions are made to the sound levels at these time periods because during the evening and nighttime hours, when compared to daytime hours, there is a decrease in the ambient noise levels, which creates an increased sensitivity to sounds. For this reason the sound appears louder in the evening and nighttime hours and is weighted accordingly. The City of Lake Elsinore relies on the Ldn noise standard to assess transportation-related impacts on noise sensitive land uses.

2.2 Tone Noise

A pure tone noise is a noise produced at a single frequency and laboratory tests have shown that humans are more perceptible to changes in noise levels of a pure tone. For a noise source to contain a "pure tone," there must be a significantly higher A-weighted sound energy in a given frequency band than in the neighboring bands, thereby causing the noise source to "stand out" against other noise sources. A pure tone occurs if the sound pressure level in the one-third octave band with the tone exceeds the average of the sound pressure levels of the two contiguous one-third octave bands by:

- 5 dB for center frequencies of 500 hertz (Hz) and above
- 8 dB for center frequencies between 160 and 400 Hz
- 15 dB for center frequencies of 125 Hz or less

2.3 Noise Propagation

From the noise source to the receiver, noise changes both in level and frequency spectrum. The most obvious is the decrease in noise as the distance from the source increases. The manner in which noise reduces with distance depends on whether the source is a point or line source as well as ground absorption, atmospheric effects and refraction, and shielding by natural and manmade features. Sound from point sources, such as air conditioning condensers, radiate uniformly outward as it travels away

from the source in a spherical pattern. The noise drop-off rate associated with this geometric spreading is 6 dBA per each doubling of the distance (dBA/DD). Transportation noise sources such as roadways are typically analyzed as line sources, since at any given moment the receiver may be impacted by noise from multiple vehicles at various locations along the roadway. Because of the geometry of a line source, the noise drop-off rate associated with the geometric spreading of a line source is 3 dBA/DD.

2.4 Ground Absorption

The sound drop-off rate is highly dependent on the conditions of the land between the noise source and receiver. To account for this ground-effect attenuation (absorption), two types of site conditions are commonly used in traffic noise models, soft-site and hard-site conditions. Soft-site conditions account for the sound propagation loss over natural surfaces such as normal earth and ground vegetation. For point sources, a drop-off rate of 7.5 dBA/DD is typically observed over soft ground with landscaping, as compared with a 6.0 dBA/DD drop-off rate over hard ground such as asphalt, concrete, stone and very hard packed earth. For line sources a 4.5 dBA/DD is typically observed for soft-site conditions compared to the 3.0 dBA/DD drop-off rate for hard-site conditions. Caltrans research has shown that the use of soft-site conditions is more appropriate for the application of the Federal Highway Administration (FHWA) traffic noise prediction model used in this analysis.

3.0 GROUND-BORNE VIBRATION FUNDAMENTALS

Ground-borne vibrations consist of rapidly fluctuating motions within the ground that have an average motion of zero. The effects of ground-borne vibrations typically only cause a nuisance to people, but at extreme vibration levels damage to buildings may occur. Although ground-borne vibration can be felt outdoors, it is typically only an annoyance to people indoors where the associated effects of the shaking of a building can be notable. Ground-borne noise is an effect of ground-borne vibration and only exists indoors, since it is produced from noise radiated from the motion of the walls and floors of a room and may also consist of the rattling of windows or dishes on shelves.

3.1 Vibration Descriptors

There are several different methods that are used to quantify vibration amplitude such as the maximum instantaneous peak in the vibrations velocity, which is known as the peak particle velocity (PPV) or the root mean square (rms) amplitude of the vibration velocity. Due to the typically small amplitudes of vibrations, vibration velocity is often expressed in decibels and is denoted as (L_v) and is based on the rms velocity amplitude. A commonly used abbreviation is "VdB", which in this text, is when L_v is based on the reference quantity of 1 micro inch per second.

3.2 Vibration Perception

Typically, developed areas are continuously affected by vibration velocities of 50 VdB or lower. These continuous vibrations are not noticeable to humans whose threshold of perception is around 65 VdB. Off-site sources that may produce perceptible vibrations are usually caused by construction equipment, steel-wheeled trains, and traffic on rough roads, while smooth roads rarely produce perceptible ground-borne noise or vibration.

3.3 Vibration Propagation

The propagation of ground-borne vibration is not as simple to model as airborne noise. This is due to the fact that noise in the air travels through a relatively uniform median, while ground-borne vibrations travel through the earth which may contain significant geological differences. There are three main types of vibration propagation; surface, compression, and shear waves. Surface waves, or Rayleigh waves, travel along the ground's surface. These waves carry most of their energy along an expanding circular wave front, similar to ripples produced by throwing a rock into a pool of water. P-waves, or compression waves, are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal (i.e., in a "push-pull" fashion). P-waves are analogous to airborne sound waves. S-waves, or shear waves, are also body waves that carry energy along an expanding spherical wave front. However, unlike P-waves, the particle motion is transverse or "side-to-side and perpendicular to the direction of propagation."

As vibration waves propagate from a source, the vibration energy decreases in a logarithmic nature and the vibration levels typically decrease by 6 VdB per doubling of the distance from the vibration source. As stated above, this drop-off rate can vary greatly depending on the soil but has been shown to be effective enough for screening purposes, in order to identify potential vibration impacts that may need to be studied through actual field tests.

4.0 REGULATORY SETTING

The project site is located in the City of Lake Elsinore. Noise regulations are addressed through the efforts of various federal, state, and local government agencies. The agencies responsible for regulating noise are discussed below.

4.1 Federal Regulations

The adverse impact of noise was officially recognized by the federal government in the Noise Control Act of 1972, which serves three purposes:

- Promulgating noise emission standards for interstate commerce
- Assisting state and local abatement efforts
- Promoting noise education and research

The Federal Office of Noise Abatement and Control (ONAC) was initially tasked with implementing the Noise Control Act. However, the ONAC has since been eliminated, leaving the development of federal noise policies and programs to other federal agencies and interagency committees. For example, the Occupational Safety and Health Administration (OSHA) agency prohibits exposure of workers to excessive sound levels. The Department of Transportation (DOT) assumed a significant role in noise control through its various operating agencies. The Federal Aviation Administration (FAA) regulates noise of aircraft and airports. Surface transportation system noise is regulated by a host of agencies, including the Federal Transit Administration (FTA). Transit noise is regulated by the federal Urban Mass Transit Administration (UMTA), while freeways that are part of the interstate highway system are regulated by the Federal Highway Administration (FHWA). Finally, the federal government actively advocates that local jurisdictions use their land use regulatory authority to arrange new development in such a way that "noise sensitive" uses are either prohibited from being sited adjacent to a highway or, alternately that the developments are planned and constructed in such a manner that potential noise impacts are minimized.

Although the proposed project is not under the jurisdiction of the FTA, the FTA is the only agency that has defined what constitutes a significant noise impact from implementing a project. The FTA standards are based on extensive studies by the FTA and other governmental agencies on the human effects and reaction to noise and a summary of the FTA findings are provided below in Table A.

Table A – FTA Project Effects on Cumulative Noise Exposure

Existing Noise Exposure (dBA Leq or Ldn)	Allowable Noise Impact Exposure dBA Leq or Ldn		
	Project Only	Combined	Noise Exposure Increase
45	51	52	+7
50	53	55	+5
55	55	58	+3
60	57	62	+2
65	60	66	+1
70	64	71	+1
75	65	75	0

Source: Federal Transit Administration, 2006.

Since the federal government has preempted the setting of standards for noise levels that can be emitted by the transportation sources, the City is restricted to regulating the noise generated by the transportation system through nuisance abatement ordinances and land use planning.

4.2 State Regulations

Noise Standards

California Department of Health Services Office of Noise Control

Established in 1973, the California Department of Health Services Office of Noise Control (ONC) was instrumental in developing regularity tools to control and abate noise for use by local agencies. One significant model is the "Land Use Compatibility for Community Noise Environments Matrix," which allows the local jurisdiction to clearly delineate compatibility of sensitive uses with various incremental levels of noise.

California Noise Insulation Standards

Title 24, Chapter 1, Article 4 of the California Administrative Code (California Noise Insulation Standards) requires noise insulation in new hotels, motels, apartment houses, and dwellings (other than single-family detached housing) that provides an annual average noise level of no more than 45 dBA CNEL. When such structures are located within a 60-dBA CNEL (or greater) noise contour, an acoustical analysis is required to ensure that interior levels do not exceed the 45-dBA CNEL annual threshold. In addition, Title 21, Chapter 6, Article 1 of the California Administrative Code requires that all habitable rooms, hospitals, convalescent homes, and places of worship shall have an interior CNEL of 45 dB or less due to aircraft noise.

Government Code Section 65302

Government Code Section 65302 mandates that the legislative body of each county and city in California adopt a noise element as part of its comprehensive general plan. The local noise element must recognize the land use compatibility guidelines published by the State Department of Health Services. The guidelines rank noise land use compatibility in terms of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable.

Vibration Standards

Title 14 of the California Administrative Code Section 15000 requires that all state and local agencies implement the California Environmental Quality Act (CEQA) Guidelines, which requires the analysis of exposure of persons to excessive groundborne vibration. However, no statute has been adopted by the state that quantifies the level at which excessive groundborne vibration occurs.

Caltrans issued the *Transportation- and Construction-Induced Vibration Guidance Manual* in 2004. The manual provides practical guidance to Caltrans engineers, planners, and consultants who must address vibration issues associated with the construction, operation, and maintenance of Caltrans projects. However, this manual is also used as a reference point by many lead agencies and CEQA practitioners throughout California, as it provides numeric thresholds for vibration impacts. Thresholds are established for continuous (construction-related) and transient (transportation-related) sources of vibration, which found that the human response becomes distinctly perceptible at 0.25 inch per second PPV for transient sources and 0.04 inch per second PPV for continuous sources.

4.3 Local Regulations

The City of Lake Elsinore General Plan and Municipal Code establishes the following applicable policies related to noise and vibration.

City of Lake Elsinore General Plan

The following applicable goals and policies to the proposed project are from the Noise Element of the General Plan.

Goal 7 Maintain an environment for all City residents and visitors free of unhealthy, obtrusive, or otherwise excessive noise.

Policies:

7.1 Apply the noise standards set forth in the Lake Elsinore Noise and Land Use Compatibility Matrix (see Table B) and Interior and Exterior Noise Standards (see Table C) when considering all new development and redevelopment proposed within the City.

Table B – City of Lake Elsinore Noise and Land Use Compatibility Matrix

		Day-Night Noise Level (L_{dn})						
Land Use Categories	**Uses**	**<55**	**55-60**	**60-65**	**65-70**	**70-75**	**75-80**	**>80**
Residential	Single-Family, Duplex, Multiple-Family	A	A	B	B	C	D	D
	Mobile Homes	A	A	B	C	C	D	D
Commercial Regional District	Hotel, Motel, Transient Lodging	A	A	B	B	C	C	D
Commercial Regional Village, District Special	Commercial, Retail, Bank, Restaurant, Movie Theatre	A	A	A	A	B	B	C
Commercial Industrial Institutional	Office Building, Research and Development, Professional Offices, City Office Building	A	A	A	B	B	C	D
Commercial Regional Institutional Civic Center	Amphitheatre, Concert Hall, Auditorium, Meeting Hall	B	B	C	C	D	D	D
Commercial Recreation	Children's Amusement Park, Miniature Golf Course, Go-cart Track, Equestrian Center, Sports Club	A	A	A	B	B	D	D
Commercial General, Special Industrial Institutional	Automobile Service Station, Auto Dealership, Manufacturing, Warehousing, Wholesale, Utilities	A	A	A	A	B	B	B
Institutional General	Hospital, Church, Library, Schools, Classroom	A	A	B	C	C	D	D
Open Space	Parks	A	A	A	B	C	D	D
	Golf Course, Cemeteries, Nature Centers, Wildlife Reserves, Wildlife Habitat	A	A	A	A	B	C	C

Land Use Categories	Uses	Day-Night Noise Level (L_{dn})						
		<55	55-60	60-65	65-70	70-75	75-80	>80
Agriculture	Agriculture	A	A	A	A	A	A	A

Interpretation:

Zone A: Clearly Compatible. Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.

Zone B: Normally Compatible. New construction or development should be undertaken only after detailed analysis of the noise reduction requirements are made and needed noise insulation features in the design are determined. Conventional construction, with closed windows and fresh air supply systems or air conditioning, will normally suffice.

Zone C: Normally Incompatible. New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of noise reduction requirements must be made and needed noise insulation features included in the design.

Zone D: Clearly Incompatible. New construction or development should generally not be undertaken.

Source: City of Lake Elsinore General Plan, 2011.

Table C – City of Lake Elsinore Interior and Exterior Noise Standards

Land Use Categories	Uses	Energy Average L_{dn}	
		Interior[1]	Exterior[2]
Residential	Single-Family, Duplex, Multiple-Family	45[3,5]	60
	Mobile Homes	--	60[4]
Commercial, Institutional	Hotel, Motel, Transient Lodging	45[5]	--
	Hospital, School's Classroom	45	--
	Church, Library	45	--

Interpretation:
[1] Indoor environment excluding: bathrooms, toilets, closets, corridors.
[2] Outdoor environment limited to: private yard of single-family, multi-family private patio or balcony which is served by a means of exit from inside, Mobile Home Park.
[3] Noise level requirement with closed windows. Mechanical ventilation system or other means of natural ventilation shall be provided as of Chapter 12, Section 1205 of UBC.
[4] Exterior noise level should be such that interior noise level will not exceed 45 CNEL.
[5] As per California Administrative Code, Title 24, Part 6, Division T25, Chapter 1, Subchapter 1, Article 4, Section T25-28.
Source: City of Lake Elsinore General Plan, 2011.

City of Lake Elsinore Municipal Code

The Lake Elsinore Municipal Code establishes the following applicable standards related to noise.

17.176.060 Exterior Noise Limits.

A. Maximum Permissible Sound Levels by Receiving Land Use.

1. The noise standards for the various categories of land use identified by the Noise Control Office(r) as presented in Table 1 (see Table D) shall, unless otherwise specifically indicated, apply to all such property within a designated zone.

2. No person shall operate, or cause to be operated, any source of sound at any location within the incorporated City or allow the creation of any noise on property owned, leased, occupied, or

otherwise controlled by such person, which causes the noise level when measured on any other property, either incorporated or unincorporated to exceed:

a. The noise standard for that land use as specified in Table 1 for a cumulative period of more than 30 minutes in any hour; or

b. The noise standard plus five dB for a cumulative period of more than 15 minutes in any hour; or

c. The noise standard plus 10 dB for a cumulative period of more than five minutes in any hour; or

d. The noise standard plus 15 dB for a cumulative period of more than one minute in any hour; or

e. The noise standard plus 20 dB or the maximum measured ambient level, for any period of time.

3. If the measured ambient level differs from that permissible within any of the last four noise limit categories above, the allowable noise exposure standard shall be adjusted in five dB increments in each category as appropriate to encompass or reflect said ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under this category shall be increased to reflect the maximum ambient noise level.

4. If the measurement location is on a boundary between two different zones, the noise level limit applicable to the lower noise zone plus six dB shall apply.

Table D – 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.	40
	7:00 a.m. – 10:00 p.m.	50
Multiple Dwelling Residential	10:00 p.m. – 7:00 a.m.	45
	7:00 a.m. – 10:00 p.m.	50
Public Space		
Limited Commercial and Office	10:00 p.m. – 7:00 a.m.	55
	7:00 a.m. – 10:00 p.m.	60
General Commercial	10:00 p.m. – 7:00 a.m.	60
	7:00 a.m. – 10:00 p.m.	65
Light Industrial	Anytime	70
Heavy Industrial	Anytime	75

Source: City of Lake Elsinore Municipal Code Section 17.176.060.

17.176.080 Prohibited acts.

No person shall unnecessarily make, continue, or cause to be made or continued, any noise disturbance. The following acts, and the causing or permitting thereof, are declared to be in violation of this chapter:

B. Using or operating for any purpose any loudspeaker, loudspeaker system, or similar device between the hours of 10:00 p.m. and 7:00 a.m., such that the sound therefrom creates a noise disturbance across a residential real property line, or at any time violates the provisions of LEMC 17.176.060(A), except for any noncommercial public speaking, public assembly or other activity for which a variance has been issued by the City.

E. Loading, unloading, opening, closing or other handling of boxes, crates, containers, building materials, garbage cans, or similar objects between the hours of 10:00 p.m. and 7:00 a.m. in such a manner as to cause a noise disturbance across a residential real property line or at any time to violate the provisions of LEMC

F. Construction/Demolition

1. Operating or causing the operation of any tools or equipment used in construction, drilling, repair, alteration, or demolition work between weekday hours of 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, except for emergency work of public service utilities or by variance issued by the City.

2. Noise Restrictions at Affected Properties. Where technically and economically feasible, construction activities shall be conducted in such a manner the maximum noise levels at affected properties will not exceed those listed in the following schedule: (see Table E for Residential Properties)

   AT BUSINESS PROPERTIES:

   Mobile Equipment

   Maximum noise levels for nonscheduled, intermittent, short-term operation of mobile equipment:

   Daily, including Sundays and Legal Holidays, all hours: maximum of 85 dBA.

   Stationary Equipment

   Maximum noise levels for repetitive scheduled and relatively long-term operation of stationary equipment:

   Daily, including Sundays and Legal Holidays, all hours: maximum of 75 dBA.

Table E – City of Lake Elsinore Construction Noise Standards at Residential Properties

Time Interval	Type I Areas Single-Family Residential	Type II Areas Multifamily Residential	Type III Areas Semi-Residential/ Commercial
Mobile Equipment			
Daily, except Sundays and Legal Holidays 7:00 a.m. to 7:00 p.m.	75 dBA	80 dBA	85 dBA
Daily, 7:00 p.m. to 7:00 a.m. and all day Sunday and Legal Holidays	60 dBA	65 dBA	70 dBA
Stationary Equipment			
Daily, except Sundays and Legal Holidays 7:00 a.m. to 7:00 p.m.	60 dBA	65 dBA	70 dBA

Time Interval	Type I Areas Single-Family Residential	Type II Areas Multifamily Residential	Type III Areas Semi-Residential/ Commercial
Daily, 7:00 p.m. to 7:00 a.m. and all day Sunday and Legal Holidays	50 dBA	55 dBA	60 dBA

Source: City of Lake Elsinore Municipal Code Section 17.176.080.

3. All mobile or stationary internal combustion engine powered equipment or machinery shall be equipped with suitable exhaust and air intake silencers in proper working order.

G. Operating or permitting the operation of any device that creates a vibration which is above the vibration perception threshold of any individual at or beyond the property boundary of the source if on private property or at 150 feet (46 meters) from the source if on public space or public right-of-way.

5.0 EXISTING NOISE CONDITIONS

To determine the existing noise level environment, noise measurements have been taken in the vicinity of the project site. The field survey noted that noise within the proposed project area is generally characterized by vehicular traffic on Riverside Drive. The following describes the measurement procedures, measurement locations, noise measurement results, and the modeling of the existing noise environment.

5.1 Noise Measurement Equipment

The short-term noise measurements were taken using a Larson-Davis Model 831 Type 1 precision sound level meter programmed in "slow" mode to record noise levels in "A" weighted form as well as the frequency spectrum of the noise broken down into 1/3 octaves. The sound level meter and microphone were mounted on a tripod five feet above the ground and were equipped with a windscreen during all measurements. The sound level meter was calibrated before and after the monitoring using a Larson-Davis calibrator, Model CAL 200. The accuracy of the calibrator is maintained through a program established through the manufacturer and is traceable to the National Bureau of Standards. The unit meets the requirements of ANSI Standard S1.4-1984 and IEC Standard 942: 1988 for Class 1 equipment. All noise level measurement equipment meets American National Standards Institute (ANSI) specifications for sound level meters (S1.4-1983 identified in Chapter 19.68.020.AA).

Noise Measurement Location

The noise monitoring locations were selected in order to obtain noise measurements of the current noise levels in the project study area and to provide a baseline for any potential noise impacts that may be created by development of the proposed project. The noise measurement sites were selected to provide a representative sampling of the noise levels created by nearby noise sources. Descriptions of the noise monitoring sites are provided below in Table F. Appendix A includes a photo index of the study area and noise level measurement locations.

Noise Measurement Timing and Climate

The noise measurements were recorded between 11:34 a.m. and 12:01 p.m. on Tuesday, March 28, 2017. During the noise measurements the sky was clear, the temperature was 72 degrees Fahrenheit, the humidity was 20 percent, barometric pressure was 30 inches of mercury, and the wind was blowing around 12 miles per hour.

All traffic noise measurement durations were measured according to the standards stated in Section N-3320 of Caltrans Technical Noise Supplement (TeNS), which specifies that the measurements be a duration of at least 10 minutes and shall be continued past 10 minutes until the fluctuations in the displayed L_{eq} is less than 0.5 dBA.

5.2 Noise Measurement Results

The results of the noise level measurements are presented in Table F and the noise monitoring data printouts are included in Appendix B. Table F shows the existing noise levels in the project vicinity ranges between 57.0 dBA L_{eq} and 62.3 dBA L_{eq}.

Table F – Existing (Ambient) Noise Level Measurements

Site No.	Description	Primary Noise Source	Start Time of Measurement	Noise Level (dBA L_{eq}/L_{max})
1	Located east of the project site, approximately 110 feet northwest of Riverside Drive center line, 350 feet southwest of Collier Avenue center line.	Riverside Drive	11:34 a.m.	62.3/86.0
2	Located at nearest home approximately 1,400 feet west of the project site.	Riverside Drive	11:51 a.m.	57.0/95.5

Source: Noise measurements taken with a Larson Davis Model 831 Type 1 precision sound level meter on Tuesday, March 28, 2017.

6.0 MODELING PARAMETERS AND ASSUMPTIONS

6.1 Construction Noise

The noise impacts from construction of the proposed project have been analyzed through use of the FHWA's Roadway Construction Noise Model (RCNM). The FHWA compiled noise measurement data regarding the noise generating characteristics of several different types of construction equipment used during the Central Artery/Tunnel project in Boston. Table G below provides a list of the construction equipment anticipated to be used for each phase of construction as detailed in *Air Quality and Greenhouse Gas Emissions Impact Analysis Tige Watersports Project*, prepared by Vista Environmental, June 9, 2017.

Table G – Construction Equipment Noise Emissions and Usage Factors

Equipment Description	Number of Equipment	Acoustical Use Factor[1] (percent)	Spec 721.560 Lmax at 50 feet[2] (dBA, slow[3])	Actual Measured Lmax at 50 feet[4] (dBA, slow[3])
Site Preparation				
Grader	1	40	85	83
Rubber Tired Dozer	1	40	85	82
Tractor, Loader or Backhoe[5]	1	40	84	N/A
Grading				
Excavator	1	40	85	81
Grader	1	40	85	83
Rubber Tired Dozer	1	40	85	82
Tractor, Loader or Backhoe[5]	3	40	84	N/A
Building Construction				
Crane	1	16	85	81
Forklift (Gradall)	3	40	85	83
Generator	1	50	82	81
Welder	1	40	73	74
Tractor, Loader or Backhoe[5]	3	40	84	N/A
Paving				
Paver	2	50	85	77
Paving Equipment	2	50	85	77
Roller	2	20	85	80
Architectural Coating				
Air Compressor	1	40	80	78

Notes:
[1] Acoustical use factor is the percentage of time each piece of equipment is operational during a typical workday.
[2] Spec 721.560 is the equipment noise level utilized by the RCNM program.
[3] The "slow" response averages sound levels over 1-second increments. A "fast" response averages sound levels over 0.125-second increments.
[4] Actual Measured is the average noise level measured of each piece of equipment during the Central Artery/Tunnel project in Boston, Massachusetts primarily during the 1990s.
[5] For the tractor/loader/backhoe, the tractor noise level was utilized, since it is the loudest of the three types of equipment.
Source: Federal Highway Administration, 2006 and CalEEMod default equipment mix.

Table G also shows the associated measured noise emissions for each piece of equipment from the RCNM model and measured percentage of typical equipment use per day. Construction noise impacts to the nearby sensitive receptors have been calculated according to the equipment noise levels and usage factors listed in Table G and through use of the RCNM. For each phase of construction, the nearest piece

of equipment was placed at the shortest distance of the proposed activity to the nearest sensitive receptor and each subsequent piece of equipment was placed an additional 50 feet away

6.2 Vibration

Construction activity can result in varying degrees of ground vibration, depending on the equipment used on the site. Operation of construction equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Buildings in the vicinity of the construction site respond to these vibrations with varying results ranging from no perceptible effects at the low levels to slight damage at the highest levels. Table H gives approximate vibration levels for particular construction activities. The data in Table H provides a reasonable estimate for a wide range of soil conditions.

Table H – Vibration Source Levels for Construction Equipment

Equipment		Peak Particle Velocity (inches/second)	Approximate Vibration Level (L_v)at 25 feet
Pile driver (impact)	Upper range	1.518	112
	typical	0.644	104
Pile driver (sonic)	Upper range	0.734	105
	typical	0.170	93
Clam shovel drop (slurry wall)		0.202	94
Vibratory Roller		0.210	94
Hoe Ram		0.089	87
Large bulldozer		0.089	87
Caisson drill		0.089	87
Loaded trucks		0.076	86
Jackhammer		0.035	79
Small bulldozer		0.003	58

Source: Federal Transit Administration, May 2006.

The construction-related and operational vibration impacts have been calculated through the vibration levels shown above in Table H and through typical vibration propagation rates. The equipment assumptions were based on the equipment lists provided above in Table G.

7.0 IMPACT ANALYSIS

7.1 CEQA Thresholds of Significance

Consistent with the California Environmental Quality Act (CEQA) and the State CEQA Guidelines, a significant impact related to noise would occur if a proposed project is determined to result in:

- Exposure of persons to or generation of noise levels in excess of standards established in the local General Plan or noise ordinance, or applicable standards of other agencies;
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
- A substantial permanent increase in ambient noise levels in the project vicinity above existing levels without the proposed project;
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above noise levels existing without the proposed project; or
- Exposure of persons residing or working in the project area to excessive noise levels from aircraft.

7.2 Generation of Noise Levels in Excess of Standards

The proposed project would not expose persons to or generate noise levels in excess of standards established in the General Plan or Noise Ordinance or applicable standards of other agencies. The following section calculates the potential noise emissions associated with the construction and operations of the proposed project and compares the noise levels to the City standards.

Construction-Related Noise

The construction activities for the proposed project are anticipated to include site preparation and grading of the 2.78-acre project site, building construction of the 25,682-square foot showroom, boat servicing, and manufacturing facility, paving of the onsite roads and parking areas, and application of architectural coatings. Noise impacts from construction activities associated with the proposed project would be a function of the noise generated by construction equipment, equipment location, sensitivity of nearby land uses, and the timing and duration of the construction activities. The nearest sensitive receptors to the project site are offsite workers at the commercial uses located as near as 60 feet northwest of the project site. There are also single-family homes located as near as 1,400 feet southwest of the project site.

Section 17.176.080(F)(1) of the City's Municipal Code restricts construction activities from occurring between the weekday hours of 7:00 p.m. and 7:00 a.m., or at any time on weekends or holidays. Section 17.176.080(F)(2) of the City's Municipal Code limits construction noise that occurs at the nearby business uses to 85 dBA from mobile equipment and 75 dBA from stationary equipment and at the nearby single-family homes to 75 dBA for mobile equipment and 60 dBA for stationary equipment.

Construction noise impacts to the nearby sensitive receptors have been calculated through use of the RCNM and the parameters and assumptions detailed in Section 6.1 of this report including Table G – Construction Equipment Noise Emissions and Usage Factors. The results are shown below in Table I and the RCNM printouts are provided in Appendix C.

Table I – Worst Case Construction Noise Levels at Nearest Receptors

	Off-Site Workers to Northwest[1]		Single-Family Homes to Southwest[2]	
Construction Phase	**Distance (feet)**	**Noise Level (dBA Leq)[3]**	**Distance (feet)**	**Noise Level (dBA Leq)[3]**
Site Preparation	60	80	1,400	55
Grading	60	78	1,400	55
Building Construction	330	67	1,450	56
Paving	180	68	1,400	54
Painting	330	57	1,450	44
City's Mobile Equipment Threshold		**85**		**75**
City's Stationary Equipment Threshold		**75**		**60**

Notes:
[1] Off-Site Worker noise threshold from Section17.176.080(F)(2) of the Municipal Code for Business Properties.
[1] City construction noise threshold from Section 17.176.080(F)(2) of the Municipal Code for Type I Areas.
Source: RCNM, Federal Highway Administration, 2006

Table I shows that the greatest noise impacts at the nearby off-site workers would occur during the site preparation phase of construction, with a noise level as high as 80 dBA, which is within the City's mobile equipment threshold for business properties of 85 dBA. However, the site preparation and grading phases have the potential to exceed the City's stationary equipment threshold of 75 dBA at the nearest off-site workers. This would be considered a significant impact.

Table I also shows that the greatest noise impacts at the nearest home would occur during building construction, with a noise level as high as 56 dBA, which is within both the City's mobile equipment threshold of 75 dBA and stationary equipment threshold of 60 dBA.

Mitigation Measure 1 is provided that would require any stationary construction equipment that is used within 100 feet of the project's northeast and northwest property lines to place a temporary sound barrier between the stationary equipment and nearby sensitive receptors. With implementation of Mitigation Measure 1, construction-related noise impacts would be reduced to within the City noise standards.

Operational-Related Noise

The proposed project would consist of the development of a 25,682-square foot building which will include space for a boat showroom, offices, boat servicing and manufacturing. The operation of the proposed project may generate onsite noise levels that exceed City standards at the existing nearby sensitive receptors. The operational noise impacts to the nearby sensitive receptors and proposed onsite sensitive receptors have been analyzed separately below.

Noise Impacts to Existing Offsite Sensitive Receptors

The operation of the proposed project may create an increase in onsite noise levels from rooftop mechanical equipment, parking lot activities, delivery truck activities, boat sanding activities, and onsite operation of an air compressor and forklift.

Section 17.176.060(A) of the Municipal Code limits onsite noise sources to 65 dBA between 7:00 a.m. and 10:00 p.m. and 60 dBA between 10:00 p.m. and 7:00 a.m. at the nearby commercial properties located as near as 60 feet northwest of the project site. Section 8.06.060(A) also provides residential noise standards, however the nearest residential uses are located 1,400 feet to the southwest and due to the distance, no noise impacts are anticipated to the nearby residential uses.

In order to determine the noise impacts from rooftop mechanical equipment, parking lot activities, delivery truck activities, boat sanding activities, and onsite operation of an air compressor and forklift, reference noise measurements were taken of each noise source and are shown below in Table J. Table J also shows the anticipated noise level from each source at the nearest homes and commercial uses. The operational reference noise measurements are shown in Appendix D.

Table J – Operational Noise Levels at the Nearest Receptors

	Reference Noise Measurements		Noise Levels at Nearest Commercial (dBA Leq)	
Noise Source	**Distance -Receptor to Source (feet)**	**Noise Level (dBA L_{eq})**	**Distance - Receptor to Source (feet)**	**Noise Level (dBA L_{eq})**
Rooftop Equipment	10	66.6	110	46
Parking Lot	5	60.7	110	34
Truck Delivery	30	54.8	130	42
Boat Sanding	15	59.4	130	41
Air Compressor	20	69.5	130	53
Forklift	10	74.4	130	52
			Combined Noise Levels	**56**
			City Noise Standards (Day/Night)	**65/60**
			Exceed City Standards?	**No**

Source: Noise calculation methodology from Caltrans, 2009.

Table J shows that the combined noise level at the nearest commercial uses would be 56 dBA Leq, which are based on the worst-case scenario of the simultaneous occurrence of all noise producing activities from operation of the proposed project. Table J shows that the combined noise levels would be within the City noise standards for General Commercial land uses. Impacts would be less than significant.

Therefore, with implementation of Mitigation Measure 1, the proposed project would not expose persons to noise levels in excess of standards established in the local general plan or noise ordinance.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Mitigation Measure 1:

The project applicant shall require any construction contractor that needs to use stationary construction equipment within 100 feet of the project's northeast and northwest property lines to place a temporary sound barrier between the stationary equipment and nearest sensitive receptors.

Level of Significance After Mitigation

Less than significant impact.

7.3 Generation of Excessive Groundborne Vibration

The proposed project would not expose persons to or generation of excessive groundborne vibration or groundborne noise levels. The following section analyzes the potential vibration impacts associated with the construction and operations of the proposed project.

Construction-Related Vibration Impacts

The construction activities for the proposed project are anticipated to include site preparation and grading of the 2.78-acre project site, building construction of the 25,682-square foot showroom, boat servicing, and manufacturing facility, paving of the onsite roads and parking areas, and application of architectural coatings. The nearest off-site receptors to the project site are the commercial uses located as near as 60 feet northwest of the project site. There are also single-family homes located as near as 1,400 feet southwest of the project site.

Section 17.176.080(G) of the City's Municipal Code restricts the operation of any device that creates a vibration which is above the vibration threshold of any individual at or beyond the property boundary of the source. Since the City's Municipal does not provide a quantifiable vibration level, Caltrans guidance that is detailed above in Section 4.2 has been utilized, which defines the threshold of perception from transient sources at 0.25 inch per second PPV.

The primary source of vibration during construction would be from the operation of a bulldozer. From Table H above a large bulldozer would create a vibration level of 0.089 inch per second PPV at 25 feet. Based on typical propagation rates, the vibration level at the nearest offsite receptor (60 feet away) would be 0.03 inch per second PPV. The vibration level at the nearest offsite receptor would be within the 0.25 inch per second PPV threshold detailed above. Impacts would be less than significant.

Operations-Related Vibration Impacts

The proposed project would consist of the development of a 25,682-square foot building that would be utilized for a boat showroom, offices, boat servicing and manufacturing. The proposed project would result in the operation of semi-trucks on the project site, which are a known source of vibration. The nearest off-site receptors to the proposed project are offsite workers located as near as 110 feet from where trucks could potentially operate on the project site.

Section 17.176.080 of the City's Municipal Code limits vibration activities to vibration levels that are not above an individual person's vibration threshold at or beyond the property boundary where the source is located. Since the onsite operation of semi-truck has the potential to create groundborne vibration that may expose persons to excessive vibration levels. In order to provide a conservative analysis, the construction activities have been analyzed based on the standard of being discernable at the nearest offsite workers, which are located as near as 110 feet from where a truck may operate onsite.

Caltrans has done extensive research on vibration level created along freeways and State Routes and their vibration measurements of roads have never exceeded 0.08 inches per second PPV at 15 feet from the center of the nearest lane, with the worst combinations of heavy trucks. Truck activities would occur onsite as near as 110 feet from the nearest off-site worker. Based on typical propagation rates, the vibration level at the nearest offsite worker would by 0.01 inch per second PPV. Caltrans research found that human response to transient sources becomes distinctly perceptible at 0.25 inch per second PPV. Therefore, vibration created from operation of the proposed project would be below the threshold of perception at the nearest offsite worker. Impacts would be less than significant.

Level of Significance

Less than significant impact.

7.4 Permanent Noise Level Increase

The ongoing operation of the proposed project may result in a potential substantial permanent increase in ambient noise levels in the project vicinity above existing levels without the proposed project. Potential

noise impacts associated with the operations of the proposed project would be from project-generated vehicular traffic on the nearby roadways and from onsite activities, which have been analyzed separately below.

Roadway Vehicular Noise

Vehicle noise is a combination of the noise produced by the engine, exhaust and tires. The level of traffic noise depends on three primary factors (1) the volume of traffic, (2) the speed of traffic, and (3) the number of trucks in the flow of traffic.

Neither the General Plan nor the CEQA Guidelines define what constitutes a "substantial permanent increase to ambient noise levels", as such, this impact analysis has utilized guidance from the Federal Transit Administration for a moderate impact that has been detailed above in Table A and shows that the project contribution to the noise environment can range between 0 and 7 dB, which is dependent on the existing roadway noise levels.

The *Tige Watersports Project Traffic Impact Analysis* (Traffic Impact Analysis), prepared by Albert Wilson and Associates, June 2017, found that the proposed project would generate 98 daily vehicle trips. According to the *City of Lake Elsinore General Plan Update Final Recirculated Program Environmental Impact Report*, December 13, 2011, Riverside Drive from Collier Avenue to Baker Street is anticipated to have 59,000 daily vehicle trips in 2030.

In order for project-generated vehicular traffic to increase the noise level by 3dB, the roadway traffic would have to double and for the roadway noise levels to increase by 1.5 dB, the roadway traffic would have to increase by 50 percent. Since the proposed project would only result in a maximum of a 0.2% percent increase in traffic volumes on Riverside Drive, the project-related roadway noise increase is anticipated to be negligible. Impacts would be less than significant.

Onsite Noise Sources

The proposed project would consist of the development of a 25,682-square foot building that would be utilized for a boat showroom, offices, boat servicing and manufacturing. The operation of the proposed project may create an increase in onsite noise levels from noise impacts from rooftop mechanical equipment, parking lot activities, delivery truck activities, boat sanding activities, and onsite operation of an air compressor and forklift.

Section 17.176.060(A) of the Municipal Code limits onsite noise sources to 65 dBA between 7:00 a.m. and 10:00 p.m. and 60 dBA between 10:00 p.m. and 7:00 a.m. at the nearby commercial properties located as near as 60 feet northwest of the project site. Section 8.06.060(A) also provides residential noise standards, however the nearest residential uses are located 1,400 feet to the southwest and due to the distance, no noise impacts are anticipated to the nearby residential uses.

The analysis provided above in Section 7.2 found that the noise levels from onsite noise sources at the nearest offsite workers would be 56 dBA. This was based on the worst-case scenario of the simultaneous occurrence of rooftop equipment, truck loading, parking lot activities, delivery truck activities, boat sanding, and onsite operation of an air compressor and forklift. The analysis in Section 7.2 also found that the proposed project's operational noise level at the nearest offsite workers would be within the City's 65 dBA noise standard for commercial uses. Therefore, the proposed project is not anticipated to cause a substantial permanent increase in ambient noise levels from onsite sources. Impacts would be less than significant.

Level of Significance

Less than significant impact.

7.5 Temporary Noise Level Increase

The proposed project may create a substantial temporary or periodic increase in ambient noise levels in the project vicinity above noise levels existing without the proposed project. The construction activities for the proposed project are anticipated to include site preparation and grading of the 2.78-acre project site, building construction of the 25,682-square foot showroom, boat servicing, and manufacturing facility, paving of the onsite roads and parking areas, and application of architectural coatings. Noise impacts from construction activities associated with the proposed project would be a function of the noise generated by construction equipment, equipment location, sensitivity of nearby land uses, and the timing and duration of the construction activities. The nearest sensitive receptors to the project site are the commercial uses located as near as 60 feet northwest of the project site. There are also single-family homes located as near as 1,400 feet southwest of the project site.

The construction noise impacts to the nearby sensitive receptors has been previously analyzed above in Section 7.2, which found that that the greatest noise impacts at the nearby off-site workers would occur during the site preparation phase of construction, with a noise level as high as 80 dBA, which is within the City's mobile equipment threshold for business properties of 85 dBA. However, the site preparation and grading phases have the potential to exceed the City's stationary equipment threshold of 75 dBA at the nearest off-site workers. This would be considered a significant impact.

Table I also shows that the greatest noise impacts at the nearest homes would occur during building construction, with a noise level as high as 56 dBA, which is within both the City's mobile equipment threshold of 75 dBA and stationary equipment threshold of 60 dBA.

Mitigation Measure 1 is provided that would require any stationary construction equipment that is used within 100 feet of the project's northeast and northwest property lines to place a temporary sound barrier between the stationary equipment and nearby sensitive receptors. With implementation of Mitigation Measure 1, the proposed project would not create a substantial temporary or periodic increase in ambient noise levels.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Mitigation Measure 1 provided above in Section 7.2.

Level of Significance After Mitigation

Less than significant impact.

7.6 Aircraft Noise

The proposed project would not expose people residing or working in the project area to excessive noise levels from aircraft. The nearest airport is Skylark Airport, located approximately five miles southeast of the project site. The project site is located outside of the 60 dBA CNEL noise contours of this airport and the site observations during the noise measurements found that although aircraft noise is occasionally audible at the project site, the noise created by the aircraft is not loud enough to measurably increase the

ambient noise levels, which is primarily created by Riverside Drive. Impacts would be less than significant.

Level of Significance

Less than significant impact.

8.0 REFERENCES

Albert Wilson & Associates, *Tige Watersports Traffic Impact Analysis*, June, 2017

California Department of Transportation, *2015 Annual Average Daily Truck Traffic on the California State Highway System*, 2016.

California Department of Transportation (Caltrans), *Technical Noise Supplement to the Traffic Noise Analytics Protocol*, September 2013.

California Department of Transportation, *Transportation- and Construction-Induced Vibration Guidance Manual*, September 2013.

City of Lake Elsinore, *City of Lake Elsinore General Plan*, December 13, 2011.

City of Lake Elsinore, *City of Lake Elsinore General Plan Update Final Recirculated Program Environmental Impact Report*, December 13, 2011.

City of Lake Elsinore, *Lake Elsinore Municipal Code,* February 24, 2015.

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

U.S. Department of Transportation, *FHWA Roadway Construction Noise Model User's Guide,* January, 2006.

Vista Environmental, *Air Quality and Greenhouse Gas Emissions Impact Analysis Tige Watersports Project, City of Lake Elsinore,* June 9, 2017.

APPENDIX A

Study Area Photo Index

Noise Measurement Site A - Looking North

Noise Measurement Site A - Looking Northeast

Noise Measurement Site A - Looking East

Noise Measurement Site A - Looking Southeast

Noise Measurement Site A - Looking South

Noise Measurement Site A - Southwest

Noise Measurement Site A - Looking West

Noise Measurement Site A - Looking Northwest

Noise Measurement Site B - Looking North

Noise Measurement Site B - Looking Northeast

Noise Measurement Site B - Looking East

Noise Measurement Site B - Looking Southeast

Noise Measurement Site B - Looking South

Noise Measurement Site B - Looking Southwest

Noise Measurement Site B - Looking West

Noise Measurement Site B - Looking Northwest

APPENDIX B

Field Noise Measurement Printouts

General Information

Serial Number	02509
Model	831
Firmware Version	2.301
Filename	831_Data.008
User	GT
Job Description	Lake Elsinore Tige Water Sports
Location	At Project Site Approx 110' NW of Riverside Dr, 350' SW of Collie

Measurement Description	
Start Time	Tuesday, 2017 March 28 11:34:21
Stop Time	Tuesday, 2017 March 28 11:44:21
Duration	00:10:00.7
Run Time	00:10:00.7
Pause	00:00:00.0
Pre Calibration	Tuesday, 2017 March 28 11:12:45
Post Calibration	None
Calibration Deviation	---

Note

Noise from vehicles on Riversie Dr, Collier Ave, and Interstate 15
72F, 28.67 in Hg, 22% Hu, 10 mph wind, clear sky

Overall Data

LAeq		62.3	dB
LASmax	2017 Mar 28 11:40:26	72.6	dB
LApeak (max)	2017 Mar 28 11:40:26	86.0	dB
LASmin	2017 Mar 28 11:39:59	54.0	dB
LCeq		73.8	dB
LAeq		62.3	dB
LCeq - LAeq		11.5	dB
LAIeq		63.4	dB
LAeq		62.3	dB
LAIeq - LAeq		1.1	dB
Ldn		62.3	dB
LDay 07:00-23:00		62.3	dB
LNight 23:00-07:00		---	dB
Lden		62.3	dB
LDay 07:00-19:00		62.3	dB
LEvening 19:00-23:00		---	dB
LNight 23:00-07:00		---	dB
LAE		90.1	dB
# Overloads		0	
Overload Duration		0.0	s
# OBA Overloads		0	
OBA Overload Duration		0.0	s

Statistics

LAS5.00	67.1	dBA
LAS10.00	64.4	dBA
LAS33.30	61.5	dBA
LAS50.00	60.4	dBA
LAS66.60	59.5	dBA
LAS90.00	57.5	dBA

LAS > 65.0 dB (Exceedence Counts / Duration)	9 / 69.4	s
LAS > 85.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 135.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 137.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 140.0 dB (Exceedence Counts / Duration)	0 / 0.0	s

Settings

RMS Weight	A Weighting	
Peak Weight	A Weighting	
Detector	Slow	
Preamp	PRM831	
Integration Method	Linear	
OBA Range	Normal	
OBA Bandwidth	1/1 and 1/3	
OBA Freq. Weighting	Z Weighting	
OBA Max Spectrum	Bin Max	
Gain	+0	dB

Under Range Limit	26.2	dB
Under Range Peak	75.8	dB
Noise Floor	17.0	dB
Overload	143.3	dB

1/1 Spectra

Freq. (Hz):	8.0	16.0	31.5	63.0	125	250	500	1k	2k	4k	8k	16k
LZeq	78.6	73.7	68.5	67.1	68.9	64.0	59.4	58.5	48.9	40.5	40.3	42.9
LZSmax	89.7	86.3	79.0	79.1	81.7	79.8	73.1	68.6	60.7	55.7	55.0	45.8
LZSmin	52.5	59.1	57.5	55.5	54.5	47.9	50.7	51.9	41.4	36.2	39.3	42.8

1/3 Spectra

Freq. (Hz):	6.3	8.0	10.0	12.5	16.0	20.0	25.0	31.5	40.0	50.0	63.0	80.0
LZeq	75.3	73.7	72.0	70.5	68.6	67.1	65.1	63.4	62.3	61.5	62.7	62.8
LZSmax	87.2	85.3	83.0	82.7	82.7	79.3	75.6	75.1	74.0	72.0	72.4	79.1
LZSmin	44.4	48.6	47.7	52.8	53.4	53.5	49.9	52.6	52.1	51.5	52.8	51.7

Freq. (Hz):	100	125	160	200	250	315	400	500	630	800	1k	1.25k
LZeq	63.8	66.4	60.1	62.2	57.1	55.9	54.8	54.7	54.6	55.3	54.0	50.9
LZSmax	77.7	81.7	76.5	79.7	73.2	74.4	71.0	68.7	65.5	65.1	66.0	61.8
LZSmin	50.6	48.8	45.3	44.6	42.2	41.0	42.7	46.4	46.3	47.7	47.7	44.2

Freq. (Hz):	1.6k	2k	2.5k	3.15k	4k	5k	6.3k	8k	10k	12.5k	16k	20k
LZeq	47.0	42.4	39.7	37.0	35.2	34.4	34.5	35.2	36.7	37.0	37.9	39.5
LZSmax	57.5	55.2	54.6	52.5	50.7	48.8	48.4	47.6	52.9	41.3	40.3	41.5
LZSmin	39.7	34.5	30.9	30.6	31.1	31.6	32.9	34.4	34.7	36.7	37.7	38.4

Calibration History

Preamp	Date	dB re. 1V/Pa
PRM831	28 Mar 2017 11:12:45	-25.8
PRM831	02 Nov 2016 10:44:45	-25.2
PRM831	22 Sep 2016 15:49:59	-26.5
PRM831	24 Aug 2016 19:03:10	-26.1
PRM831	26 Jul 2016 10:53:46	-26.0
PRM831	26 Jul 2016 09:33:01	-26.4
PRM831	26 Jul 2016 07:41:35	-25.1
PRM831	25 Jul 2016 14:18:53	-26.4
PRM831	25 Jul 2016 12:49:23	-25.2
PRM831	25 Jul 2016 09:43:52	-24.8
PRM831	25 Jul 2016 07:24:48	-25.6

General Information

Serial Number	02509
Model	831
Firmware Version	2.301
Filename	831_Data.009
User	GT
Job Description	Lake Elsinore Tige Water Sports
Location	At Nearest Home approx 1,500 ft west of Project

Measurement Description	
Start Time	Tuesday, 2017 March 28 11:51:44
Stop Time	Tuesday, 2017 March 28 12:01:55
Duration	00:10:11.4
Run Time	00:10:11.4
Pause	00:00:00.0
Pre Calibration	Tuesday, 2017 March 28 11:12:45
Post Calibration	None
Calibration Deviation	---

Note

Located approx 25' SW of Baker St CL and 15' NW of Turnbull Ave
Noise primmarily from Interstate 15
72 F, 28.67 in Hg, 22% Hu, 10 mph wind, clear sky

Overall Data

LAeq		57.0	dB
LASmax	2017 Mar 28 11:53:59	75.5	dB
LApeak (max)	2017 Mar 28 11:53:58	95.5	dB
LASmin	2017 Mar 28 11:59:27	47.9	dB
LCeq		69.2	dB
LAeq		57.0	dB
LCeq - LAeq		12.2	dB
LAIeq		60.8	dB
LAeq		57.0	dB
LAIeq - LAeq		3.8	dB
Ldn		57.0	dB
LDay 07:00-23:00		57.0	dB
LNight 23:00-07:00		---	dB
Lden		57.0	dB
LDay 07:00-19:00		57.0	dB
LEvening 19:00-23:00		---	dB
LNight 23:00-07:00		---	dB
LAE		84.8	dB
# Overloads		0	
Overload Duration		0.0	s
# OBA Overloads		0	
OBA Overload Duration		0.0	s

Statistics

LAS5.00	61.6	dBA
LAS10.00	58.9	dBA
LAS33.30	52.5	dBA
LAS50.00	51.4	dBA
LAS66.60	50.8	dBA
LAS90.00	50.0	dBA
LAS > 65.0 dB (Exceedence Counts / Duration)	3 / 18.1	s
LAS > 85.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 135.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 137.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 140.0 dB (Exceedence Counts / Duration)	0 / 0.0	s

Settings

RMS Weight	A Weighting	
Peak Weight	A Weighting	
Detector	Slow	
Preamp	PRM831	
Integration Method	Linear	
OBA Range	Normal	
OBA Bandwidth	1/1 and 1/3	
OBA Freq. Weighting	Z Weighting	
OBA Max Spectrum	Bin Max	
Gain	+0	dB
Under Range Limit	26.2	dB
Under Range Peak	75.8	dB
Noise Floor	17.0	dB
Overload	143.3	dB

1/1 Spectra

Freq. (Hz):	8.0	16.0	31.5	63.0	125	250	500	1k	2k	4k	8k	16k
LZeq	76.9	70.9	64.7	61.2	63.6	57.7	54.9	51.1	46.6	43.0	40.7	43.0
LZSmax	92.8	86.1	78.0	73.7	83.7	78.8	74.1	68.8	64.3	60.2	53.9	45.7
LZSmin	53.1	57.3	54.2	52.8	47.0	42.8	46.2	44.6	36.4	36.6	39.4	42.3

1/3 Spectra

Freq. (Hz):	6.3	8.0	10.0	12.5	16.0	20.0	25.0	31.5	40.0	50.0	63.0	80.0
LZeq	74.3	71.3	69.7	67.5	66.0	64.3	61.7	59.3	57.5	55.8	56.4	57.1
LZSmax	90.9	86.7	84.5	84.0	80.9	79.8	76.3	73.4	71.6	69.6	71.3	72.6
LZSmin	44.8	44.7	48.8	53.3	49.4	50.2	49.4	48.9	48.3	42.5	47.2	38.2

Freq. (Hz):	100	125	160	200	250	315	400	500	630	800	1k	1.25k
LZeq	56.6	59.5	59.9	53.0	53.0	52.3	51.4	50.4	48.5	47.9	46.3	44.2
LZSmax	73.8	77.9	82.2	74.5	73.5	73.5	72.2	69.0	64.5	66.3	63.9	60.5
LZSmin	41.2	41.1	38.4	36.9	37.7	32.0	40.3	42.1	41.4	41.3	40.0	36.3

Freq. (Hz):	1.6k	2k	2.5k	3.15k	4k	5k	6.3k	8k	10k	12.5k	16k	20k
LZeq	42.9	41.6	40.7	39.7	38.1	36.2	35.9	35.6	36.3	37.2	37.9	39.6
LZSmax	61.0	60.4	58.5	56.7	56.6	52.1	52.8	47.8	45.9	41.7	41.3	41.2
LZSmin	32.4	30.9	30.9	31.1	31.8	32.5	33.4	34.4	35.5	36.2	37.7	38.9

Calibration History

Preamp	Date	dB re. 1V/Pa
PRM831	28 Mar 2017 11:12:45	-25.8
PRM831	02 Nov 2016 10:44:45	-25.2
PRM831	22 Sep 2016 15:49:59	-26.5
PRM831	24 Aug 2016 19:03:10	-26.1
PRM831	26 Jul 2016 10:53:46	-26.0
PRM831	26 Jul 2016 09:33:01	-26.4
PRM831	26 Jul 2016 07:41:35	-25.1
PRM831	25 Jul 2016 14:18:53	-26.4
PRM831	25 Jul 2016 12:49:23	-25.2
PRM831	25 Jul 2016 09:43:52	-24.8
PRM831	25 Jul 2016 07:24:48	-25.6

APPENDIX C

RCNM Model Construction Noise Calculations

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 6/6/2017
Case Description: Tige Watersports - Site Preparation

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Offsite Workers to N	Commercial	62.3	62.3	62.3

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85		60	0
Dozer	No	40		81.7	110	0
Tractor	No	40	84		160	0

Equipment		Calculated (dBA) *Lmax	Leq	Results Day Lmax	Day Leq	Noise Limits (dBA) Evening Lmax	Evening Leq
Grader		83.4	79.4	N/A	N/A	N/A	N/A
Dozer		74.8	70.8	N/A	N/A	N/A	N/A
Tractor		73.9	69.9	N/A	N/A	N/A	N/A
	Total	**83.4**	**80.4**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Single Family Home	Residential	57.0	57.0	57

Impact	Equipment Spec Lmax	Actual Lmax	Receptor Distance	Estimated Shielding

Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Grader	No	40	85		1400	0
Dozer	No	40		81.7	1450	0
Tractor	No	40.0	84		1500	0

	Calculated (dBA)		Results			
			Noise Limits (dBA)			
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Grader	56	52	N/A	N/A	N/A	N/A
Dozer	52	48	N/A	N/A	N/A	N/A
Tractor	55	51	N/A	N/A	N/A	N/A
Total	**56**	**55**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 6/6/2017
Case Description: Tige Watersports - Grading

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Offsite Workers to N	Commercial	62.3	62.3	62.3

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	60	0
Scraper	No	40		83.6	110	0
Tractor	No	40	84		160	0

Results

Equipment	Calculated (dBA) *Lmax	Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq
Excavator	79.1	75.1	N/A	N/A	N/A	N/A
Scraper	76.7	72.8	N/A	N/A	N/A	N/A
Tractor	73.9	69.9	N/A	N/A	N/A	N/A
Total	**79.1**	**77.9**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Single Family Home	Residential	57.0	57.0	57

Impact	Equipment Spec Lmax	Actual Lmax	Receptor Distance	Estimated Shielding

Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Excavator	No	40		80.7	1400	0
Scraper	No	40		83.6	1450	0
Tractor	No	40.0	84		1500	0

	Results					
	Calculated (dBA)		Noise Limits (dBA)			
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator	52	48	N/A	N/A	N/A	N/A
Scraper	54	50	N/A	N/A	N/A	N/A
Tractor	55	51	N/A	N/A	N/A	N/A
Total	**55**	**55**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 6/6/2017
Case Description: Tige Watersports - Construction

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Offsite Workers to NW	Commercial	62.3	62.3	62.3

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	330	0
Gradall	No	40		83.4	380	0
Gradall	No	40		83.4	430	0
Generator	No	50		80.6	480	0
Welder / Torch	No	40		74	530	0
Welder / Torch	No	40		74	580	0
Welder / Torch	No	40		74	630	0
Tractor	No	40	84		680	0

Equipment	Calculated (dBA) *Lmax	Leq	Results Day Lmax	Day Leq	Noise Limits (dBA) Evening Lmax	Evening Leq
Crane	64.2	56.2	N/A	N/A	N/A	N/A
Gradall	65.8	61.8	N/A	N/A	N/A	N/A
Gradall	64.7	60.7	N/A	N/A	N/A	N/A
Generator	61.0	58.0	N/A	N/A	N/A	N/A
Welder / Torch	53.5	49.5	N/A	N/A	N/A	N/A
Welder / Torch	52.7	48.7	N/A	N/A	N/A	N/A
Welder / Torch	52.0	48.0	N/A	N/A	N/A	N/A
Tractor	61.3	57.3	N/A	N/A	N/A	N/A
Total	**65.8**	**66.5**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Single Family Home to	Residential	57	57	57

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	1450	0
Gradall	No	40		83.4	1500	0
Gradall	No	40		83.4	1550	0
Generator	No	50		80.6	1600	0
Welder / Torch	No	40		74	1650	0
Welder / Torch	No	40		74	1700	0
Welder / Torch	No	40		74	1750	0
Tractor	No	40	84		1800	0

	Calculated (dBA)		Results			
				Noise Limits (dBA)		
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	51	43	N/A	N/A	N/A	N/A
Gradall	54	50	N/A	N/A	N/A	N/A
Gradall	54	50	N/A	N/A	N/A	N/A
Generator	50.5	47.5	N/A	N/A	N/A	N/A
Welder / Torch	43.6	39.7	N/A	N/A	N/A	N/A
Welder / Torch	43.4	39.4	N/A	N/A	N/A	N/A
Welder / Torch	43.1	39.1	N/A	N/A	N/A	N/A
Tractor	52.9	48.9	N/A	N/A	N/A	N/A
Total	**53.9**	**55.7**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 6/6/2017
Case Description: Tige Watersports - Paving

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Offsite Workers to NW	Commercial	62.3	62.3	62.3

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Mixer Truck	No	40		78.8	180	0
Paver	No	50		77.2	230	0
Paver	No	50		77.2	280	0
Roller	No	20		80	330	0
Roller	No	20		80	380	0
Tractor	No	40	84		430	0

Equipment	Calculated (dBA) *Lmax	Leq	Results Day Lmax	Day Leq	Noise Limits (dBA) Evening Lmax	Evening Leq
Concrete Mixer Truck	67.7	63.7	N/A	N/A	N/A	N/A
Paver	64.0	61.0	N/A	N/A	N/A	N/A
Paver	62.3	59.2	N/A	N/A	N/A	N/A
Roller	63.6	56.6	N/A	N/A	N/A	N/A
Roller	62.4	55.4	N/A	N/A	N/A	N/A
Tractor	65.3	61.3	N/A	N/A	N/A	N/A
Total	**68**	**68**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Single Family Home to S	Residential	57	57	57

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Mixer Truck	No	40		78.8	1400	0
Paver	No	50		77.2	1450	0
Paver	No	50		77.2	1500	0
Roller	No	20		80	1550	0
Roller	No	20		80	1600	0
Tractor	No	40	84		1650	0

Equipment	Calculated (dBA) *Lmax	Leq	Results Day Lmax	Day Leq	Noise Limits (dBA) Evening Lmax	Evening Leq
Concrete Mixer Truck	49.9	45.9	N/A	N/A	N/A	N/A
Paver	48.0	45.0	N/A	N/A	N/A	N/A
Paver	47.7	44.7	N/A	N/A	N/A	N/A
Roller	50.2	43.2	N/A	N/A	N/A	N/A
Roller	49.9	42.9	N/A	N/A	N/A	N/A
Tractor	53.6	49.7	N/A	N/A	N/A	N/A
Total	**54**	**54**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 6/6/2017
Case Description: Tige Watersports - Painting

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Offsite Workers to NW	Commercial	62.3	62.3	62.3

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	330	0

		Calculated (dBA)		Results		Noise Limits (dBA)	
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)		61.3	57.3	N/A	N/A	N/A	N/A
	Total	**61**	**57**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Single Family Home to S	Residential	57	57	57

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	1450	0

		Calculated (dBA)		Results		Noise Limits (dBA)	
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)		48	44	N/A	N/A	N/A	N/A
	Total	**48**	**44**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

APPENDIX D

Operational Reference Noise Measurements

General Information

Serial Number	02509
Model	831
Firmware Version	2.301
Filename	831_Data.005
User	GT
Job Description	Lake Elsinore Tige Water Sports
Location	29400 Enterprise Wy - 15' from Boat Sanding

Measurement Description	
Start Time	Tuesday, 2017 March 28 11:17:37
Stop Time	Tuesday, 2017 March 28 11:25:38
Duration	00:08:00.9
Run Time	00:08:00.9
Pause	00:00:00.0
Pre Calibration	Tuesday, 2017 March 28 11:12:47
Post Calibration	None
Calibration Deviation	---

Note

Noise from boat sanding 15' away
72F, 28.67 in Hg, 22% Hu, 10 mph wind, clear sky

Overall Data

LAeq		59.4	dB
LASmax	2017 Mar 28 11:17:44	76.0	dB
LApeak (max)	2017 Mar 28 11:17:43	101.0	dB
LASmin	2017 Mar 28 11:24:08	52.7	dB
LCeq		68.4	dB
LAeq		59.4	dB
LCeq - LAeq		9.0	dB
LAIeq		66.0	dB
LAeq		59.4	dB
LAIeq - LAeq		6.6	dB
Ldn		59.4	dB
LDay 07:00-23:00		59.4	dB
LNight 23:00-07:00		---	dB
Lden		59.4	dB
LDay 07:00-19:00		59.4	dB
LEvening 19:00-23:00		---	dB
LNight 23:00-07:00		---	dB
LAE		86.2	dB
# Overloads		0	
Overload Duration		0.0	s
# OBA Overloads		0	
OBA Overload Duration		0.0	s

Statistics

LAS5.00	63.5	dBA
LAS10.00	59.9	dBA
LAS33.30	57.1	dBA
LAS50.00	56.6	dBA
LAS66.60	56.1	dBA
LAS90.00	55.1	dBA

LAS > 65.0 dB (Exceedence Counts / Duration)	9 / 25.7	s
LAS > 85.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 135.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 137.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 140.0 dB (Exceedence Counts / Duration)	0 / 0.0	s

Settings

RMS Weight	A Weighting	
Peak Weight	A Weighting	
Detector	Slow	
Preamp	PRM831	
Integration Method	Linear	
OBA Range	Normal	
OBA Bandwidth	1/1 and 1/3	
OBA Freq. Weighting	Z Weighting	
OBA Max Spectrum	Bin Max	
Gain	+0	dB

Under Range Limit	26.2	dB
Under Range Peak	75.8	dB
Noise Floor	17.0	dB
Overload	143.3	dB

1/1 Spectra

Freq. (Hz):	8.0	16.0	31.5	63.0	125	250	500	1k	2k	4k	8k	16k
LZeq	77.0	70.9	65.6	60.9	57.1	55.2	56.4	55.9	50.7	45.0	44.3	45.4
LZSmax	90.7	82.5	76.5	68.6	68.9	71.9	71.2	72.1	70.3	60.0	63.0	62.1
LZSmin	54.9	58.1	57.7	54.5	50.3	47.5	49.6	50.1	38.7	36.1	39.4	42.9

1/3 Spectra

Freq. (Hz):	6.3	8.0	10.0	12.5	16.0	20.0	25.0	31.5	40.0	50.0	63.0	80.0
LZeq	74.1	71.9	70.0	67.9	65.8	63.9	62.8	60.3	57.9	57.1	55.8	55.1
LZSmax	87.6	85.1	83.7	79.8	77.1	75.8	74.0	71.5	69.6	65.6	65.5	66.5
LZSmin	49.6	48.4	48.8	50.7	52.5	50.1	52.5	49.2	49.1	50.0	47.4	46.6

Freq. (Hz):	100	125	160	200	250	315	400	500	630	800	1k	1.25k
LZeq	53.7	51.8	50.9	50.2	50.5	50.5	50.2	52.0	52.3	52.7	51.6	48.7
LZSmax	68.8	61.9	62.5	61.9	67.1	69.0	65.6	66.7	68.7	68.9	68.2	65.8
LZSmin	45.3	43.9	42.7	43.3	42.2	41.8	43.0	44.8	45.7	46.6	45.8	41.6

Freq. (Hz):	1.6k	2k	2.5k	3.15k	4k	5k	6.3k	8k	10k	12.5k	16k	20k
LZeq	47.6	46.4	43.2	41.3	39.6	39.4	39.5	39.5	39.6	40.6	40.4	41.1
LZSmax	67.6	66.1	62.4	58.4	54.9	56.1	62.0	56.9	57.0	57.8	57.5	57.2
LZSmin	36.5	31.8	30.0	30.3	31.0	32.1	33.4	34.4	35.6	36.8	37.7	39.4

Calibration History

Preamp	Date	dB re. 1V/Pa
PRM831	28 Mar 2017 11:12:45	-25.8
PRM831	02 Nov 2016 10:44:45	-25.2
PRM831	22 Sep 2016 15:49:59	-26.5
PRM831	24 Aug 2016 19:03:10	-26.1
PRM831	26 Jul 2016 10:53:46	-26.0
PRM831	26 Jul 2016 09:33:01	-26.4
PRM831	26 Jul 2016 07:41:35	-25.1
PRM831	25 Jul 2016 14:18:53	-26.4
PRM831	25 Jul 2016 12:49:23	-25.2
PRM831	25 Jul 2016 09:43:52	-24.8
PRM831	25 Jul 2016 07:24:48	-25.6

General Information

Serial Number	02509
Model	831
Firmware Version	2.301
Filename	831_Data.007
User	GT
Job Description	Lake Elsinore Tige Water Sports
Location	29400 Enterprise Wy - 20' from Air Compressor

Measurement Description	
Start Time	Tuesday, 2017 March 28 11:27:19
Stop Time	Tuesday, 2017 March 28 11:28:23
Duration	00:01:04.0
Run Time	00:01:04.0
Pause	00:00:00.0
Pre Calibration	Tuesday, 2017 March 28 11:12:45
Post Calibration	None
Calibration Deviation	---

Note

Noise from air compressor located 20' away
72F, 28.67 in Hg, 22% Hu, 10 mph wind, clear sky

Overall Data

LAeq		69.5	dB
LASmax	2017 Mar 28 11:27:51	70.7	dB
LApeak (max)	2017 Mar 28 11:27:51	83.9	dB
LASmin	2017 Mar 28 11:28:23	54.0	dB
LCeq		75.7	dB
LAeq		69.5	dB
LCeq - LAeq		6.2	dB
LAIeq		70.1	dB
LAeq		69.5	dB
LAIeq - LAeq		0.6	dB
Ldn		69.5	dB
LDay 07:00-23:00		69.5	dB
LNight 23:00-07:00		---	dB
Lden		69.5	dB
LDay 07:00-19:00		69.5	dB
LEvening 19:00-23:00		---	dB
LNight 23:00-07:00		---	dB
LAE		87.5	dB
# Overloads		0	
Overload Duration		0.0	s
# OBA Overloads		0	
OBA Overload Duration		0.0	s

Statistics

LAS5.00	70.4	dBA
LAS10.00	70.3	dBA
LAS33.30	70.0	dBA
LAS50.00	69.8	dBA
LAS66.60	69.7	dBA
LAS90.00	68.9	dBA

LAS > 65.0 dB (Exceedence Counts / Duration)	1 / 60.5	s
LAS > 85.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 135.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 137.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 140.0 dB (Exceedence Counts / Duration)	0 / 0.0	s

Settings

RMS Weight	A Weighting	
Peak Weight	A Weighting	
Detector	Slow	
Preamp	PRM831	
Integration Method	Linear	
OBA Range	Normal	
OBA Bandwidth	1/1 and 1/3	
OBA Freq. Weighting	Z Weighting	
OBA Max Spectrum	Bin Max	
Gain	+0	dB

Under Range Limit	26.2	dB
Under Range Peak	75.8	dB
Noise Floor	17.0	dB
Overload	143.3	dB

1/1 Spectra

Freq. (Hz):	8.0	16.0	31.5	63.0	125	250	500	1k	2k	4k	8k	16k
LZeq	79.4	73.5	68.4	64.0	71.8	65.1	67.0	64.1	61.3	59.3	54.0	55.6
LZSmax	88.4	83.5	74.1	68.5	72.9	67.8	69.6	66.4	63.2	61.5	63.3	68.4
LZSmin	56.6	61.0	57.9	60.1	52.7	48.7	49.4	50.1	44.0	41.4	44.8	48.7

1/3 Spectra

Freq. (Hz):	6.3	8.0	10.0	12.5	16.0	20.0	25.0	31.5	40.0	50.0	63.0	80.0
LZeq	76.9	74.4	71.4	70.9	67.7	66.4	63.5	64.7	62.3	57.0	61.9	56.5
LZSmax	86.6	82.4	81.5	82.0	76.2	74.8	72.0	69.8	67.1	64.2	68.0	58.5
LZSmin	56.1	57.3	50.1	52.6	56.5	56.5	51.0	53.5	52.8	43.0	52.9	48.8

Freq. (Hz):	100	125	160	200	250	315	400	500	630	800	1k	1.25k
LZeq	66.0	70.1	59.5	59.3	54.6	63.2	61.7	63.7	59.9	59.8	59.9	58.0
LZSmax	67.9	72.0	62.1	62.9	57.5	66.3	64.4	66.5	61.6	61.9	61.9	63.8
LZSmin	49.7	47.6	45.4	45.0	42.7	43.7	43.8	43.9	45.7	46.9	45.8	42.8

Freq. (Hz):	1.6k	2k	2.5k	3.15k	4k	5k	6.3k	8k	10k	12.5k	16k	20k
LZeq	56.0	56.7	56.8	57.5	52.7	50.1	50.4	48.5	48.7	50.8	52.2	48.9
LZSmax	59.0	59.2	58.7	59.7	55.2	56.4	57.4	58.6	60.0	63.5	65.3	61.7
LZSmin	40.2	38.7	37.6	36.8	36.2	36.8	37.7	39.4	41.9	44.1	43.8	42.7

Calibration History

Preamp	Date	dB re. 1V/Pa
PRM831	28 Mar 2017 11:12:45	-25.8
PRM831	02 Nov 2016 10:44:45	-25.2
PRM831	22 Sep 2016 15:49:59	-26.5
PRM831	24 Aug 2016 19:03:10	-26.1
PRM831	26 Jul 2016 10:53:46	-26.0
PRM831	26 Jul 2016 09:33:01	-26.4
PRM831	26 Jul 2016 07:41:35	-25.1
PRM831	25 Jul 2016 14:18:53	-26.4
PRM831	25 Jul 2016 12:49:23	-25.2
PRM831	25 Jul 2016 09:43:52	-24.8
PRM831	25 Jul 2016 07:24:48	-25.6

General Information

Serial Number	02509
Model	831
Firmware Version	2.112
Filename	831_Data.005
User	GT
Job Description	Northwest Fresno Walmart Relocation
Location	Rooftop HVAC Unit

Measurement Description	
Start Time	Saturday, 2013 July 27 18:31:43
Stop Time	Saturday, 2013 July 27 18:41:44
Duration	00:10:01.1
Run Time	00:10:01.1
Pause	00:00:00.0
Pre Calibration	Saturday, 2013 July 27 17:53:07
Post Calibration	None
Calibration Deviation	---

Note

Located 10 feet southeast of rooftop HVAC Unit 14 located on western side of roof
94 F, 30% Hu., 29.45 in Hg, no wind, partly cloudy

Overall Data

LAeq		66.6	dB
LASmax	2013 Jul 27 18:33:16	67.6	dB
LApeak (max)	2013 Jul 27 18:32:17	81.6	dB
LASmin	2013 Jul 27 18:41:08	65.8	dB
LCeq		75.8	dB
LAeq		66.6	dB
LCeq - LAeq		9.2	dB
LAIeq		67.2	dB
LAeq		66.6	dB
LAIeq - LAeq		0.6	dB
Ldn		66.6	dB
LDay 07:00-23:00		66.6	dB
LNight 23:00-07:00		---	dB
Lden		66.6	dB
LDay 07:00-19:00		66.6	dB
LEvening 19:00-23:00		---	dB
LNight 23:00-07:00		---	dB
LAE		94.4	dB
# Overloads		0	
Overload Duration		0.0	s
# OBA Overloads		0	
OBA Overload Duration		0.0	s

Statistics

LAS5.00	67.0	dBA
LAS10.00	66.9	dBA
LAS33.30	66.7	dBA
LAS50.00	66.6	dBA
LAS66.60	66.5	dBA
LAS90.00	66.3	dBA
LAS > 65.0 dB (Exceedence Counts / Duration)	1 / 601.1	s
LAS > 85.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 135.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 137.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 140.0 dB (Exceedence Counts / Duration)	0 / 0.0	s

Settings

RMS Weight	A Weighting	
Peak Weight	A Weighting	
Detector	Slow	
Preamp	PRM831	
Integration Method	Linear	
OBA Range	Normal	
OBA Bandwidth	1/1 and 1/3	
OBA Freq. Weighting	Z Weighting	
OBA Max Spectrum	Bin Max	
Gain	+0	dB
Under Range Limit	26.2	dB
Under Range Peak	75.8	dB
Noise Floor	17.1	dB
Overload	143.4	dB

1/1 Spectra

Freq. (Hz):	8.0	16.0	31.5	63.0	125	250	500	1k	2k	4k	8k	16k
LZeq	70.9	64.4	61.4	74.2	68.2	64.9	66.3	61.7	55.1	49.9	44.3	44.0
LZSmax	83.8	78.9	70.0	78.4	72.3	66.1	67.8	63.1	56.9	53.2	46.7	45.4
LZSmin	53.2	56.5	56.7	67.7	66.1	63.5	65.0	60.7	53.9	48.4	43.2	43.7

1/3 Spectra

Freq. (Hz):	6.3	8.0	10.0	12.5	16.0	20.0	25.0	31.5	40.0	50.0	63.0	80.0
LZeq	68.1	65.7	63.2	61.0	58.0	59.3	56.0	57.8	55.8	69.7	72.0	59.3
LZSmax	82.3	79.5	78.7	77.2	72.8	72.3	67.9	63.5	64.0	74.2	76.1	72.0
LZSmin	41.9	46.3	48.8	48.7	46.5	49.7	50.1	51.8	41.2	63.9	67.9	54.5

Freq. (Hz):	100	125	160	200	250	315	400	500	630	800	1k	1.25k
LZeq	61.6	63.7	64.5	59.0	58.7	60.9	63.2	60.8	59.9	59.2	56.1	54.6
LZSmax	71.3	68.0	67.3	61.6	61.7	64.1	65.5	64.2	62.0	60.7	57.6	58.6
LZSmin	52.9	60.0	57.2	45.1	56.0	58.9	61.1	58.4	58.4	57.1	54.9	53.3

Freq. (Hz):	1.6k	2k	2.5k	3.15k	4k	5k	6.3k	8k	10k	12.5k	16k	20k
LZeq	52.0	49.8	48.4	46.4	45.4	42.8	41.1	38.6	38.5	38.4	39.0	40.2
LZSmax	54.4	52.3	51.2	50.2	49.7	45.7	45.4	41.6	40.4	40.4	41.4	41.3
LZSmin	50.9	48.4	46.9	45.0	43.7	41.4	39.6	37.5	37.9	38.0	38.7	39.9

Calibration History

Preamp	Date	dB re. 1V/Pa
PRM831	27 Jul 2013 17:53:07	-25.9
PRM831	27 Jul 2013 13:36:08	-25.6
PRM831	28 Apr 2013 15:34:24	-25.9
PRM831	23 Apr 2013 10:17:33	-25.0
PRM831	27 Feb 2013 19:15:30	-25.7
PRM831	24 Jan 2013 12:00:16	-25.6
PRM831	15 Jan 2013 07:50:44	-26.2
PRM831	04 Jan 2013 13:47:46	-26.5

File Translated: V:\Vista Env\2010\10022-Fresno Walmart\Noise Measurements\LD\15.slmdl
Model/Serial Number: 824 / A3176
Firmware/Software Revs: 4.283 / 3.120
Name:
Descr1: 1021 Didrikson Way
Descr2: Laguna Beach, CA 92651
Setup/Setup Descr: slm&rta.ssa / SLM & Real-Time Analyzer
Location: 30' N of vendor truck loading area for Fresno Walmart
Note1: Approx 70' S of Locust Ave CL
Note2: 52F, 29.57 in Hg, 67% Humid., no wind, clear sky

Overall Any Data
Start Time: 19-May-2011 07:05:53
Elapsed Time: 00:08:30.5

	A Weight		C Weight		Flat	
Leq:	54.8 dBA		65.1 dBC		66.1 dBF	
SEL:	81.9 dBA		92.2 dBC		93.2 dBF	
Peak:	85.2 dBA		85.8 dBC		86.0 dBF	
	19-May-2011	07:09:58	19-May-2011	07:09:52	19-May-2011	07:09:52
Lmax (slow):	67.9 dBA		73.2 dBC		73.8 dBF	
	19-May-2011	07:09:50	19-May-2011	07:13:57	19-May-2011	07:13:57
Lmin (slow):	43.7 dBA		60.0 dBC		61.6 dBF	
	19-May-2011	07:11:17	19-May-2011	07:06:52	19-May-2011	07:06:51
Lmax (fast):	70.7 dBA		75.5 dBC		75.7 dBF	
	19-May-2011	07:09:58	19-May-2011	07:11:34	19-May-2011	07:11:34
Lmin (fast):	43.1 dBA		57.8 dBC		58.9 dBF	
	19-May-2011	07:11:17	19-May-2011	07:09:10	19-May-2011	07:09:10
Lmax (impulse):	72.1 dBA		76.8 dBC		77.1 dBF	
	19-May-2011	07:09:58	19-May-2011	07:11:34	19-May-2011	07:11:34
Lmin (impulse):	43.6 dBA		61.1 dBC		62.4 dBF	
	19-May-2011	07:11:17	19-May-2011	07:06:51	19-May-2011	07:09:10

Spectra

Date	Time	Run Time
19-May-2011	07:05:53	00:08:30.5

Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1	Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1
12.5	50.2		56.3		35.5		630	46.5		61.4		31.0	
16.0	50.9	55.5	56.1	61.5	37.1	41.8	800	45.4		60.8		30.5	
20.0	51.0		57.6		38.0		1000	44.5	49.3	56.1	63.9	31.7	35.6
25.0	55.8		57.5		41.1		1250	43.5		59.4		30.2	
31.5	57.7	61.6	57.1	63.3	46.2	49.9	1600	42.6		56.3		28.1	
40.0	56.7		60.3		46.3		2000	41.1	46.1	56.4	61.9	24.9	30.4
50.0	56.8		57.9		44.0		2500	40.0		58.4		21.7	
63.0	55.7	61.0	56.5	62.1	45.9	49.1	3150	40.2		60.8		19.4	
80.0	56.2		57.4		42.2		4000	39.5	43.8	58.6	63.4	18.7	24.1
100	55.6		55.1		42.3		5000	36.7		54.4		19.7	
125	54.3	59.2	59.0	63.8	40.7	45.7	6300	32.8		50.2		21.5	
160	52.8		61.0		39.4		8000	30.2	35.2	57.7	58.5	21.2	25.9
200	51.1		57.3		35.5		10000	25.4		41.5		20.5	
250	51.4	55.2	70.6	71.0	34.6	39.0	12500	22.9		32.2		19.4	
315	48.2		58.2		32.0		16000	20.8	26.5	27.4	33.9	19.1	24.4
400	47.0		59.0		30.1		20000	21.2		23.8		20.3	
500	47.0	51.6	64.3	66.9	30.4	35.3							

Ln Start Level: 15 dB

L1.00	0.0 dBA	L50.00	0.0 dBA	L95.00	0.0 dBA
L5.00	0.0 dBA	L90.00	0.0 dBA	L99.00	0.0 dBA

Detector: Slow
Weighting: A
SPL Exceedance Level 1: 85.0 dB Exceeded: 0 times
SPL Exceedance level 2: 120 dB Exceeded: 0 times
Peak-1 Exceedance Level: 105 dB Exceeded: 0 times
Peak-2 Exceedance Level: 100 dB Exceeded: 0 times
Hysteresis: 2
Overloaded: 0 time(s)
Paused: 0 times for 00:00:00.0

File Translated: V:\Vista Env\2010\10022-Fresno Walmart\Noise Measurements\LD\15.slmdl
Model/Serial Number: 824 / A3176

Current Any Data
Start Time: 19-May-2011 07:05:53
Elapsed Time: 00:08:30.5

	A Weight		C Weight		Flat	
Leq:	54.8 dBA		65.1 dBC		66.1 dBF	
SEL:	81.9 dBA		92.2 dBC		93.2 dBF	
Peak:	85.2 dBA		85.8 dBC		86.0 dBF	
	19-May-2011	07:09:58	19-May-2011	07:09:52	19-May-2011	07:09:52
Lmax (slow):	67.9 dBA		73.2 dBC		73.8 dBF	
	19-May-2011	07:09:50	19-May-2011	07:13:57	19-May-2011	07:13:57
Lmin (slow):	43.7 dBA		60.0 dBC		61.6 dBF	
	19-May-2011	07:11:17	19-May-2011	07:06:52	19-May-2011	07:06:51
Lmax (fast):	70.7 dBA		75.5 dBC		75.7 dBF	
	19-May-2011	07:09:58	19-May-2011	07:11:34	19-May-2011	07:11:34
Lmin (fast):	43.1 dBA		57.8 dBC		58.9 dBF	
	19-May-2011	07:11:17	19-May-2011	07:09:10	19-May-2011	07:09:10
Lmax (impulse):	72.1 dBA		76.8 dBC		77.1 dBF	
	19-May-2011	07:09:58	19-May-2011	07:11:34	19-May-2011	07:11:34
Lmin (impulse):	43.6 dBA		61.1 dBC		62.4 dBF	
	19-May-2011	07:11:17	19-May-2011	07:06:51	19-May-2011	07:09:10

Calibrated: 18-May-2011 13:09:02 Offset: -48.2 dB
Checked: 19-May-2011 06:46:08 Level: 113.9 dB
Calibrator not set Level: 114.0 dB
Cal Records Count: 0

Interval Records: Disabled Number Interval Records: 0
History Records: Disabled Number History Records: 0
Run/Stop Records: Number Run/Stop Records: 2

File Translated: V:\Vista Env\2010\10022-Fresno Walmart\Noise Measurements\LD\10.slmdl
Model/Serial Number: 824 / A3176
Firmware/Software Revs: 4.283 / 3.120
Name:
Descr1: 1021 Didrikson Way
Descr2: Laguna Beach, CA 92651
Setup/Setup Descr: slm&rta.ssa / SLM & Real-Time Analyzer
Location: At pallet stacking area on north side of Walmart
Note1: Approx. 10' from operational forklift
Note2: 70F, 29.43 in Hg, 27% Humid., 4 mph wind, partly cloudy

Overall Any Data
Start Time: 18-May-2011 17:21:20
Elapsed Time: 00:04:00.7

	A Weight	C Weight	Flat
Leq:	74.4 dBA	80.5 dBC	81.0 dBF
SEL:	98.2 dBA	104.3 dBC	104.8 dBF
Peak:	108.4 dBA	109.1 dBC	109.1 dBF
	18-May-2011 17:24:51	18-May-2011 17:24:44	18-May-2011 17:24:48
Lmax (slow):	87.9 dBA	90.9 dBC	91.0 dBF
	18-May-2011 17:24:49	18-May-2011 17:24:49	18-May-2011 17:24:49
Lmin (slow):	62.8 dBA	68.6 dBC	69.7 dBF
	18-May-2011 17:21:34	18-May-2011 17:21:33	18-May-2011 17:21:33
Lmax (fast):	91.7 dBA	93.9 dBC	94.0 dBF
	18-May-2011 17:24:48	18-May-2011 17:24:48	18-May-2011 17:24:48
Lmin (fast):	59.2 dBA	67.1 dBC	68.2 dBF
	18-May-2011 17:21:28	18-May-2011 17:21:30	18-May-2011 17:21:30
Lmax (impulse):	94.3 dBA	96.2 dBC	96.3 dBF
	18-May-2011 17:24:51	18-May-2011 17:24:44	18-May-2011 17:24:48
Lmin (impulse):	63.1 dBA	69.1 dBC	70.4 dBF
	18-May-2011 17:23:23	18-May-2011 17:21:33	18-May-2011 17:21:33

Spectra

Date	Time	Run Time
18-May-2011	17:21:20	00:04:00.7

Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1	Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1
12.5	63.2		76.2		39.0		630	67.7		84.8		45.8	
16.0	60.8	66.2	73.2	78.3	41.6	45.6	800	64.6		83.9		47.6	
20.0	59.6		67.5		41.5		1000	63.1	68.6	82.1	86.9	46.7	52.4
25.0	62.7		70.0		44.6		1250	63.6		79.1		48.4	
31.5	67.6	72.5	68.8	73.9	46.6	51.1	1600	63.8		79.9		48.8	
40.0	70.0		68.5		47.3		2000	61.7	66.9	81.9	84.9	46.3	51.4
50.0	70.4		68.1		48.0		2500	60.1		77.6		42.6	
63.0	71.6	76.2	83.2	86.2	51.8	55.4	3150	63.4		76.7		41.0	
80.0	72.1		83.1		51.2		4000	53.5	64.2	73.4	79.7	36.6	43.3
100	68.5		73.7		51.0		5000	53.5		74.0		36.4	
125	68.7	73.9	77.6	82.2	50.3	54.9	6300	49.8		69.2		32.9	
160	70.1		79.2		48.9		8000	47.2	52.2	66.0	71.2	30.3	35.3
200	68.1		77.5		51.5		10000	42.4		59.4		25.8	
250	63.4	69.9	73.7	80.0	46.3	53.3	12500	39.5		57.8		24.0	
315	60.2		73.2		45.0		16000	34.8	41.1	52.6	59.4	23.0	27.7
400	65.6		78.8		48.7		20000	30.1		48.9		21.3	
500	69.1	72.5	85.1	88.5	48.5	52.6							

Ln Start Level: 15 dB

L1.00	0.0 dBA	L50.00	0.0 dBA	L95.00	0.0 dBA
L5.00	0.0 dBA	L90.00	0.0 dBA	L99.00	0.0 dBA

Detector: Slow
Weighting: A
SPL Exceedance Level 1: 85.0 dB Exceeded: 1 times
SPL Exceedance level 2: 120 dB Exceeded: 0 times
Peak-1 Exceedance Level: 105 dB Exceeded: 4 times
Peak-2 Exceedance Level: 100 dB Exceeded: 4 times
Hysteresis: 2
Overloaded: 0 time(s)
Paused: 0 times for 00:00:00.0

File Translated: V:\Vista Env\2010\10022-Fresno Walmart\Noise Measurements\LD\10.slmdl
Model/Serial Number: 824 / A3176

Current Any Data
Start Time: 18-May-2011 17:21:20
Elapsed Time: 00:04:00.7

	A Weight	C Weight	Flat
Leq:	74.4 dBA	80.5 dBC	81.0 dBF
SEL:	98.2 dBA	104.3 dBC	104.8 dBF
Peak:	108.4 dBA	109.1 dBC	109.1 dBF
	18-May-2011 17:24:51	18-May-2011 17:24:44	18-May-2011 17:24:48
Lmax (slow):	87.9 dBA	90.9 dBC	91.0 dBF
	18-May-2011 17:24:49	18-May-2011 17:24:49	18-May-2011 17:24:49
Lmin (slow):	62.8 dBA	68.6 dBC	69.7 dBF
	18-May-2011 17:21:34	18-May-2011 17:21:33	18-May-2011 17:21:33
Lmax (fast):	91.7 dBA	93.9 dBC	94.0 dBF
	18-May-2011 17:24:48	18-May-2011 17:24:48	18-May-2011 17:24:48
Lmin (fast):	59.2 dBA	67.1 dBC	68.2 dBF
	18-May-2011 17:21:28	18-May-2011 17:21:30	18-May-2011 17:21:30
Lmax (impulse):	94.3 dBA	96.2 dBC	96.3 dBF
	18-May-2011 17:24:51	18-May-2011 17:24:44	18-May-2011 17:24:48
Lmin (impulse):	63.1 dBA	69.1 dBC	70.4 dBF
	18-May-2011 17:23:23	18-May-2011 17:21:33	18-May-2011 17:21:33

Calibrated: 18-May-2011 13:09:02 Offset: -48.2 dB
Checked: 19-May-2011 06:46:08 Level: 113.9 dB
Calibrator not set Level: 114.0 dB
Cal Records Count: 0

Interval Records: Disabled Number Interval Records: 0
History Records: Disabled Number History Records: 0
Run/Stop Records: Number Run/Stop Records: 2