September 20, 2022

Ms. Terri Miller
MILLERS LANDING AT THE LAKE, INC.
27242 Mira Flores
Mission Viejo, California 92692

RE: Millers Landing at the Lake Focused Noise Analysis
Project No. 19533

Dear Ms. Miller:

Ganddini Group, Inc. is pleased to provide this Focused Noise Analysis for the Millers Landing at the Lake project. The 0.92-acre project site is located at 179, 185, and 199 South State Highway 173 in the Lake Arrowhead community of unincorporated County of San Bernardino, California. The project site is currently developed with nursery and retail uses. A project location map, showing the project's location, is provided on Figure 1.

This noise study summarizes our methodology, analysis, and findings. Although this is a technical report, effort has been made to write the report clearly and concisely. To assist the reader with technical terms related to noise analysis, a list of common acronyms is provided in Appendix A and a glossary is provided in Appendix B.

PROJECT DESCRIPTION

The proposed project involves a conditional use permit to allow use of the property as a wedding/events venue, including conversion of two existing retail buildings totaling 2,377 square feet into bride and groom cabins, and conversion of an existing 2,160 square foot barn into a banquet/reception hall with seating for approximately 90 people. The project proposes vehicular access to South State Highway 173 via three driveways. The project site plan is shown on Figure 2.

Nearly all wedding and events are expected to occur on Fridays, Saturdays, and Sundays, though weekday events are not prohibited. The project applicant estimates a total of 54 events throughout the year, or approximately 2 events per week on average, based on the following breakdown:

- January – April: Very slow due to weather. Estimated 2 events total.
- May – October: Expected busy season. Estimated 48 events total (2 per week on average).
- November – December: Very slow due to holidays/weather. Estimated 4 events total.

The event hours vary by customer, with most events projected to be from 4:00 PM to 11:00 PM. Music will be shut down at 10:00 PM with the following hour being used for cleanup. There will be four employees (property owners including husband, wife, and two daughters) for the venue. The proposed development will contract out services such as catering, bar service, flowers, DJ'ing, bussing, and cleaning services. The contract service would be arriving during the day for setup most likely in vans or SUV's.

The project site plan is shown on Figure 2.

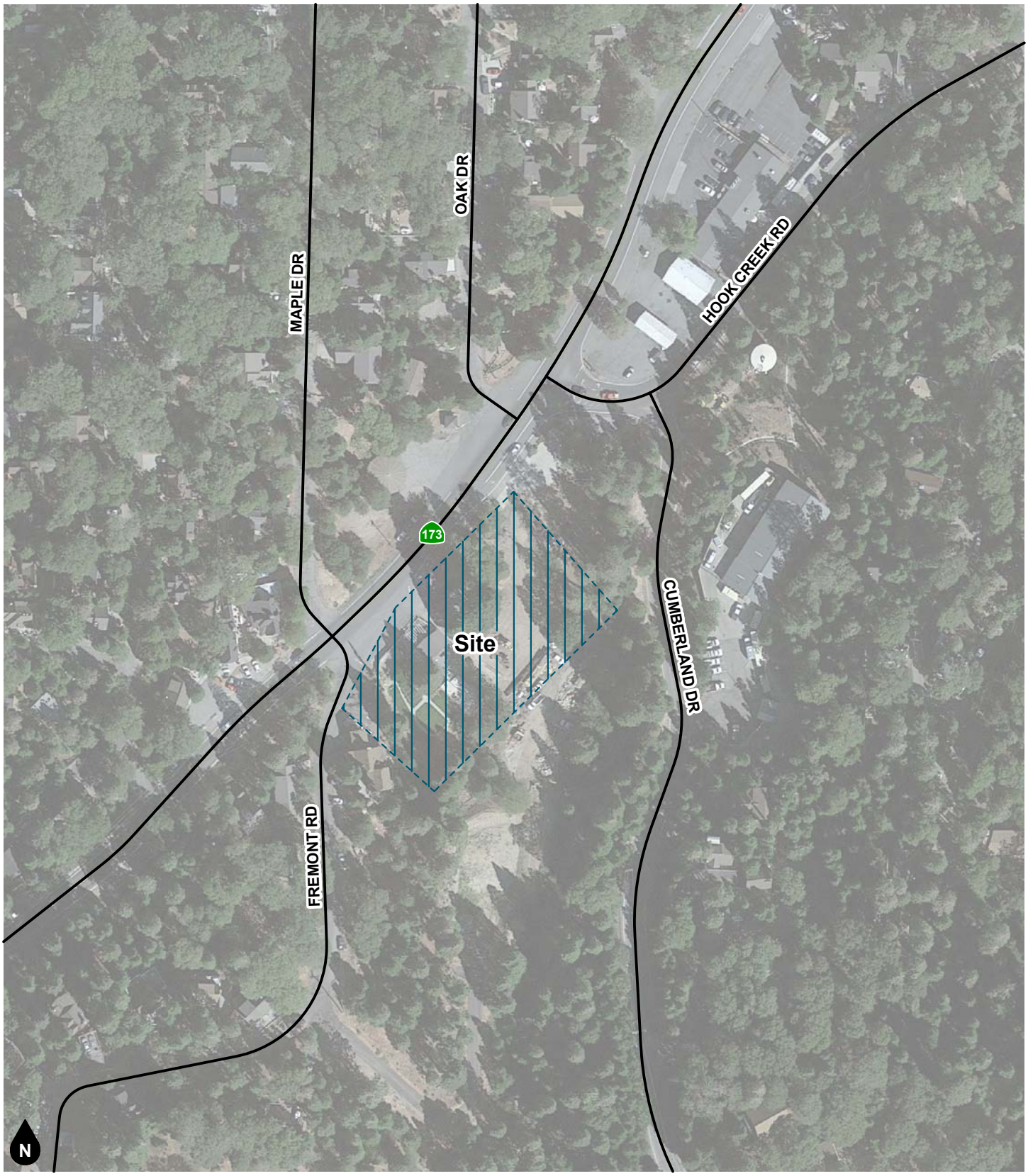


Figure 1
Project Location Map

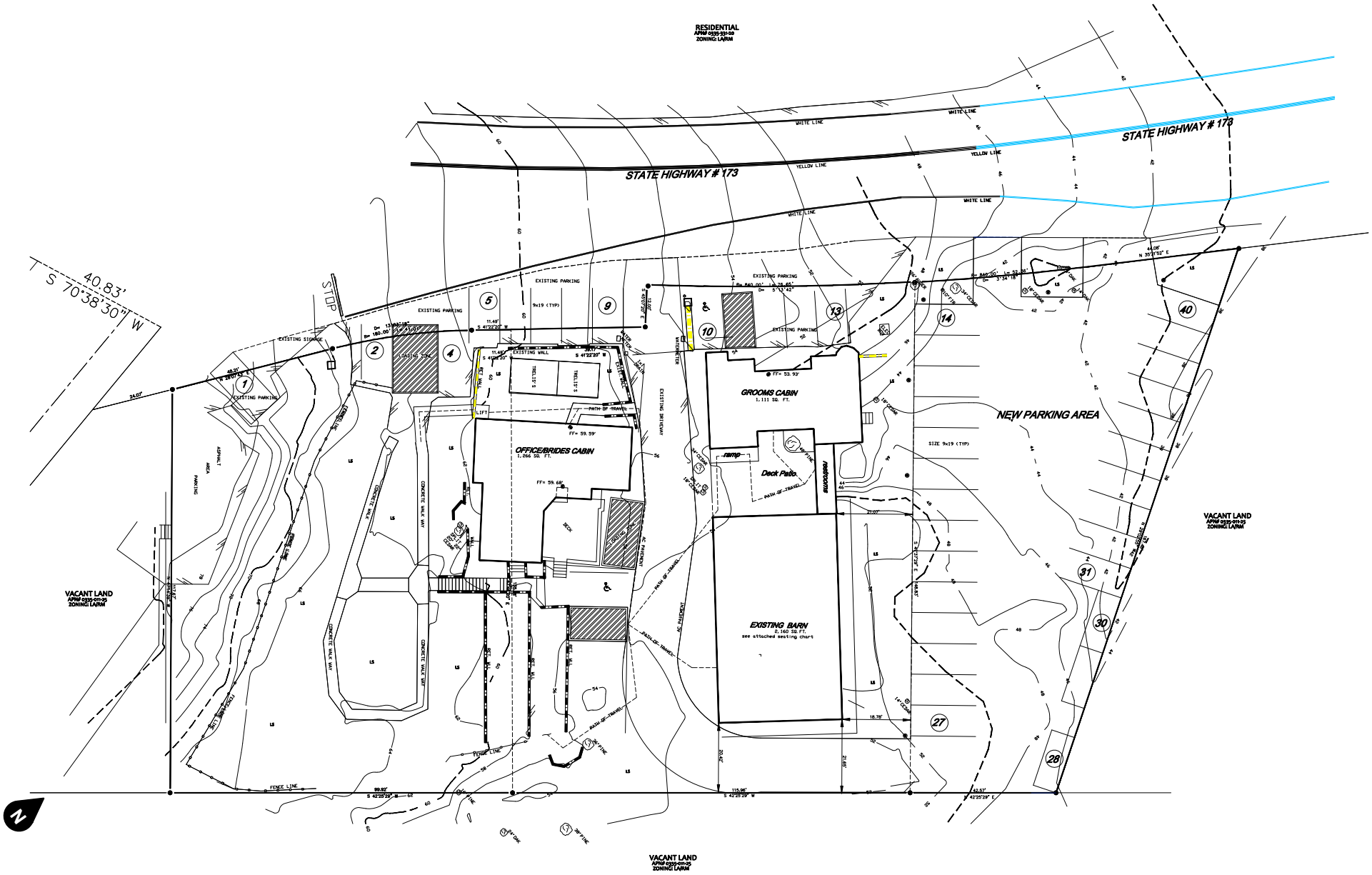


Figure 2
Site Plan

EXISTING SETTING

Existing Land Uses in the Project Vicinity

The project site is bordered by Highway 173 and a commercial use to the north, single-family residential and vacant land to the south, vacant land to the east, and Fremont Road and Highway 173 to the west of the project site.

The State of California defines sensitive receptors as those land uses that require serenity or are otherwise adversely affected by noise events or conditions. Schools, libraries, churches, hospitals, single and multiple-family residential, including transient lodging, motels and hotel uses make up the majority of these areas. Sensitive land uses that may be affected by project noise include the existing single-family residential uses with property lines located adjacent to the south (along Fremont Road), 93 feet to the northwest (at the northwest corner of the intersection of Highway 173 and Maple Drive), 105 feet to the northwest (along Oak Drive), and 150 feet to the southeast (along Cumberland Drive) of the project site.

Measured Ambient Noise Levels

An American National Standards Institute (ANSI Section SI.4 2014, Class 1) Larson Davis model LxT sound level meter was used to document existing ambient noise levels. In order to document existing ambient noise levels in the project area, four (4) 15-minute daytime noise measurements were taken between 5:30 PM and 7:09 PM on September 10, 2022. Field worksheets and noise measurement output data are included in Appendix C.

As shown on Figure 3, existing ambient noise measurements were taken at the following locations:

- NM1: Noise measurement was taken near the residential use located to the southeast of the project site along Cumberland Drive (149 Cumberland Drive, Lake Arrowhead). The noise meter was placed along the western side of Cumberland Drive in close proximity to the single-family residential use.

- NM2: Noise measurement was taken near the residential use located adjacent to the south of the project site along Fremont Road (107 Fremont Road, Lake Arrowhead). The noise meter was placed near the northeastern property line of the single-family residence just south of Miller's Landing and Highway 173 and east of Fremont Road.

- NM3: Noise measurement was taken near the residential use located to the northwest of the project site at the northwestern corner of the intersection of Maple Drive and Highway 173 (178 Maple Drive, Lake Arrowhead). The noise meter was placed near the eastern property line of the single-family residence just west of Maple Drive.

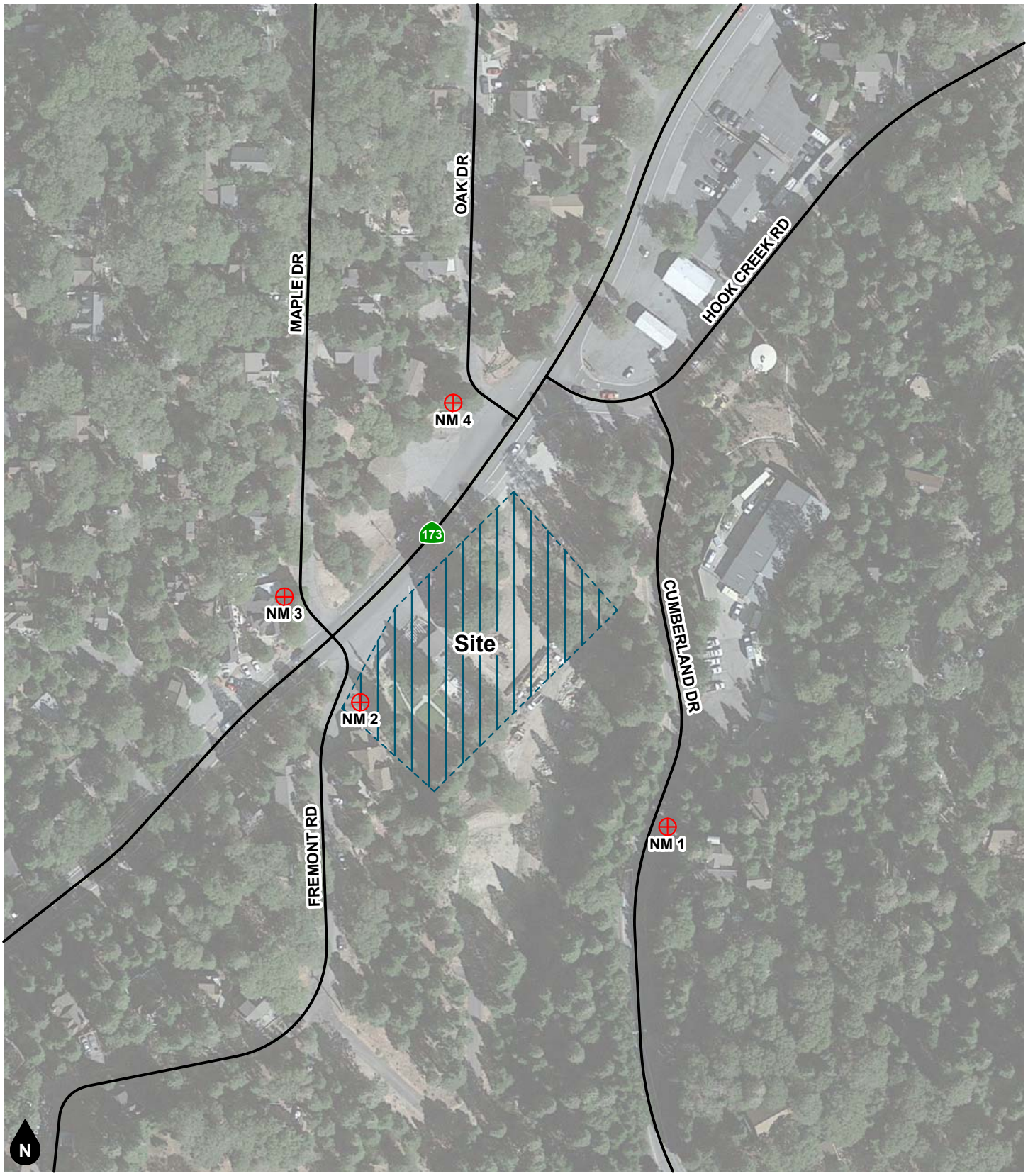
- NM4: Noise measurement was taken near the residential use located to the northwest of the project site along Oak Drive (220 Oak Drive, Lake Arrowhead). The noise meter was placed south of the single-family residence on the western side of Oak Drive.

Table 1 provides a summary of the short-term ambient noise data. Short-term ambient noise levels were measured between 55.9 and 64.6 dBA L_{eq}. The dominant noise sources were from vehicles traveling along Cumberland Drive, Highway 173, and other surrounding roadways.

Table 1
Summary of Ambient Noise Measurements in Project Vicinity (dBA)

Daytime								
Site Location	Time Started	Leq	Lmax	Lmin	L(2)	L(8)	L(25)	L(50)
NM1	5:30 PM	55.9	75.6	43.3	65.7	56.9	51.9	49.8
NM2	6:03 PM	59.9	77.3	44.6	66.3	63.8	60.1	55.2
NM3	6:28 PM	58.7	73.3	35.7	66.6	63.5	59.3	53.9
NM4	6:54 PM	64.6	81.7	36.4	75.7	67.8	62.1	55.4

Notes:
(1) See Figure 3 for noise measurement locations. Each noise measurement was performed over a 15-minute duration.
(2) Noise measurements performed on September 10, 2022.



Legend

NM 1 Noise Measurement Location

Figure 3
Noise Measurement Location Map

APPLICABLE STANDARDS

County of San Bernardino General Plan[1]

The County of San Bernardino Countywide Plan (Policy Plan) serves as the County's General Plan and was adopted in October 2020. The County's Policy Plan's Hazards Element provides goals and policies that are intended to protect life, property, and commerce from impacts associated with natural hazards, human-generated hazards, and increased risk due to climate change. The noise related goals and policies from the Hazards Element that are applicable to the proposed project are presented below:

Goal HZ-2 Human-generated Hazards. People and the natural environment protected from exposure to hazardous materials, excessive noise, and other human-generated hazards.

Policies

Policy HZ-2.7 Truck delivery areas. We encourage truck delivery areas to be located away from residential properties and require associated noise impacts to be mitigated.

Policy HZ-2.8 Proximity to noise generating uses. We limit or restrict new noise sensitive land uses in proximity to existing conforming noise generating uses and planned industrial areas.

Policy HZ-2.9 Control sound at the source. We prioritize noise mitigation measures that control sound at the source before buffers, sound walls, and other perimeter measures.

County of San Bernardino Development Code[2]

Section 83.01.080 of the County of San Bernardino Development Code establishes noise criteria not to be exceeded at the property line of adjacent land uses. These criteria would apply to on-site operational noise generated by the project. Nearby residential land uses may be affected by project-generated operational noise. Sections of the code applicable to the proposed project are presented below.

Noise Standards for Stationary Noise Sources

Table 2, Noise Standards for Stationary Noise Sources, describes the noise standard for emanations from a stationary noise source, as it affects adjacent properties. Stationary noise sources associated with the proposed project may impact nearby residential land uses. As shown in Table 2, the base exterior noise level standards for residential land uses are 55 dBA L_{eq} during daytime hours and 45 dBA during nighttime hours. As described in Table 2, other criteria apply depending on the duration of the noise event. For example, the maximum event noise level standard for impacts to the adjacent residential land uses is 75 dBA L_{eq} during daytime hours and 65 dBA during nighttime hours. Typically, if the 30-minute L_{eq} is not exceeded the other shorter criteria, with the exception of the L_{max}, would not likely be exceeded.

Noise Standards for Adjacent Mobile Noise Sources

The County of San Bernardino Development Code also sets forth interior and exterior noise level standards for transportation noise impacts (see Table 3). The noise level criteria of 45 dBA CNEL for interior noise and the 65 dBA CNEL apply to the nearby existing residential buildings.

[1] https://countywideplan.com/policy-plan/

[2] https://codelibrary.amlegal.com/codes/sanbernardino/latest/sanberncty_ca/0-0-0-169172#JD_83.01.080

Noise Standards for Construction Noise

Temporary construction, maintenance, repair, and demolition activities between 7:00 AM and 7:00 PM, except Sundays and Federal holidays are exempt from Section 83.01.080(g)(3) of the San Bernardino Development Code.

Table 2
County of San Bernardino Noise Standards for Stationary Noise Sources

Affected Land Uses (Receiving Noise)	7:00 AM to 10:00 PM dBA L_{eq}	10:00 PM to 7:00 AM dBA L_{eq}
Residential	55	45
Professional Services	55	55
Other Commercial	60	60
Industrial	70	70

Noise limit categories. No person shall operate or cause to be operated a source of sound at a location or allow the creation of noise on property owned, leased, occupied, or otherwise controlled by the person, which causes the noise level, when measured on another property, either incorporated or unincorporated, to exceed any one of the following:

(A) The noise standard for the receiving land use as specified in Subsection B (Noise-impacted areas), above, for a cumulative period of more than 30 minutes in any hour.

(B) The noise standard plus 5 dB(A) for a cumulative period of more than 15 minutes in any hour.

(C) The noise standard plus 10 dB(A) for a cumulative period of more than five minutes in any hour.

(D) The noise standard plus 15 dB(A) for a cumulative period of more than one minute in any hour.

(E) The noise standard plus 20 dB(A) for any period of time.

If the measured ambient level exceeds any of the first four noise limit categories, the allowable noise exposure standard shall be increased to reflect the ambient noise level. If 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.

Source: County of San Bernardino Development Code, Development Code Table 83-2.

Table 3
County of San Bernardino Noise Standards for Mobile Noise Sources

Land Use		L_{dn} (or CNEL) dB(A)	
Category	Type	Interior[1]	Exterior[2]
Residential	Single and multi-family, duplex, mobile homes	45	60[3]
Commercial	Hotel, motel, transient housing	45	60[3]
	Commercial retail, bank, restaurant	50	n/a
	Office building, research and development, professional offices	45	65
	Amphitheater, concert hall, auditorium, movie theater	45	n/a
Institutional/Public	Hospital, nursing home, school classroom, religious institution, library	45	65
Open Space	Park	n/a	65

Notes:

Source: County of San Bernardino Development Code, Development Code Table 83-3.

(1) The indoor environment shall exclude bathrooms, kitchens, toilets, closets and corridors.

(2) The outdoor environment shall be limited to:

Hospital/office building patios
Hotel and motel recreation areas
Mobile home parks
Multi-family private patios or balconies
Park picnic areas
Private yard of single-family dwellings
School playgrounds

(3) An exterior noise level of up to 65 dB(A) (or CNEL) shall be allowed provided exterior noise levels have been substantially mitigated through a reasonable application of the best available noise reduction technology, and interior noise exposure does not exceed 45 dB(A) (or CNEL) with windows and doors closed. Requiring that windows and doors remain closed to achieve an acceptable interior noise level shall necessitate the use of air conditioning or mechanical ventilation.

ANALYTICAL METHODOLOGY AND MODEL PARAMETERS

Construction Noise Modeling

Construction noise associated with the proposed project was calculated at the sensitive receptor locations, utilizing methodology presented in the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (2018) together with several key construction parameters including: distance to each sensitive receiver, equipment usage, percent usage factor, and baseline parameters for the project site. The equipment used to calculate the construction noise levels for each phase were estimated based on assumptions due to the minimal construction related activities anticipated for the proposed project. For construction noise purposes, the distance measured from the project site to sensitive receptors was assumed to be the acoustical center of the project site to the property line of residential properties with existing residential buildings. Sound emission levels associated with typical construction equipment as well as typical usage factors provided in Table 4 were utilized for modeling purposes. Construction noise worksheets are provided in Appendix D.

Federal Highway Administration (FHWA) Traffic Noise Prediction Model

The roadway noise level increases from project generated vehicular traffic were modeled utilizing a computer program that replicates the FHWA Traffic Noise Prediction Model FHWA-RD-77-108.

The FHWA Traffic Noise Prediction Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). In California the national REMELs are substituted with the California Vehicle Noise (Calveno) Emissions Levels.[3] Adjustments are then made to the REMEL to account for: total average daily traffic volumes, roadway classification (i.e., collector, secondary, major or arterial), the roadway active width (i.e., distance between the center of the outermost travel lanes on each side of the roadway), travel speed, truck mix (i.e., percentage of automobiles, medium trucks, and heavy trucks in the traffic volume), roadway grade and site conditions (hard or soft ground surface relating to the absorption of the ground, pavement, or landscaping). Research conducted by Caltrans identifies that the use of soft site conditions is appropriate for the application of the FHWA traffic noise prediction model.[4] Therefore, surfaces adjacent to all modeled roadways were assumed to have a "soft site". Possible reductions in noise levels due to intervening topography and buildings were not accounted for in this analysis.

Project average daily trips and vehicle mix were obtained from the trip generation provided in the Miller's Landing at the Lake Transportation Screening Analysis (Ganddini Group July 8, 2022). Existing average daily vehicle traffic and existing vehicle mix for Highway 173 was obtained from Caltrans.[5] Existing Plus Project vehicle mixes were calculated by adding the proposed project trips to existing conditions. FHWA spreadsheets are included in Appendix E.

[3] California Department of Transportation Environmental Program, Office of Environmental Engineering. Use of California Vehicle Noise Reference Energy Mean Emission Levels (Calveno REMELs) in FHWA Highway Traffic Noise Prediction. September 1995. TAN 95-03.

[4] California Department of Transportation. Traffic Noise Attenuation as a Function of Ground and Vegetation Final Report. June 1995. FHWA/CA/TL-95/23.

[5] Existing ADT for Highway 173 (LAKE ARROWHEAD, JCT. RTE. 189 AT ARROWHEAD VILLAGE ROAD) from Caltrans 2020 - Truck AADT obtained at https://dot.ca.gov/programs/traffic-operations/census. Existing vehicle mix was calculated at 90% Autos, 8.1% medium trucks, and 1.9% heavy trucks.

Table 4 (1 of 2)
CA/T Equipment Noise Emissions and Acoustical Usage Factor Database

Equipment Description	Impact Device?	Acoustical Use Factor (%)	Spec. Lmax @ 50ft (dBA, slow)	Actual Measured Lmax @ 50ft (dBA, slow)	No. of Actual Data Samples (Count)
All Other Equipment > 5 HP	No	50	85	-N/A-	0
Auger Drill Rig	No	20	85	84	36
Backhoe	No	40	80	78	372
Bar Bender	No	20	80	-N/A-	0
Blasting	Yes	-N/A-	94	-N/A-	0
Boring Jack Power Unit	No	50	80	83	1
Chain Saw	No	20	85	84	46
Clam Shovel (dropping)	Yes	20	93	87	4
Compactor (ground)	No	20	80	83	57
Compressor (air)	No	40	80	78	18
Concrete Batch Plant	No	15	83	-N/A-	0
Concrete Mixer Truck	No	40	85	79	40
Concrete Pump Truck	No	20	82	81	30
Concrete Saw	No	20	90	90	55
Crane	No	16	85	81	405
Dozer	No	40	85	82	55
Drill Rig Truck	No	20	84	79	22
Drum Mixer	No	50	80	80	1
Dump Truck	No	40	84	76	31
Excavator	No	40	85	81	170
Flat Bed Truck	No	40	84	74	4
Forklift[2,3]	No	50	n/a	61	n/a
Front End Loader	No	40	80	79	96
Generator	No	50	82	81	19
Generator (<25KVA, VMS signs)	No	50	70	73	74
Gradall	No	40	85	83	70
Grader	No	40	85	-N/A-	0
Grapple (on backhoe)	No	40	85	87	1
Horizontal Boring Hydr. Jack	No	25	80	82	6
Hydra Break Ram	Yes	10	90	-N/A-	0
Impact Pile Driver	Yes	20	95	101	11
Jackhammer	Yes	20	85	89	133
Man Lift	No	20	85	75	23
Mounted Impact hammer (hoe ram)	Yes	20	90	90	212
Pavement Scarafier	No	20	85	90	2
Paver	No	50	85	77	9
Pickup Truck	No	50	85	77	9
Paving Equipment	No	50	85	77	9
Pneumatic Tools	No	50	85	85	90

Table 4 (2 of 2)
CA/T Equipment Noise Emissions and Acoustical Usage Factor Database

Equipment Description	Impact Device?	Acoustical Use Factor (%)	Spec. Lmax @ 50ft (dBA, slow)	Actual Measured Lmax @ 50ft (dBA, slow)	No. of Actual Data Samples (Count)
Pumps	No	50	77	81	17
Refrigerator Unit	No	100	82	73	3
Rivit Buster/chipping gun	Yes	20	85	79	19
Rock Drill	No	20	85	81	3
Roller	No	20	85	80	16
Sand Blasting (Single Nozzle)	No	20	85	96	9
Scraper	No	40	85	84	12
Shears (on backhoe)	No	40	85	96	5
Slurry Plant	No	100	78	78	1
Slurry Trenching Machine	No	50	82	80	75
Soil Mix Drill Rig	No	50	80	-N/A-	0
Tractor	No	40	84	-N/A-	0
Vacuum Excavator (Vac-truck)	No	40	85	85	149
Vacuum Street Sweeper	No	10	80	82	19
Ventilation Fan	No	100	85	79	13
Vibrating Hopper	No	50	85	87	1
Vibratory Concrete Mixer	No	20	80	80	1
Vibratory Pile Driver	No	20	95	101	44
Warning Horn	No	5	85	83	12
Welder/Torch	No	40	73	74	5

Notes:

(1) Source: FHWA Roadway Construction Noise Model User's Guide January 2006.

(2) Warehouse & Forklift Noise Exposure - NoiseTesting.info Carl Stautins, November 4, 2014 http://www.noisetesting.info/blog/carl-strautins/page-3/

(3) Data provided Leq as measured at the operator. Sound Level at 50 feet is calculated using Inverse Square Law.

DISCUSSION AND RECOMMENDATIONS

Impacts Related to Construction Noise

The approximately 4,537 square feet of wedding venue structures are existing and will be renovated for use by the project. The project consists only of repurposing existing buildings and does not include construction of any new additional structures on the site. As stated by the project applicant, the renovations to the existing structures began back in early September 2020 with only the addition of fire sprinklers left to complete the building renovations. In addition, the parking lot and associated driveways for the proposed wedding venue are also already existing on the site; however, they are to be re-striped. Therefore, construction associated with the proposed project is minimal and includes only building renovation (addition of fire sprinklers) and architectural coating (parking lot striping). Although construction activities are minimal and would not be anticipated to exceed standards, to be conservative, potential construction noise levels have been modeled and provided below.

Construction noise varies depending on the construction process, type of equipment involved, location of the construction site with respect to sensitive receptors, the schedule proposed to carry out each task (e.g., hours and days of the week) and the duration of the construction work. To provide a conservative scenario, it was assumed that building renovation and architectural coating activities would occur simultaneously.[6] In addition, the construction equipment utilized in the modeling was estimated based on the construction activities that are to be completed by the proposed project. The existing residential uses located to the south, southeast, and northwest of the project site may be affected by short-term noise impacts associated with construction noise.

Construction noise associated with the proposed project was calculated utilizing methodology presented in the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (2018) together with several key construction parameters including: distance to each sensitive receiver, equipment usage, percent usage factor, and baseline parameters for the project site. Distances to receptors were based on the acoustical center of the construction activity. Construction noise levels were calculated for each phase. Anticipated noise levels during each construction phase are presented in Table 5. Worksheets for each phase are included as Appendix D.

Modeled unmitigated construction noise levels reach up to 73 dBA L_{eq} at the nearest residential property line to the south (107 Fremont Road, Lake Arrowhead), up to 67 dBA L_{eq} at the nearest residential property line to the southeast (149 Cumberland Drive, Lake Arrowhead), up to 71 dBA L_{eq} at the nearest residential property line to the northwest (178 Maple Drive, Lake Arrowhead), and up to 68 dBA L_{eq} at the nearest residential property line to the northwest (220 Oak Drive, Lake Arrowhead) of the project site.

Construction noise sources are regulated within Section 83.01.080(g)(3) of the County of San Bernardino's Development Code which prohibits construction activities other than between the hours of 7:00 AM and 7:00 PM, except Sundays and Federal holidays. Therefore, the County of San Bernardino has not adopted a numerical threshold that identifies what a substantial increase would be. For purposes of this analysis Federal Transit Administration (FTA), daytime construction noise levels should not exceed 80 dBA L_{eq} for an 8-hour period at residential uses and 85 dBA L_{eq} for an 8-hour period at commercial uses.

Project construction will not occur outside of the hours outlined as "exempt" in County of San Bernardino Development Code Section 83.01.080(g)(3) and will not exceed the FTA construction thresholds at existing

[6] It should be noted that, building renovation activities would occur within the existing project site buildings; however, reduction from building attenuation was not accounted for in this analysis.

nearby residential uses. Therefore, construction of the proposed project will not result in or generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance.

Impacts would be less than significant and no mitigation is required.

Table 5
Construction Noise Levels (dBA L_{eq})

Phase	Receptor Location	Construction Noise Levels (dBA Leq)[2]
Building Renovation/Architectural Coating	Single-family Residential Use to South (107 Fremont Road, Lake Arrowhead)	73.4
	Single-family Residential Use to Southeast (149 Cumberland Drive, Lake Arrowhead)	67.2
	Single-family Residential Use to Northwest (178 Maple Drive, Lake Arrowhead)	71.1
	Single-family Residential Use to Northwest (220 Oak Drive, Lake Arrowhead)	68.4

Notes:

(1) Per measured existing ambient noise levels (see Table 1). NM1 was chosen to represent noise levels at the nearest residential property line of the single-family residential uses to the southeast, NM2 was chosen to represent noise levels at the nearest residential property line of the single-family residential uses to the south, NM3 was chosen to represent the nearest residential property line of the single-family residential uses to the northwest (along Maple Drive), and NM4 was chosen to represent noise levels at the nearest residential property line of the single-family residential uses to the northwest (along Oak Drive) of the project site.

(2) Construction noise worksheets are provided in Appendix D. To be conservative, it was assumed that all remaining construction activities (i.e., building renovation and architectural coating) would occur simultaneously.

Noise Impacts to Off-Site Receptors Due to Project-Generated Trips

During operation, the proposed project is expected to generate a maximum of approximately 126 average daily trips with 6 trips during the AM peak-hour and 32 trips during the PM peak-hour. A project generated traffic noise level was modeled utilizing the FHWA Traffic Noise Prediction Model - FHWA-RD-77-108. Traffic noise levels were calculated at the right of way from the centerline of the analyzed roadway. The modeling is theoretical and does not take into account any existing barriers, structures, and/or topographical features that may further reduce noise levels. Therefore, the levels are shown for comparative purposes only to show the difference in with and without project conditions. Roadway input parameters including average daily traffic volumes (ADTs), speeds, and vehicle distribution data is shown in Table 6. The potential off-site noise impacts caused by an increase of traffic from operation of the proposed project on the nearby roadways were calculated for the following scenarios:

Existing Year (without Project): This scenario refers to existing year traffic noise conditions and is demonstrated in Table 6.

Existing Year (With Project): This scenario refers to existing year plus project traffic noise conditions and is demonstrated in Table 6.

As shown in Table 7, the modeled Existing traffic noise level along Highway 173 in the vicinity of the project site is 68 dBA CNEL at the right-of-way of the modeled roadway segment; and the modeled Existing Plus Project traffic noise level along Highway 173 in the vicinity of the project site is 68 dBA CNEL at the right-of-way of the modeled roadway segment.

For purposes of this project, increases in ambient noise along affected roadways due to project generated vehicle traffic is considered substantial if they result in an increase of at least 5 dBA CNEL and: (1) the existing noise levels already exceed the applicable mobile source noise standard for the affected sensitive receptors set forth in the County's Development Code; or (2) the project increases noise levels by at least 5 dBA CNEL and raises the ambient noise level from below the applicable standard to above the applicable standard.

Project generated vehicle traffic is anticipated to change the noise by approximately 0.04 dBA CNEL. Therefore, a change in noise level would not be audible and would be considered less than significant; no mitigation is required.

Table 6
Project Average Daily Traffic Volumes and Roadway Parameters

Roadway	Segment	Average Daily Traffic Volume[1]		Posted Travel Speeds (MPH)	Site Conditions
		Existing	Plus Project		
Highway 173	In vicinity of project site	4,000	4,126	40	Soft

Vehicle Distribution (Heavy Mix)[2]			
Motor-Vehicle Type	Daytime % (7 AM-7 PM)	Evening % (7 PM-10 PM)	Night % (10 PM-7 AM)
Automobiles	75.54	14.02	10.43
Medium Trucks	48.00	2.00	50.00
Heavy Trucks	48.00	2.00	50.00

Notes:

(1) Project average daily trips and vehicle mix were obtained from the trip generation provided in the Miller's Landing at the Lake Transportation Screening Analysis (Ganddini Group July 8, 2022). Existing ADT for Highway 173 (LAKE ARROWHEAD, JCT. RTE. 189 AT ARROWHEAD VILLAGE ROAD) from Caltrans 2020 - Truck AADT obtained at https://dot.ca.gov/programs/traffic-operations/census. Existing vehicle mix was calculated at 90% Autos, 8.1% medium trucks, and 1.9% heavy trucks.

(2) Existing vehicle percentages are based on the Riverside County Industrial Hygiene Letter for Traffic Noise.

Table 7
Increase in Existing Noise Levels Along Roadways as a Result of Project (dBA CNEL)

Roadway	Segment	Distance from roadway centerline to right-of-way (feet)[2]	Modeled Noise Levels (dBA CNEL)[1]				
			Existing Without Project at right-of-way	Existing Plus Project at right-of-way	Change in Noise Level	Exceeds Standards[3]	Increase of 5 dB or More?
Highway 173	In vicinity of project site	40	68.22	68.26	0.04	Yes	No

Notes:

(1) Exterior noise levels calculated 5 feet above pad elevation, perpendicular to subject roadway.

(2) Right of way per the County of San Bernardino Policy Plan, Transportation & Mobility Element Table TM-1 (2020).

(3) Per the County of San Bernardino residential exterior noise standards for mobile noise sources of 60 dBA CNEL (see Table 4).

Operational Noise Impacts to the Sensitive Receptors

The proposed project would generate onsite noise from stationary sources such parking lots, amplified music, loading/unloading from vendors, and outdoor event guest conversation. The modeling is theoretical and does not take into account any existing barriers, structures, and/or topographical features that may further reduce noise levels. See Figure 4 for sensitive receptor and operational noise source locations.

Parking Lot Areas

Sources of noise from parking lot areas are primarily from engine and tire noise, slamming of doors, and pedestrians. Instantaneous maximum sound levels generated by a car door slamming, engine starting up and car passbys may be an annoyance to adjacent noise-sensitive receptors. For the purpose of this analysis, parking lot noise levels were calculated utilizing a reference noise level of 41.7 dBA L_{eq} at a distance of 50 feet and the distance to the receptor was based on the approximate activity center of the parking lot.[7]

As shown in Table 8, noise levels generated by the proposed parking lot would reach up to approximately 28 dBA L_{eq} at the property line of the single-family residential use to the south (along Fremont Road), 27 dBA L_{eq} at the property line of the single-family residential use to the southeast (along Cumberland Drive), 28 dBA L_{eq} at the property line of the single-family residential use to the northwest (along Maple Drive), and 29 dBA L_{eq} at the property line of the single-family residential use to the northwest (along Oak Drive).

Per Section 83.01.080 of the County of San Bernardino Development Code, the exterior residential noise level thresholds are 55 dBA L_{eq} during the daytime and 45 dBA L_{eq} during the nighttime. Therefore, as shown in Table 8, intermittent noise generated from the proposed parking lot would not exceed the County's standards. Impacts would be less than significant.

Outdoor Conversation

The proposed project includes outdoor deck/patio areas. It is assumed that, during an event, conversational activities would be taking place by event guests at these locations. Speech noise levels range between 60 to 75 dBA (typical talking to yelling, respectively). To be conservative, it was assumed that the outdoor conversations associated with the proposed events would be that of raised voices (70 dBA L_{eq} at a distance of 3 feet).

As shown in Table 9, noise levels from the outdoor deck/patio areas would reach up to approximately 31 dBA L_{eq} at the property line of the single-family residential use to the south (along Fremont Road), 20 dBA L_{eq} at the property line of the single-family residential use to the southeast (along Cumberland Drive), 27 dBA L_{eq} at the property line of the single-family residential use to the northwest (along Maple Drive), and 23 dBA L_{eq} at the property line of the single-family residential use to the northwest (along Oak Drive).

Per Section 83.01.080 of the County of San Bernardino Development Code, the exterior residential noise level thresholds are 55 dBA L_{eq} during the daytime and 45 dBA L_{eq} during the nighttime. Therefore, as shown in Table 9, proposed outdoor conversation within the deck/patio areas would not exceed the County's exterior residential standards of 55 dBA L_{eq} during the daytime and 45 dBA L_{eq} during the nighttime at the modeled existing sensitive receptors. Impacts would be less than significant.

[7] Parking lot reference noise level as measured by Urban Crossroads in the Cajon Boulevard Warehouse Noise Impact Analysis, County of San Bernardino (March 5, 2018).

Vendor Loading/Unloading

As stated previously, the proposed development will contract out services such as catering, bar service, flowers, DJ'ing, bussing, and cleaning services. The contract service would be arriving during the day for setup most likely in vans or SUV's. It has also been assumed that some of these vendors would need to pick up their equipment which would most likely occur during the cleanup hour of 10:00 PM to 11:00 PM. A sound power level of 80 dBA was utilized to model noise associated with vendor loading/unloading activities, this is equivalent to a noise level of approximately 38 dBA L_{eq} at a distance of 50 feet.[8]

As shown in Table 10, noise levels from vendor loading/unloading activities would reach up to approximately 35 dBA L_{eq} at the property line of the single-family residential use to the south (along Fremont Road), 23 dBA L_{eq} at the property line of the single-family residential use to the southeast (along Cumberland Drive), 32 dBA L_{eq} at the property line of the single-family residential use to the northwest (along Maple Drive), and 26 dBA L_{eq} at the property line of the single-family residential use to the northwest (along Oak Drive).

Per Section 83.01.080 of the County of San Bernardino Development Code, the exterior residential noise level thresholds are 55 dBA L_{eq} during the daytime and 45 dBA L_{eq} during the nighttime. Therefore, as shown in Table 10, vendor loading/unloading activities would not exceed the County's exterior residential standards of 55 dBA L_{eq} during the daytime and 45 dBA L_{eq} during the nighttime at the modeled existing sensitive receptors. Impacts would be less than significant.

Amplified Music

The proposed project is a wedding/event venue and is anticipated to include amplified music. As stated previously, events are anticipated to occur from 4:00 PM to 11:00 PM; however, music will be shut down at 10:00 PM. In addition, as stated by the project applicant, music is to be played within the existing barn and will not occur in any outdoor areas. A noise level of approximately 85 dB at 10 feet is associated with a live band during a typical wedding event.

As shown in Table 11, with incorporation of an approximate 15 dB reduction due to the music taking place inside the barn, noise levels would reach up to approximately 46 dBA L_{eq} at the property line of the single-family residential use to the south (along Fremont Road), 42 dBA L_{eq} at the property line of the single-family residential use to the southeast (along Cumberland Drive), 43 dBA L_{eq} at the property line of the single-family residential use to the northwest (along Maple Drive), and 41 dBA L_{eq} at the property line of the single-family residential use to the northwest (along Oak Drive).

As music will not occur after 10:00 PM, the County's nighttime residential noise standard of 45 dBA L_{eq} (10:00 PM to 7:00 AM) will not be exceeded. Furthermore, as shown in Table 10, with incorporation of an approximate 15 dB reduction, the County's daytime residential noise level standard of 55 dBA L_{eq} (7:00 AM to 10:00 PM) will also not be exceeded. Impacts would be less than significant.

The project is to include the following measures to further reduce noise levels associated with amplified music and ensure compliance with County standards:

1. Barn doors are to remain closed during events and indoor air conditioning and/or mechanical ventilation will be provided in the barn.
2. No outdoor amplification of music is permitted, and music is to be shutdown no later than 10:00 PM.

[8] Source: SoundPLAN reference list for a truck loading general cargo [sound power level (LwA) of 80 dB].

3. If the County receives noise complaints, the owner will hire a professional noise analyst to measure event noise levels using either a Type 1 or Type 2 noise monitor, and to make recommendations to reduce said noise levels if they are in violation of the code. The event operator will be required to submit a letter to County Code Enforcement that lists reduction recommendations as well as evidence of how the proposed project is going to comply with those recommendations.

Summary

Although the majority of the on-site noise sources are instantaneous and intermittent noise that may not occur simultaneously, project operational noise levels were combined to provide a conservative analysis. As shown in Table 12, the cumulative daytime operational noise levels are estimated to reach up to approximately:

- 46 dBA Leq at the property line of the single-family residential use to the south (along Fremont Road);
- 42 dBA Leq at the property line of the single-family residential use to the southeast (along Cumberland Drive);
- 44 dBA Leq at the property line of the single-family residential use to the northwest (along Maple Drive); and
- 42 dBA Leq at the property line of the single-family residential use to the northwest (along Oak Drive).

Nighttime operational noise levels may reach up to approximately:

- 37 dBA Leq at the property line of the single-family residential use to the south (along Fremont Road);
- 29 dBA Leq at the property line of the single-family residential use to the southeast (along Cumberland Drive);
- 34 dBA Leq at the property line of the single-family residential use to the northwest (along Maple Drive); and
- 32 dBA Leq at the property line of the single-family residential use to the northwest (along Oak Drive).

As stated previously, the County's exterior residential noise level thresholds are 55 dBA L_{eq} during the daytime and 45 dBA L_{eq} during the nighttime. Operational noise levels would not exceed the County's daytime or nighttime exterior standards. Furthermore, as shown in Table 1, Short-Term Noise Measurement Summary, existing ambient noise levels were measured at 59.9 dBA L_{eq} and 77.3 dBA L_{max} (NM2) in the vicinity of the single-family residential use to the south (along Fremont Road), 55.9 dBA L_{eq} and 75.6 dBA L_{max} (NM1) in the vicinity of the single-family residential uses to the southeast (along Cumberland Drive), 58.7 dBA L_{eq} and 73.3 dBA L_{max} (NM3) in the vicinity of the single-family residential use to the northwest (along Maple Drive), and 64.6 dBA L_{eq} and 81.7 dBA L_{max} (NM4) in the vicinity of the single-family residential use to the northwest (along Oak Drive). Therefore, project operational noise would also not result in substantially greater noise levels than currently exist in the project vicinity. No significant onsite noise impacts from the on-going operations of the proposed project would occur at the closest sensitive receptors.

Impacts would be less than significant and no mitigation is required.

CONCLUSIONS

Noise impacts associated with construction and operation of the proposed Millers Landing at the Lake project are anticipated to be compliant with the County's Development Code and other applicable noise regulations. The project is to include the following measures to further reduce noise levels and ensure compliance with County standards:

1. Barn doors are to remain closed during events and indoor air conditioning and/or mechanical ventilation will be provided in the barn.

2. No outdoor amplification of music is permitted, and music is to be shutdown no later than 10:00 PM.

3. If the County receives noise complaints, the owner will hire a professional noise analyst to measure event noise levels using either a Type 1 or Type 2 noise monitor, and to make recommendations to reduce said noise levels if they are in violation of the code. The event operator will be required to submit a letter to County Code Enforcement that lists reduction recommendations as well as evidence of how the proposed project is going to comply with those recommendations.

It has been a pleasure to assist you with this project. Should you have any questions or if we can be of further assistance, please do not hesitate to call at (714) 975-3100.

Sincerely,
GANDDINI GROUP, INC.

Catherine Howe, M.S.
Noise & Air Quality Analyst

Table 8
Parking Lot Noise Levels

Receptor	Distance (feet)[1]	Noise Level (dBA Leq)	Exceedance of Standards[2]	
			County Thresholds (day/night)	Exceeds Thresholds (day/night)?
Single-Family Residential to South	236	28.2	55/45	No/No
Single-Family Residential to Southeast	289	26.5	55/45	No/No
Single-Family Residential to Northwest (Maple Drive)	248	27.8	55/45	No/No
Single-Family Residential to Northwest (Oak Drive)	205	29.4	55/45	No/No

Notes:

(1) Distance from the acoustical activity center of the proposed parking lot to the property line of the receptor.

(2) Per Section 83.01.080 of the County of San Bernardino Development Code, the exterior residential noise level thresholds are 55 dBA Leq during the daytime and 45 dBA Leq during the nighttime.

Table 9
Outdoor Patio/Deck Noise Levels

Receptor	Distance (feet)[1]	Noise Level (dBA Leq)	Exceedance of Standards[2]	
			County Thresholds (day/night)	Exceeds Thresholds (day/night)?
Single-Family Residential to South	110	30.9	55/45	No/No
Single-Family Residential to Southeast	302	19.9	55/45	No/No
Single-Family Residential to Northwest (Maple Drive)	163	26.6	55/45	No/No
Single-Family Residential to Northwest (Oak Drive)	239	22.5	55/45	No/No

Notes:

(1) Distance from the acoustical activity center of the nearest proposed outdoor deck/patio area to the property line of the receptor.

(2) Per Section 83.01.080 of the County of San Bernardino Development Code, the exterior residential noise level thresholds are 55 dBA Leq during the daytime and 45 dBA Leq during the nighttime.

Table 10
Vendor Loading/Unloading Noise Levels

Receptor	Distance (feet)[1]	Noise Level (dBA Leq)	Exceedance of Standards[2]	
			County Thresholds (day/night)	Exceeds Thresholds (day/night)?
Single-Family Residential to South	70	35.1	55/45	No/No
Single-Family Residential to Southeast	269	23.4	55/45	No/No
Single-Family Residential to Northwest (Maple Drive)	98	32.2	55/45	No/No
Single-Family Residential to Northwest (Oak Drive)	201	25.9	55/45	No/No

Notes:

(1) Distance from the acoustical activity center of the nearest proposed loading area to the property line of the receptor.

(2) Per Section 83.01.080 of the County of San Bernardino Development Code, the exterior residential noise level thresholds are 55 dBA Leq during the daytime and 45 dBA Leq during the nighttime.

Table 11
Amplified Music Noise Levels

Receptor	Distance (feet)[1]	Noise Level (dBA Leq)	Noise Level with Building Reduction (dBA Leq)[2]	Exceedance of Standards[3,4]	
				County Threshold (day)	Exceeds Threshold (day)?
Single-Family Residential to South	165	60.7	45.7	55	No
Single-Family Residential to Southeast	264	56.5	41.5	55	No
Single-Family Residential to Northwest (Maple Drive)	221	58.1	43.1	55	No
Single-Family Residential to Northwest (Oak Drive)	270	56.4	41.4	55	No

Notes:

(1) Distance from the acoustical activity center of the barn to the property line of the receptor.

(2) The music is to be played inside the existing barn, which, with doors open will provide an approximate 15 dB noise reduction.

(3) Per Section 83.01.080 of the County of San Bernardino Development Code, the daytime exterior residential noise level threshold is 55 dBA Leq.

(4) Music is to be shutdown by 10:00 PM; therefore, the County's exterior residential nighttime threshold of 45 dBA Leq does not apply.

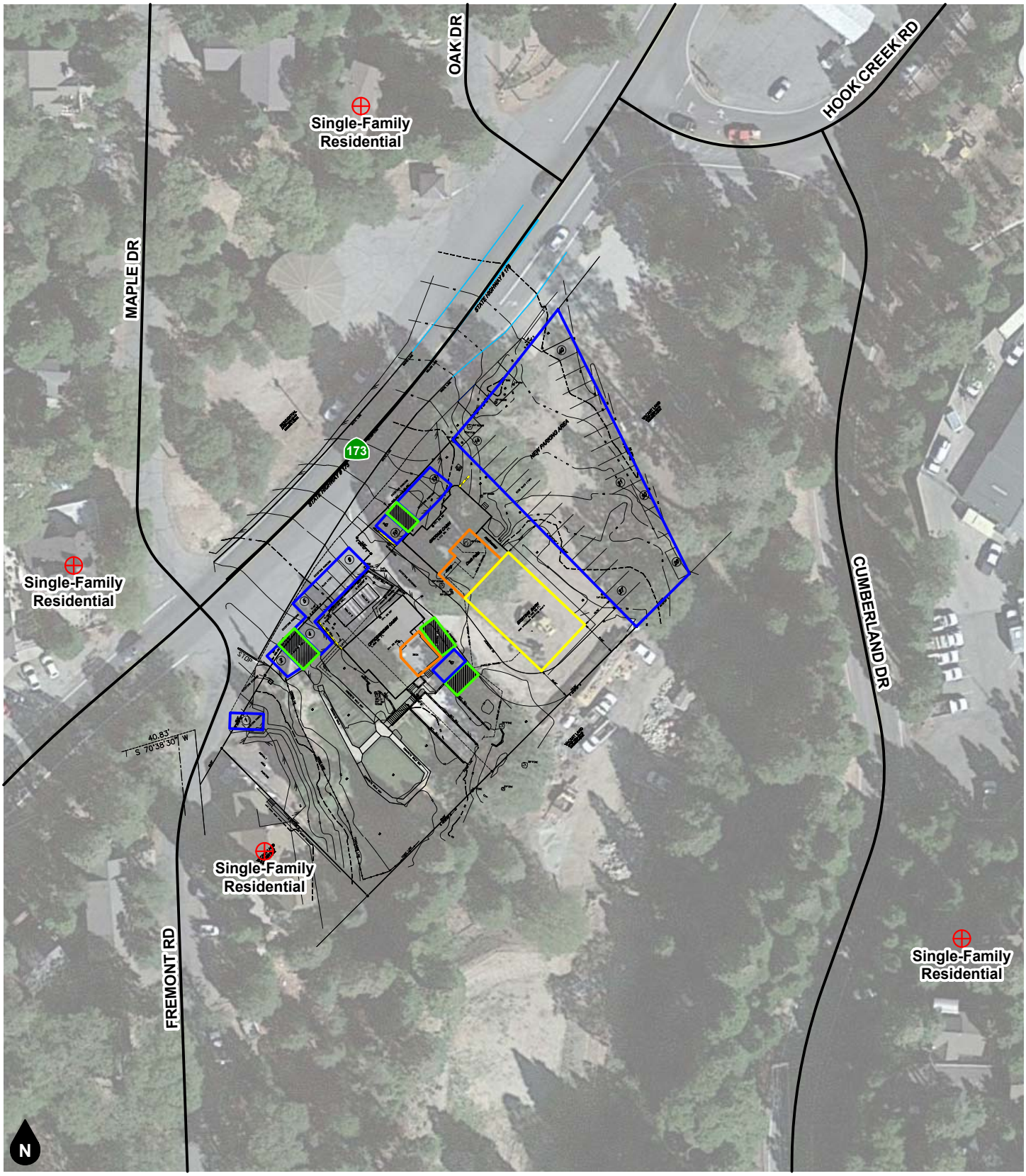
Table 12
Combined Operational Noise Levels at Closest Sensitive Receptors

Receptor	Daytime Noise Level (dBA Leq)	Nighttime Noise Level (dBA Leq)[1]	Exceedance of Standards[2]		
			County Threshold (day)	County Threshold (night)	Exceeds Threshold (day/night)?
Single-Family Residential to South					
Parking Lot Activities	28.2	28.2	55	45	No/No
Outdoor Conversation	30.9	30.9	55	45	No/No
Vendor Loading	35.1	35.1	55	45	No/No
Amplified Music	45.7	-	55	-	No/No
Cumulative Noise Level	46.3	37.1	55	45	No/No
Single-Family Residential to Southeast					
Parking Lot Activities	26.5	26.5	55	45	No/No
Outdoor Conversation	19.9	19.9	55	45	No/No
Vendor Loading	23.4	23.4	55	45	No/No
Amplified Music	41.5	-	55	-	No/No
Cumulative Noise Level	41.7	28.8	55	45	No/No
Single-Family Residential to Northwest (Maple Drive)					
Parking Lot Activities	27.8	27.8	55	45	No/No
Outdoor Conversation	26.6	26.6	55	45	No/No
Vendor Loading	32.2	32.2	55	45	No/No
Amplified Music	43.1	-	55	-	No/No
Cumulative Noise Level	43.6	34.3	55	45	No/No
Single-Family Residential to Northwest (Oak Drive)					
Parking Lot Activities	29.4	29.4	55	45	No/No
Outdoor Conversation	22.5	22.5	55	45	No/No
Vendor Loading	25.9	25.9	55	45	No/No
Amplified Music	41.4	-	55	-	No/No
Cumulative Noise Level	41.8	31.6	55	45	No/No

Notes:

(1) Music is to be shutdown by 10:00 PM; therefore, the County's exterior residential nighttime threshold of 45 dBA Leq does not apply.

(2) Per Section 83.01.080 of the County of San Bernardino Development Code, the exterior residential noise level thresholds are 55 dBA Leq during the daytime and 45 dBA Leq during the nighttime.



Legend
- Parking Lot
- Vendor Loading Area
- Outdoor Deck/Patios
- Barn With Amplified Music
- Sensitive Receptor Locations

Figure 4
Operational Noise Source and Sensitive Receptor Locations

APPENDIX A

LIST OF ACRONYMS

TERMS	DEFINITIONS
ADT	Average Daily Traffic volume
ANSI	American National Standard Institute
APN	Assessor's Parcel Number
Caltrans	California Department of Transportation
Calveno	California Vehicle Noise
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNEL	Community Noise Equivalent Level
D/E/N	Day/Evening/Night
dB	Decibel
dBA or dB(A)	Decibel "A-Weighted"
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
Hz	Hertz
INCE	Institute of Noise Control Engineering
L_{02},L_{08},L_{50},L_{90}	A-weighted Noise Levels at 2 percent, 8 percent, 50 percent, and 90 percent, Respectively, of the time period
DNL	Day-Night Average Noise Level
$L_{eq(x)}$	Equivalent Noise Level for "x" period of Time
L_{max}	Maximum Level of Noise (measured using a sound level meter)
L_{min}	Minimum Level of Noise (measured using a sound level meter)
LOS C	Level of Service C
MPH	Miles Per Hour
NEPA	National Environmental Policy Act
OPR	California Governor's Office of Planning and Research
Peak Hour L_{eq}	Peak Hour Equivalent Sound Level
PPV	Peak Particle Velocity
RCNM	Road Construction Noise Model
RMS	Root Mean Square
SEL	Single Event Level or Sound Exposure Level
SPL	Sound Pressure Level
STC	Sound Transmission Class
VdB	Vibration Velocity Decibels

APPENDIX B

GLOSSARY

Term	Definition
Ambient Noise Level	The all-encompassing noise environment associated with a given environment, at a specified time, usually a composite of sound from many sources, at many directions, near and far, in which usually no particular sound is dominant.
A-Weighted Sound Level, dBA	The sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear.
CNEL	Community Noise Equivalent Level. CNEL is a weighted 24-hour noise level that is obtained by adding five decibels to sound levels in the evening (7:00 PM to 10:00 PM), and by adding ten decibels to sound levels at night (10:00 PM to 7:00 AM). This weighting accounts for the increased human sensitivity to noise during the evening and nighttime hours.
Decibel, dB	A logarithmic unit of noise level measurement that relates the energy of a noise source to that of a constant reference level; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
DNL, Ldn	Day Night Level. The DNL, or Ldn is a weighted 24-hour noise level that is obtained by adding ten decibels to sound levels at night (10:00 PM to 7:00 AM). This weighting accounts for the increased human sensitivity to noise during the nighttime hours.
Equivalent Continuous Noise Level, L_{eq}	A level of steady state sound that in a stated time period, and a stated location, has the same A-weighted sound energy as the time-varying sound.
Fast/Slow Meter Response	The fast and slow meter responses are different settings on a sound level meter. The fast response setting takes a measurement every 100 milliseconds, while a slow setting takes one every second.
Frequency, Hertz	In a function periodic in time, the number of times that the quantity repeats itself in one second (i.e., the number of cycles per second).
L_{02}, L_{08}, L_{50}, L_{90}	The A-weighted noise levels that are equaled or exceeded by a fluctuating sound level, 2 percent, 8 percent, 50 percent, and 90 percent of a stated time period, respectively.
L_{max}, L_{min}	L_{max} is the RMS (root mean squared) maximum level of a noise source or environment measured on a sound level meter, during a designated time interval, using fast meter response. L_{min} is the minimum level.
Offensive/ Offending/ Intrusive Noise	The noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of sound depends on its amplitude, duration, frequency, and time of occurrence, and tonal information content as well as the prevailing ambient noise level.
Root Mean Square (RMS)	A measure of the magnitude of a varying noise source quantity. The name derives from the calculation of the square root of the mean of the squares of the values. It can be calculated from either a series of lone values or a continuous varying function.

APPENDIX C

NOISE MEASUREMENT FIELD WORKSHEETS AND METER OUTPUT

Noise Measurement
Field Data

Project Name: Miller's Landing, Lake Arrowhead. **Date:** September 10, 2022

Project #: 19533

Noise Measurement #: NM1 Run Time: 15 minutes (1 x 15 minutes) **Technician:** Ian Edward Gallagher

Nearest Address or Cross Street: 145 Cunberland Drive, Lake Arrowhead, CA 92352

Site Description (Type of Existing Land Use and any other notable features): Project Site: Area used for catering/entertainment/storage bordered by Hwy 173 to west/north, residential to south, vacant land to east/south/north. Noise Measurement Site: Cumberland Drive to east w/ single-family residential further east, vacant land to west w/ projet site further northwest.

Weather: Overcast, recent rain. Sunset 7:02PM **Settings:** SLOW FAST

Temperature: 63 deg F **Wind:** 4 mph **Humidity:** 83% **Terrain:** Hilly

Start Time: 5:30 PM **End Time:** 5:45 PM **Run Time:**

Leq: 55.9 dB

Lmax 75.6 dB

L2 65.7 dB

L8 56.9 dB

L25 51.9 dB

L50 49.8 dB

Primary Noise Source: Traffic noise from the 10 vehicles passing microphone traveling along Cumberland Drive. Traffic ambiance from other roads.

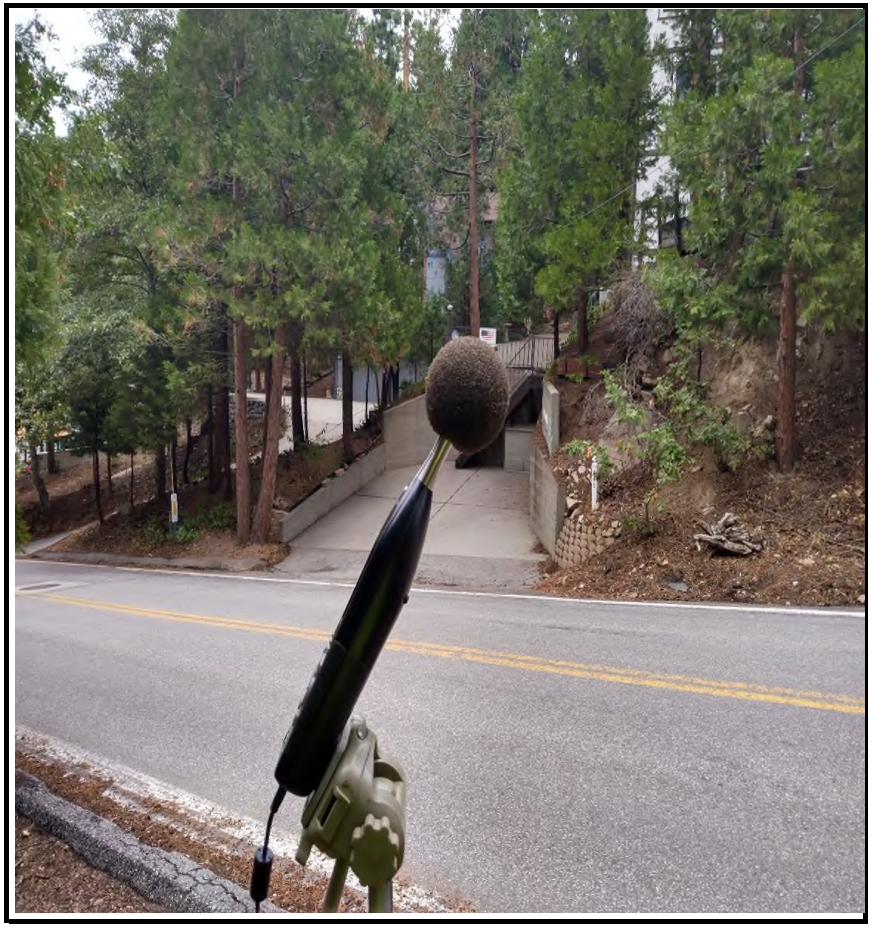
Secondary Noise Sources: Event/party ambiance from Miller's Landing. Leaf rustle from breeze. Occasional distant overhead air traffic. Some residential ambiance. Bird song.

NOISE METER:	SoundTrack LXT Class 1	**CALIBRATOR:**	Larson Davis CA 250
MAKE:	Larson Davis	**MAKE:**	Larson Davis
MODEL:	LXT1	**MODEL:**	CA 250
SERIAL NUMBER:	3099	**SERIAL NUMBER:**	2723
FACTORY CALIBRATION DATE:	11/17/2021	**FACTORY CALIBRATION DATE:**	11/18/2021
FIELD CALIBRATION DATE:	9/10/2022		

Noise Measurement
Field Data

PHOTOS:

Driveway of residence 145 Cumberland Drive, Lake Arrowhead looking WSW across Cumberland Drive towards microphone.



NM1 looking ENE across Cumberland Drive towards driveway of residence 145 Cumberland Drive, Lake Arrowhead.

Summary	
File Name on Meter	LxT_Data.073.s
File Name on PC	LxT_0003099-20220910 173033-LxT_Data.073.ldbin
Serial Number	0003099
Model	SoundTrack LxT®
Firmware Version	2.404
User	Ian Edward Gallagher
Location	NM1 34°15'8.19"N 117°10'24.14"W
Job Description	15 minute noise measurement (1 x 15 minutes)
Note	Ganddini Project 19533 Miller's Landing at the Lake, Lake Arrowhead

Measurement	
Start	2022-09-10 17:30:33
Stop	2022-09-10 17:45:33
Duration	00:15:00.0
Run Time	00:15:00.0
Pause	00:00:00.0
Pre-Calibration	2022-09-10 17:30:12
Post-Calibration	None

Overall Settings	
RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamplifier	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Frequency Weighting	C Weighting
OBA Max Spectrum	At LMax
Overload	122.7 dB

Results				
LA_{eq}	55.9			
LAE	85.5			
EA	39.039	µPa²h		
EA8	1.249	mPa²h		
EA40	6.246	mPa²h		
$LA_{peak\ (max)}$	2022-09-10 17:40:29	94.5	dB	
LAS_{max}	2022-09-10 17:38:45	75.6	dB	
LAS_{min}	2022-09-10 17:35:47	43.3	dB	

		Statistics	
LC_{eq}	63.0 dB	**LA2.00**	65.7 dB
LA_{eq}	55.9 dB	**LA8.00**	56.9 dB
LC_{eq} - LA_{eq}	7.1 dB	**LA25.00**	51.9 dB
LAI_{eq}	58.7 dB	**LA50.00**	49.8 dB
LA_{eq}	55.9 dB	**LA66.60**	48.8 dB
LAI_{eq} - LA_{eq}	2.8 dB	**LA90.00**	47.2 dB
Overload Count	0		

Measurement Report

Report Summary

Meter's File Name	LxT_Data.073.s	Computer's File Name	LxT_0003099-20220910 173033-LxT_Data.073.ldbin
Meter	LxT1 0003099		
Firmware	2.404		
User	Ian Edward Gallagher	Location	NM1 34°15'8.19"N 117°10'24.14"W
Job Description	15 minute noise measurement (1 x 15 minutes)		
Note	Ganddini Project 19533 Miller's Landing at the Lake, Lake Arrowhead		
Start Time	2022-09-10 17:30:33	Duration	0:15:00.0
End Time	2022-09-10 17:45:33	Run Time	0:15:00.0
Pause Time	0:00:00.0		

Results

Overall Metrics

LA_{eq}	55.9 dB		
LAE	85.5 dB	SEA	--- dB
EA	39.0 µPa²h	LAFTM5	61.2 dB
EA8	1.2 mPa²h		
EA40	6.2 mPa²h		
LA_{peak}	94.5 dB	2022-09-10 17:40:29	
LAS_{max}	75.6 dB	2022-09-10 17:38:45	
LAS_{min}	43.3 dB	2022-09-10 17:35:47	
LA_{eq}	55.9 dB		
LC_{eq}	63.0 dB	LC_{eq} - LA_{eq}	7.1 dB
LAI_{eq}	58.7 dB	LAI_{eq} - LA_{eq}	2.8 dB

Exceedances	Count	Duration
LAS > 65.0 dB	6	0:00:26.5
LAS > 85.0 dB	0	0:00:00.0
LApeak > 135.0 dB	0	0:00:00.0
LApeak > 137.0 dB	0	0:00:00.0
LApeak > 140.0 dB	0	0:00:00.0

Community Noise	LDN	LDay	LNight
	--- dB	--- dB	0.0 dB

	LDEN	LDay	LEve	LNight
	--- dB	--- dB	--- dB	--- dB

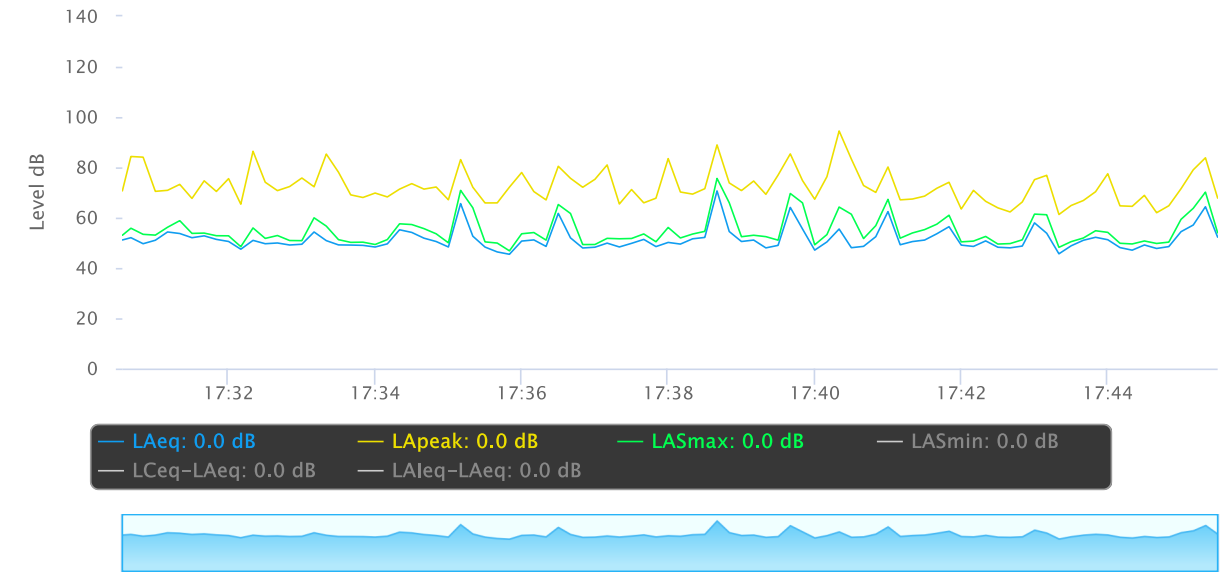
Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	55.9 dB		63.0 dB		--- dB	
$L_{S(max)}$	75.6 dB	2022-09-10 17:38:45	--- dB		--- dB	
$L_{S(min)}$	43.3 dB	2022-09-10 17:35:47	--- dB		--- dB	
$L_{Peak(max)}$	94.5 dB	2022-09-10 17:40:29	--- dB		--- dB	

Overloads	Count	Duration	OBA Count	OBA Duration
	0	0:00:00.0	0	0:00:00.0

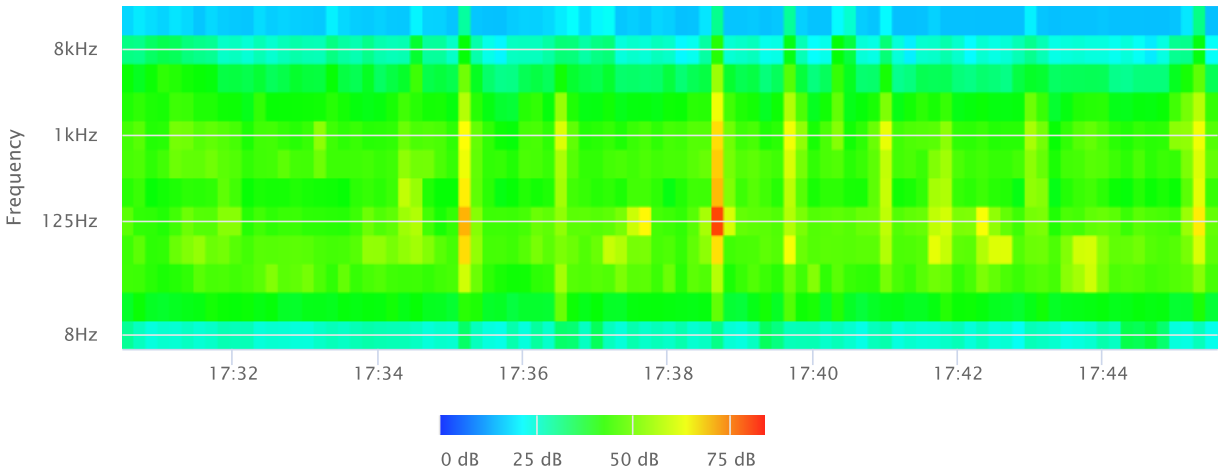
Statistics

LAS 2.0	65.7 dB
LAS 8.0	56.9 dB
LAS 25.0	51.9 dB
LAS 50.0	49.8 dB
LAS 66.6	48.8 dB
LAS 90.0	47.2 dB

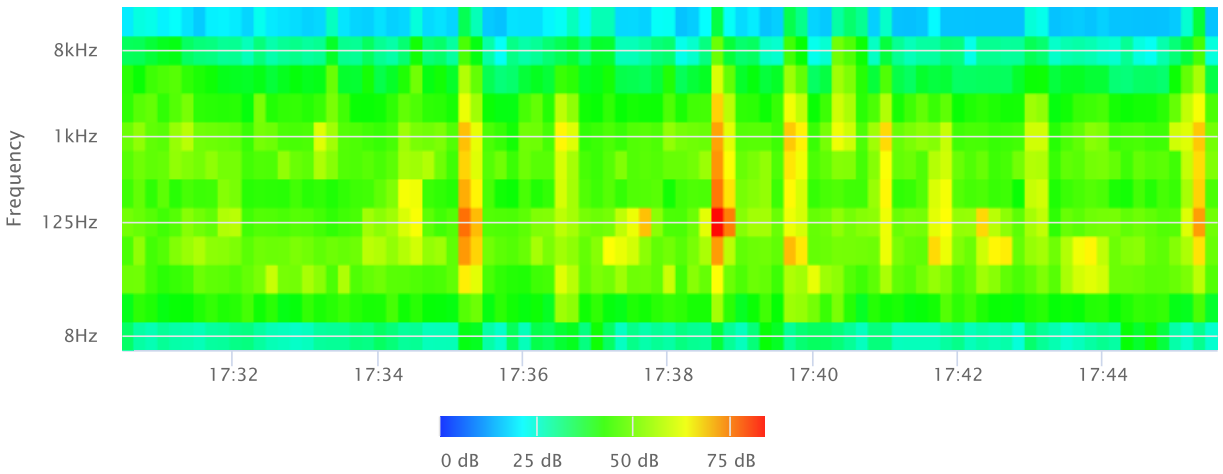
Time History



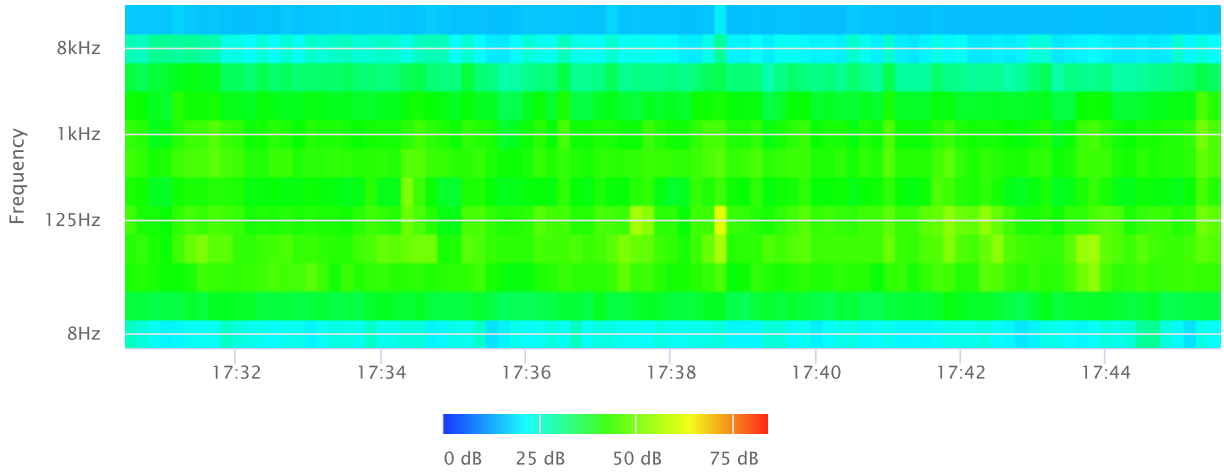
OBA 1/1 Leq



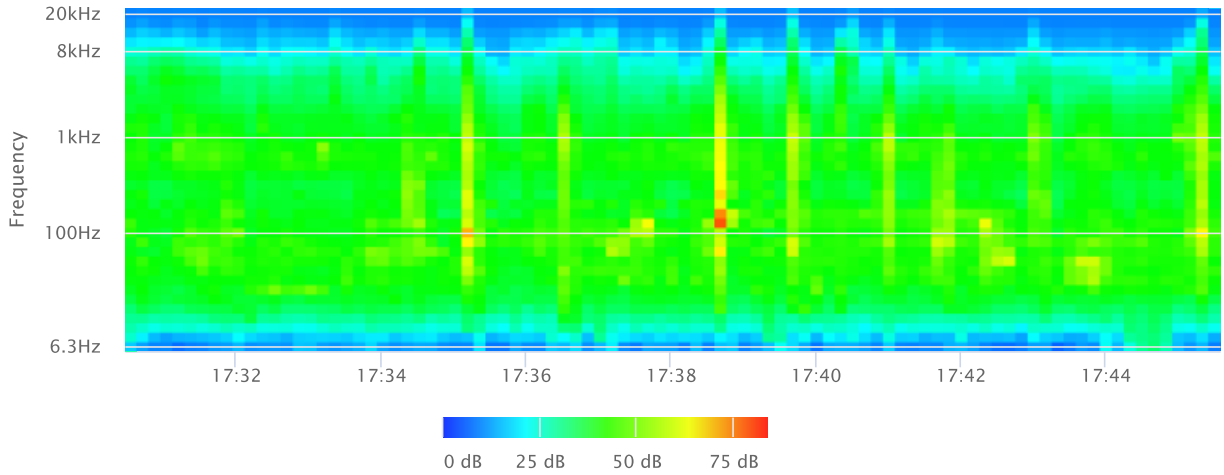
OBA 1/1 Lmax



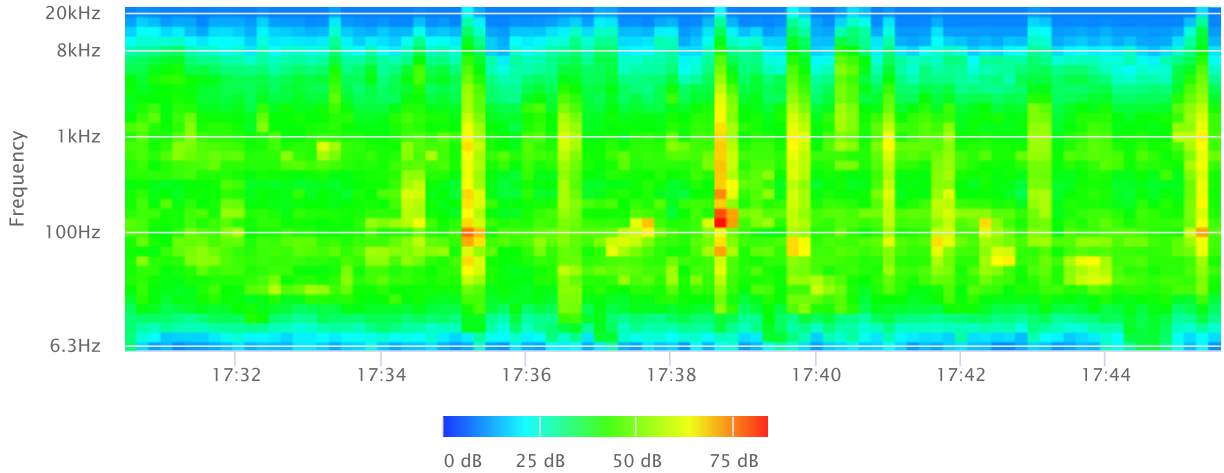
OBA 1/1 Lmin



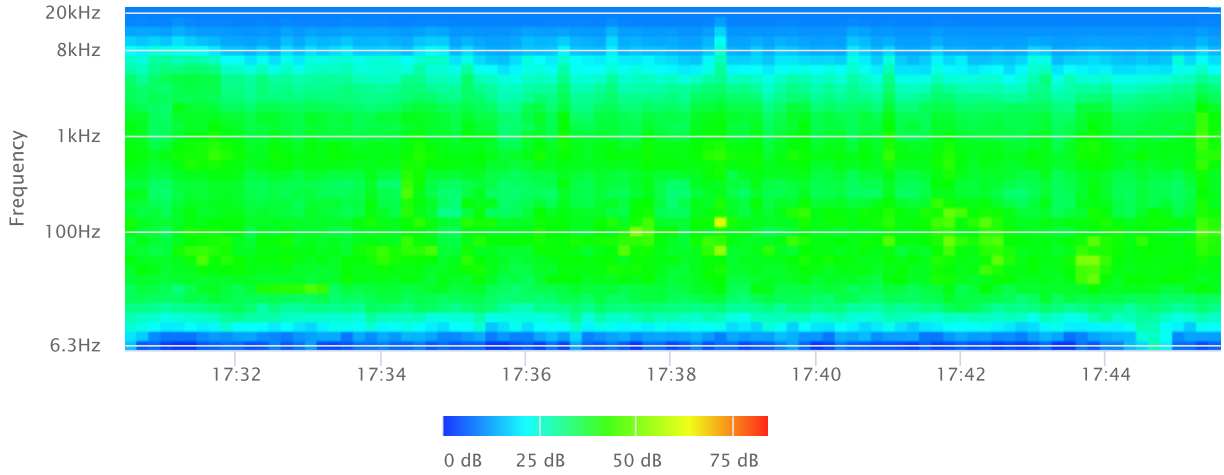
OBA 1/3 Leq



OBA 1/3 Lmax



OBA 1/3 Lmin


20kHz
8kHz
1kHz
100Hz
6.3Hz
Frequency
17:32
17:34
17:36
17:38
17:40
17:42
17:44
0 dB
25 dB
50 dB
75 dB

Noise Measurement
Field Data

Project Name: Miller's Landing, Lake Arrowhead. **Date:** September 10, 2022

Project #: 19533

Noise Measurement #: NM2 Run Time: 15 minutes (1 x 15 minutes) **Technician:** Ian Edward Gallagher

Nearest Address or Cross Street: 171 Fremont Road, Cedar Glen, CA 92321

Site Description (Type of Existing Land Use and any other notable features): Project Site: Area used for catering/entertainment/storage bordered by Hwy 173 to west/north, residential to south, vacant land to east/south/north. Noise Measurement Site: Project site to north/east, single-family residence to south, Fremont Street to southeast, SH173 to north.

Weather: Overcast, recent rain. Sunset 7:02PM **Settings:** SLOW FAST

Temperature: 63 deg F **Wind:** 4 mph **Humidity:** 83% **Terrain:** Hilly

Start Time: 6:03 PM **End Time:** 6:18 PM **Run Time:**

Leq: 59.9 dB

Lmax 77.3 dB

L2 66.3 dB

L8 63.8 dB

L25 60.1 dB

L50 55.2 dB

Primary Noise Source: Traffic noise from the 68 vehicles passing microphone traveling along SH173. Traffic ambiance from other roads.

Secondary Noise Sources: Event/party ambiance from Miller's Landing. Leaf rustle from breeze. Occasional distant overhead air traffic. Some residential ambiance. Bird song.

NOISE METER:	SoundTrack LXT Class 1	**CALIBRATOR:**	Larson Davis CA 250
MAKE:	Larson Davis	**MAKE:**	Larson Davis
MODEL:	LXT1	**MODEL:**	CA 250
SERIAL NUMBER:	3099	**SERIAL NUMBER:**	2723
FACTORY CALIBRATION DATE:	11/17/2021	**FACTORY CALIBRATION DATE:**	11/18/2021
FIELD CALIBRATION DATE:	9/10/2022		

Noise Measurement
Field Data

PHOTOS:

NM2 looking NNE at Fremont Road intersection w/ SH173. Miller's Landing on the right sie of image.

NM2 looking S towards residence 171 Fremont Road, Cedar Glen. Fremont Road going uphill on the right of image.

Summary	
File Name on Meter	LxT_Data.074.s
File Name on PC	LxT_0003099-20220910 180302-LxT_Data.074.ldbin
Serial Number	3099
Model	SoundTrack LxT®
Firmware Version	2.404
User	Ian Edward Gallagher
Location	NM2 34°15'9.65"N 117°10'28.13"W
Job Description	15 minute noise measurement (1 x 15 minutes)
Note	Ganddini Project 19533 Miller's Landing at the Lake, Lake Arrowhead

Measurement	
Start	2022-09-10 18:03:02
Stop	2022-09-10 18:18:02
Duration	00:15:00.0
Run Time	00:15:00.0
Pause	00:00:00.0
Pre-Calibration	2022-09-10 18:02:41
Post-Calibration	None

Overall Settings	
RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamplifier	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Frequency Weighting	C Weighting
OBA Max Spectrum	At LMax
Overload	122.7 dB

Results		
LA_{eq}	59.9	
LAE	89.4	
EA	96.86969	µPa²h
EA8	3.09983	mPa²h
EA40	15.49915	mPa²h
$LA_{peak\ (max)}$	2022-09-10 18:16:42	95.0 dB
LAS_{max}	2022-09-10 18:16:43	77.3 dB
LAS_{min}	2022-09-10 18:17:10	44.6 dB

		Statistics	
LC_{eq}	68.6 dB	**LA2.00**	66.3 dB
LA_{eq}	59.9 dB	**LA8.00**	63.8 dB
LC_{eq} - LA_{eq}	8.8 dB	**LA25.00**	60.1 dB
LAI_{eq}	61.6 dB	**LA50.00**	55.2 dB
LA_{eq}	59.9 dB	**LA66.60**	52.8 dB
LAI_{eq} - LA_{eq}	1.7 dB	**LA90.00**	49.8 dB
Overload Count	0		

Measurement Report

Report Summary

Meter's File Name	LxT_Data.074.s	Computer's File Name	LxT_0003099-20220910 180302-LxT_Data.074.ldbin
Meter	LxT1 0003099		
Firmware	2.404		
User	Ian Edward Gallagher	Location	NM2 34°15'9.65"N 117°10'28.13"W
Job Description	15 minute noise measurement (1 x 15 minutes)		
Note	Ganddini Project 19533 Miller's Landing at the Lake, Lake Arrowhead		
Start Time	2022-09-10 18:03:02	Duration	0:15:00.0
End Time	2022-09-10 18:18:02	Run Time	0:15:00.0
Pause Time	0:00:00.0		

Results

Overall Metrics

LA_{eq}	59.9 dB		
LAE	89.4 dB	SEA	--- dB
EA	96.9 µPa²h	LAFTM5	64.6 dB
EA8	3.1 mPa²h		
EA40	15.5 mPa²h		
LA_{peak}	95.0 dB	2022-09-10 18:16:42	
LAS_{max}	77.3 dB	2022-09-10 18:16:43	
LAS_{min}	44.6 dB	2022-09-10 18:17:10	
LA_{eq}	59.9 dB		
LC_{eq}	68.6 dB	LC_{eq} - LA_{eq}	8.8 dB
LAI_{eq}	61.6 dB	LAI_{eq} - LA_{eq}	1.7 dB

Exceedances	Count	Duration
LAS > 65.0 dB	16	0:00:58.7
LAS > 85.0 dB	0	0:00:00.0
LApeak > 135.0 dB	0	0:00:00.0
LApeak > 137.0 dB	0	0:00:00.0
LApeak > 140.0 dB	0	0:00:00.0

Community Noise	LDN	LDay	LNight
	--- dB	--- dB	0.0 dB

	LDEN	LDay	LEve	LNight
	--- dB	--- dB	--- dB	--- dB

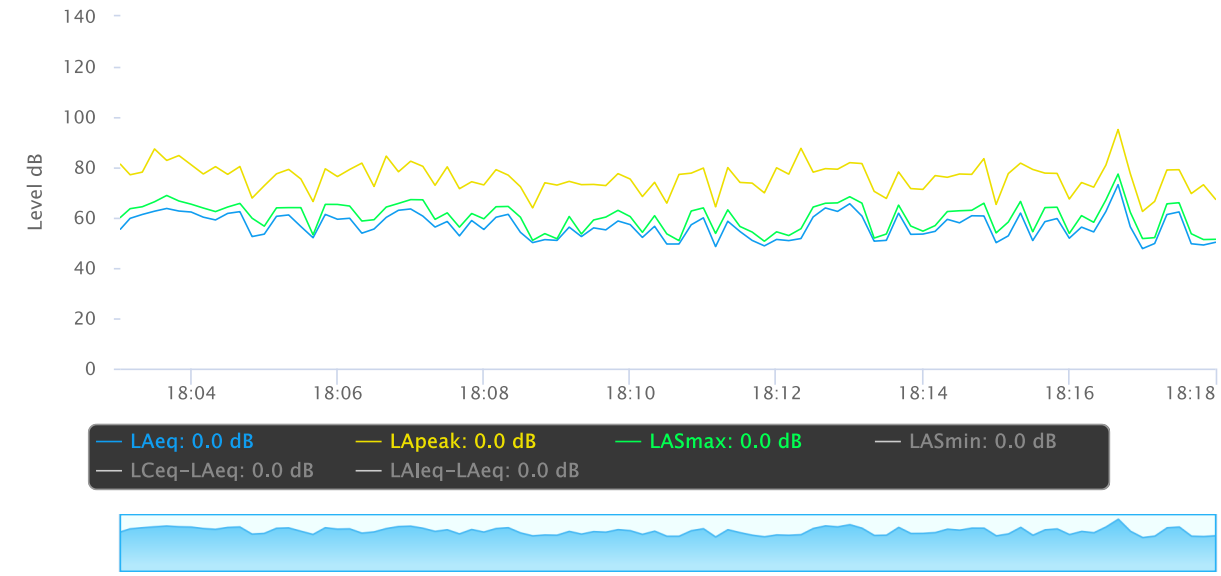
Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	59.9 dB		68.6 dB		--- dB	
$L_{S(max)}$	77.3 dB	2022-09-10 18:16:43	--- dB		--- dB	
$L_{S(min)}$	44.6 dB	2022-09-10 18:17:10	--- dB		--- dB	
$L_{Peak(max)}$	95.0 dB	2022-09-10 18:16:42	--- dB		--- dB	

Overloads	Count	Duration	OBA Count	OBA Duration
	0	0:00:00.0	0	0:00:00.0

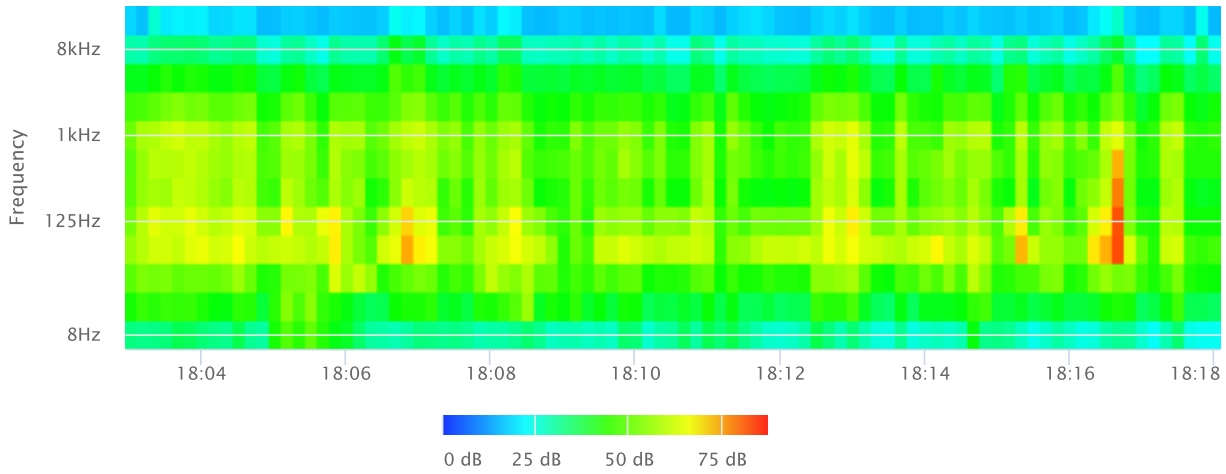
Statistics

LAS 2.0	66.3 dB
LAS 8.0	63.8 dB
LAS 25.0	60.1 dB
LAS 50.0	55.2 dB
LAS 66.6	52.8 dB
LAS 90.0	49.8 dB

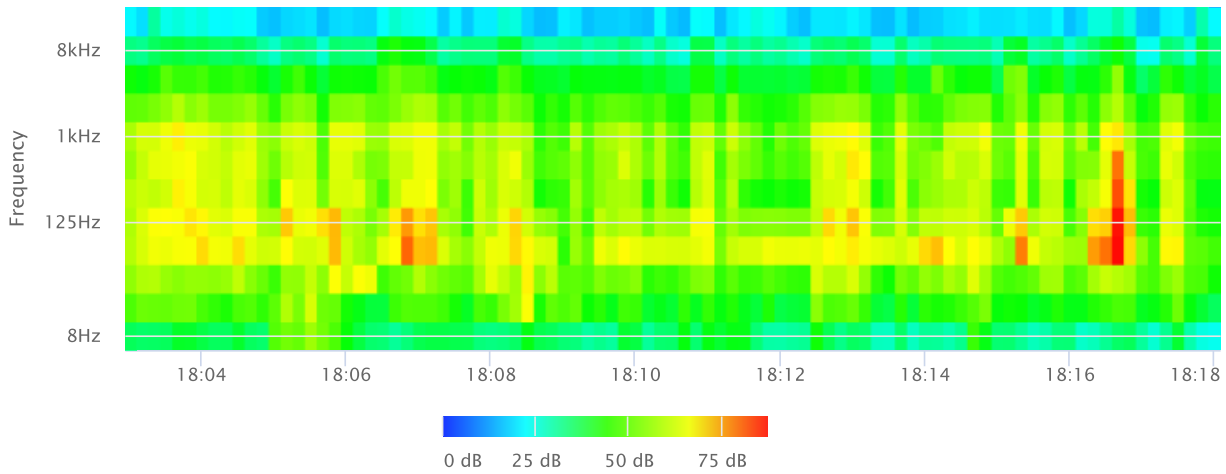
Time History



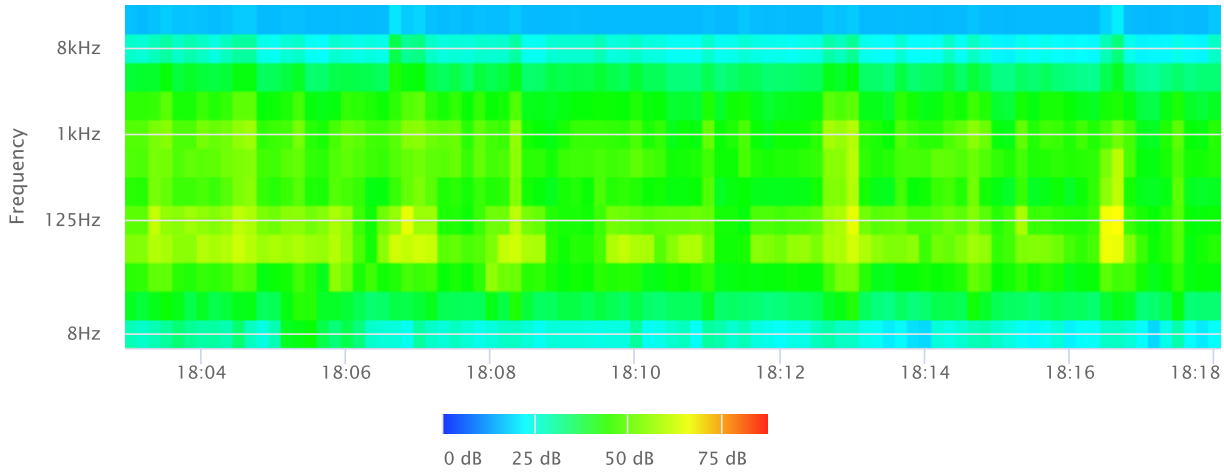
OBA 1/1 Leq



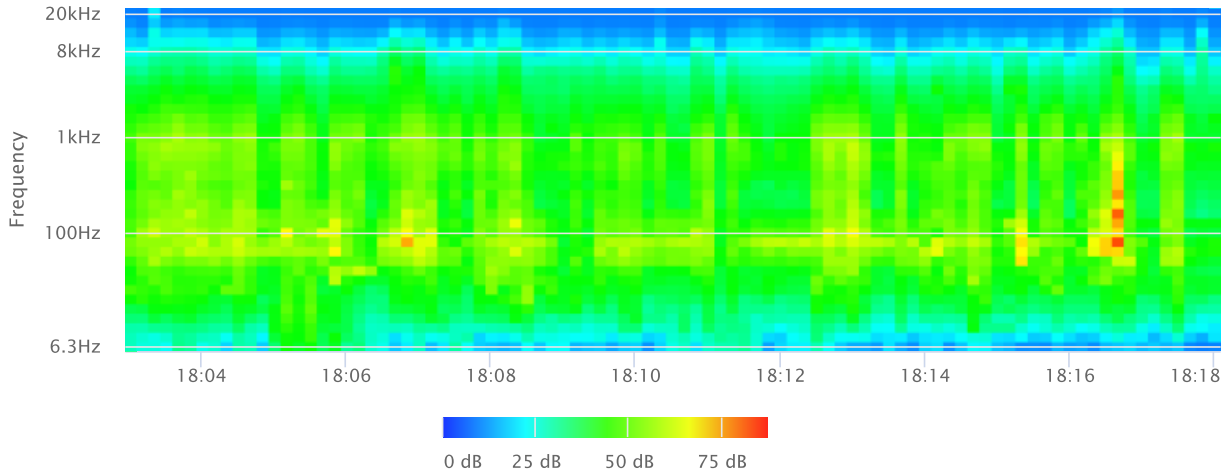
OBA 1/1 Lmax



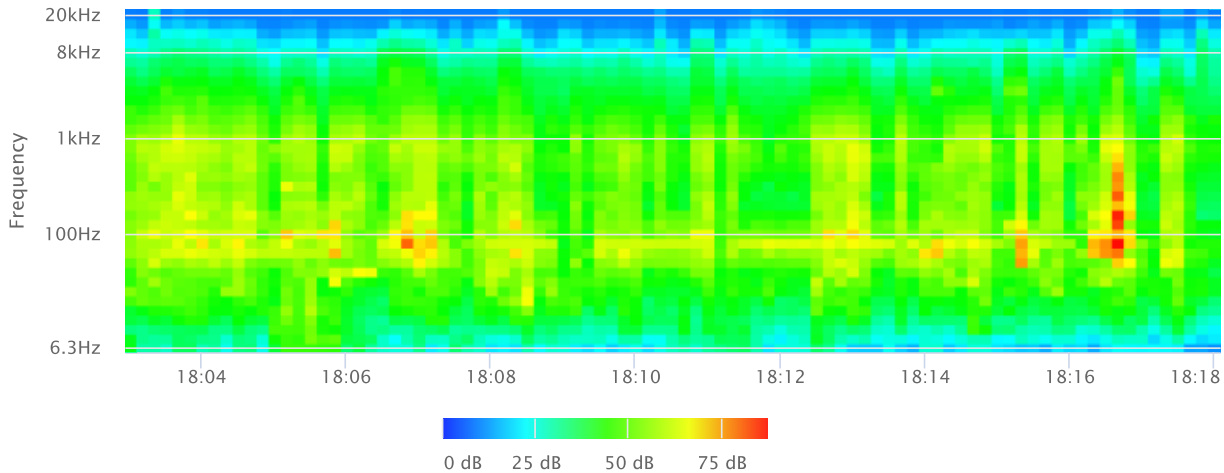
OBA 1/1 Lmin



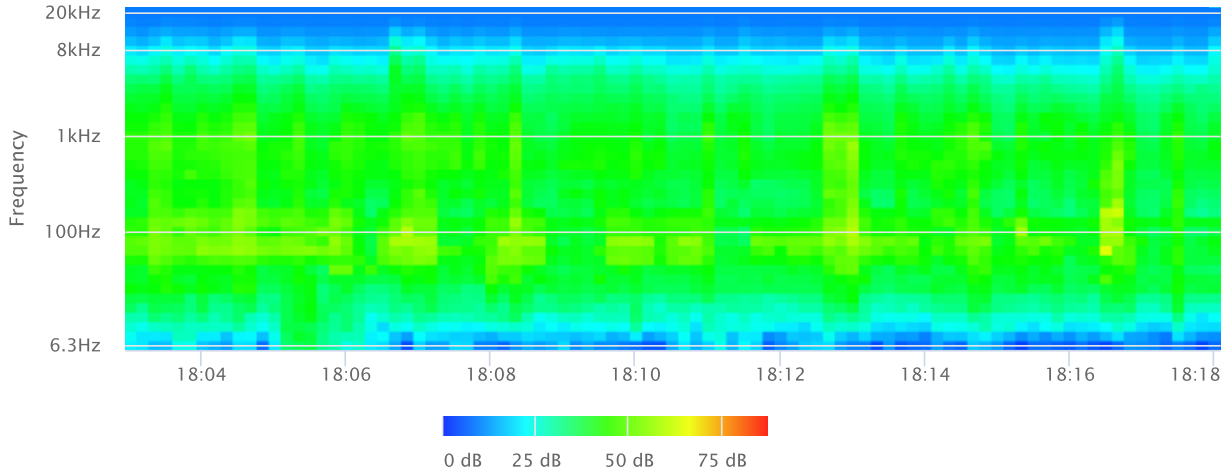
OBA 1/3 Leq



OBA 1/3 Lmax



OBA 1/3 Lmin


20kHz
8kHz
1kHz
100Hz
6.3Hz
Frequency
18:04
18:06
18:08
18:10
18:12
18:14
18:16
18:18
0 dB
25 dB
50 dB
75 dB

Noise Measurement
Field Data

Project Name: Miller's Landing, Lake Arrowhead. **Date:** September 10, 2022

Project #: 19533

Noise Measurement #: NM3 Run Time: 15 minutes (1 x 15 minutes) **Technician:** Ian Edward Gallagher

Nearest Address or Cross Street: 178 Maple Drive, Cedar Glen, CA 92321

Site Description (Type of Existing Land Use and any other notable features): Project Site: Area used for catering/entertainment/storage bordered by Hwy 173 to west/north, residential to south, vacant land to east/south/north. Noise Measurement Site: Single-family residential use to west, Maple Drive to east, single-family residential to north, SH173 to south w/ Miller's Landing further south/southeast.

Weather: Overcast, recent rain. Sunset 7:02PM **Settings:** SLOW FAST

Temperature: 63 deg F **Wind:** 4 mph **Humidity:** 83% **Terrain:** Hilly

Start Time: 6:28 PM **End Time:** 6:43 PM **Run Time:**

Leq:	58.7	dB
Lmax	73.3	dB
L2	66.6	dB
L8	63.5	dB
L25	59.3	dB
L50	53.9	dB

Primary Noise Source: Traffic noise from the 66 vehicles passing microphone traveling along SH173. Traffic ambiance from other roads.

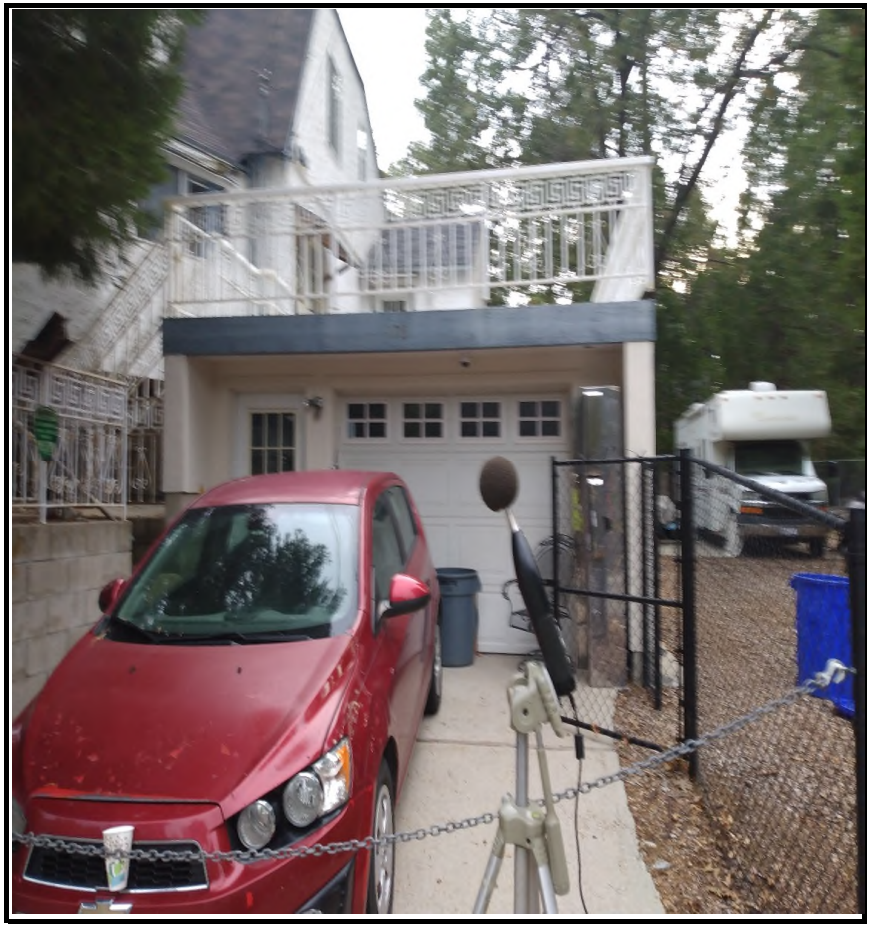
Secondary Noise Sources: Event/party ambiance from Miller's Landing. Leaf rustle from breeze. Occasional distant overhead air traffic. Some residential ambiance. Bird song.

NOISE METER:	SoundTrack LXT Class 1	**CALIBRATOR:**	Larson Davis CA 250
MAKE:	Larson Davis	**MAKE:**	Larson Davis
MODEL:	LXT1	**MODEL:**	CA 250
SERIAL NUMBER:	3099	**SERIAL NUMBER:**	2723
FACTORY CALIBRATION DATE:	11/17/2021	**FACTORY CALIBRATION DATE:**	11/18/2021
FIELD CALIBRATION DATE:	9/10/2022		

Noise Measurement
Field Data

PHOTOS:

NM3 looking SE acoss Maple Drive & SH173 intersection towards Miller's Landing (199 CA-173, Lake Arrowhead).



NM3 looking W towards driveway of residence 178 Maple Drive, Cedar Glen.

Summary	
File Name on Meter	LxT_Data.075.s
File Name on PC	LxT_0003099-20220910 182829-LxT_Data.075.ldbin
Serial Number	3099
Model	SoundTrack LxT®
Firmware Version	2.404
User	Ian Edward Gallagher
Location	NM3 34°15'11.08"N 117°10'29.11"W
Job Description	15 minute noise measurement (1 x 15 minutes)
Note	Ganddini Project 19533 Miller's Landing at the Lake, Lake Arrowhead

Measurement	
Start	2022-09-10 18:28:29
Stop	2022-09-10 18:43:29
Duration	00:15:00.0
Run Time	00:15:00.0
Pause	00:00:00.0
Pre-Calibration	2022-09-10 18:28:02
Post-Calibration	None

Overall Settings	
RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamplifier	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Frequency Weighting	C Weighting
OBA Max Spectrum	At LMax
Overload	122.6 dB

Results		
L_{Aeq}	58.7	
LAE	88.2	
EA	73.9123	µPa²h
EA8	2.365194	mPa²h
EA40	11.82597	mPa²h
$L_{Apeak\ (max)}$	2022-09-10 18:41:48	95.6 dB
L_{ASmax}	2022-09-10 18:38:35	73.3 dB
L_{ASmin}	2022-09-10 18:43:24	35.7 dB

			Statistics	
L_{Ceq}	66.5	dB	**LA2.00**	66.6 dB
L_{Aeq}	58.7	dB	**LA8.00**	63.5 dB
L_{Ceq} - L_{Aeq}	7.8	dB	**LA25.00**	59.3 dB
L_{AIeq}	61.9	dB	**LA50.00**	53.9 dB
L_{Aeq}	58.7	dB	**LA66.60**	50.1 dB
L_{AIeq} - L_{Aeq}	3.2	dB	**LA90.00**	44.6 dB
Overload Count	0			

Measurement Report

Report Summary

Meter's File Name	LxT_Data.075.s	Computer's File Name	LxT_0003099-20220910 182829-LxT_Data.075.ldbin
Meter	LxT1 0003099		
Firmware	2.404		
User	Ian Edward Gallagher	Location	NM3 34°15'11.08"N 117°10'29.11"W
Job Description	15 minute noise measurement (1 x 15 minutes)		
Note	Ganddini Project 19533 Miller's Landing at the Lake, Lake Arrowhead		
Start Time	2022-09-10 18:28:29	Duration	0:15:00.0
End Time	2022-09-10 18:43:29	Run Time	0:15:00.0
Pause Time	0:00:00.0		

Results

Overall Metrics

LA_{eq}	58.7 dB		
LAE	88.2 dB	SEA	--- dB
EA	73.9 µPa²h	LAFTM5	64.6 dB
EA8	2.4 mPa²h		
EA40	11.8 mPa²h		
LA_{peak}	95.6 dB	2022-09-10 18:41:48	
LAS_{max}	73.3 dB	2022-09-10 18:38:35	
LAS_{min}	35.7 dB	2022-09-10 18:43:24	
LA_{eq}	58.7 dB		
LC_{eq}	66.5 dB	LC_{eq} - LA_{eq}	7.8 dB
LAI_{eq}	61.9 dB	LAI_{eq} - LA_{eq}	3.2 dB

Exceedances	Count	Duration
LAS > 65.0 dB	20	0:01:01.3
LAS > 85.0 dB	0	0:00:00.0
LApeak > 135.0 dB	0	0:00:00.0
LApeak > 137.0 dB	0	0:00:00.0
LApeak > 140.0 dB	0	0:00:00.0

Community Noise	LDN	LDay	LNight
	--- dB	--- dB	0.0 dB

	LDEN	LDay	LEve	LNight
	--- dB	--- dB	--- dB	--- dB

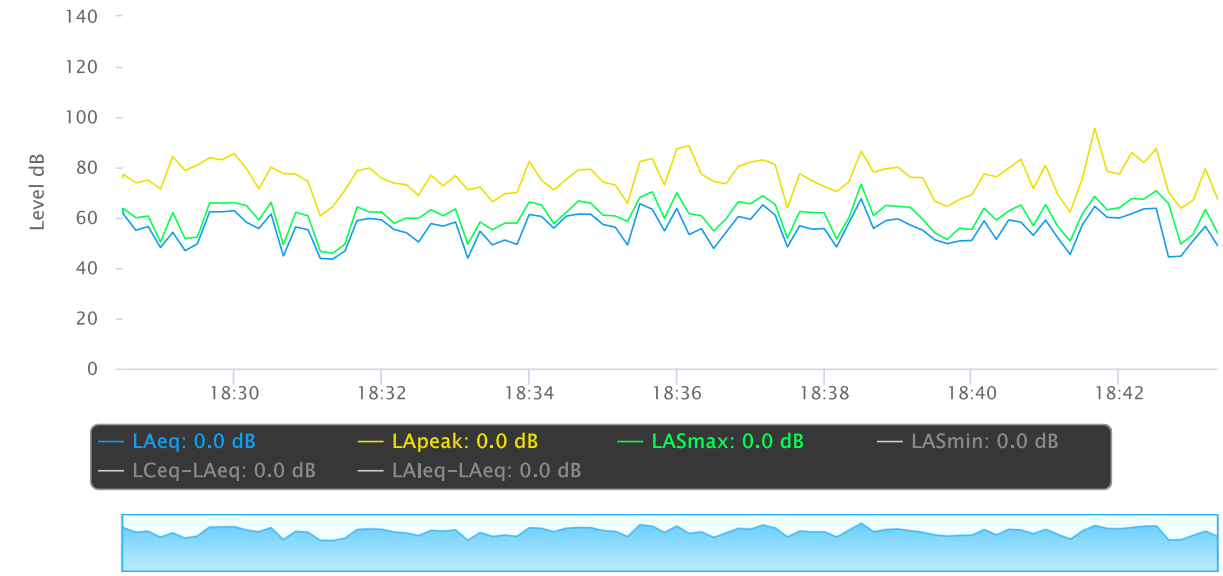
Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	58.7 dB		66.5 dB		--- dB	
$L_{S(max)}$	73.3 dB	2022-09-10 18:38:35	--- dB		--- dB	
$L_{S(min)}$	35.7 dB	2022-09-10 18:43:24	--- dB		--- dB	
$L_{Peak(max)}$	95.6 dB	2022-09-10 18:41:48	--- dB		--- dB	

Overloads	Count	Duration	OBA Count	OBA Duration
	0	0:00:00.0	0	0:00:00.0

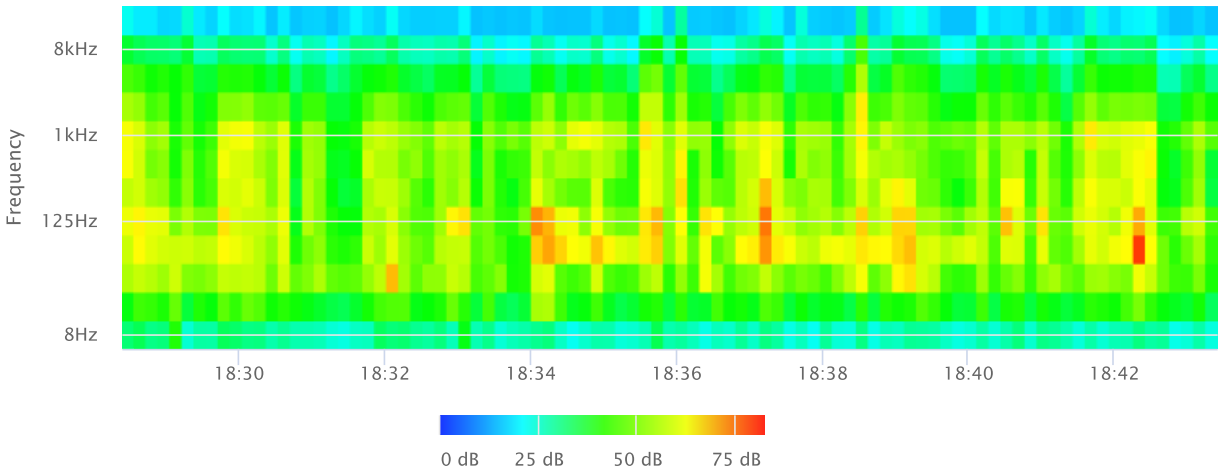
Statistics

LAS 2.0	66.6 dB
LAS 8.0	63.5 dB
LAS 25.0	59.3 dB
LAS 50.0	53.9 dB
LAS 66.6	50.1 dB
LAS 90.0	44.6 dB

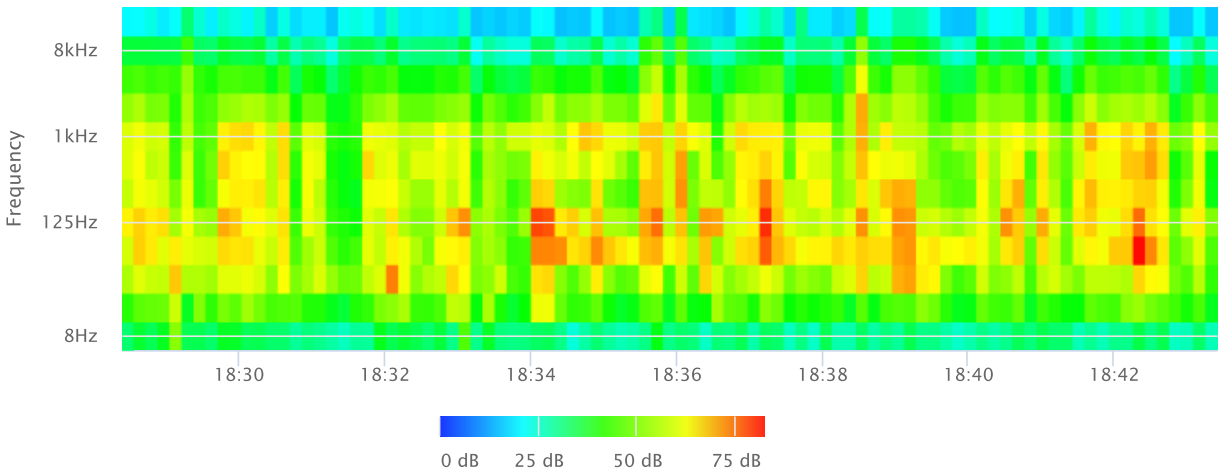
Time History



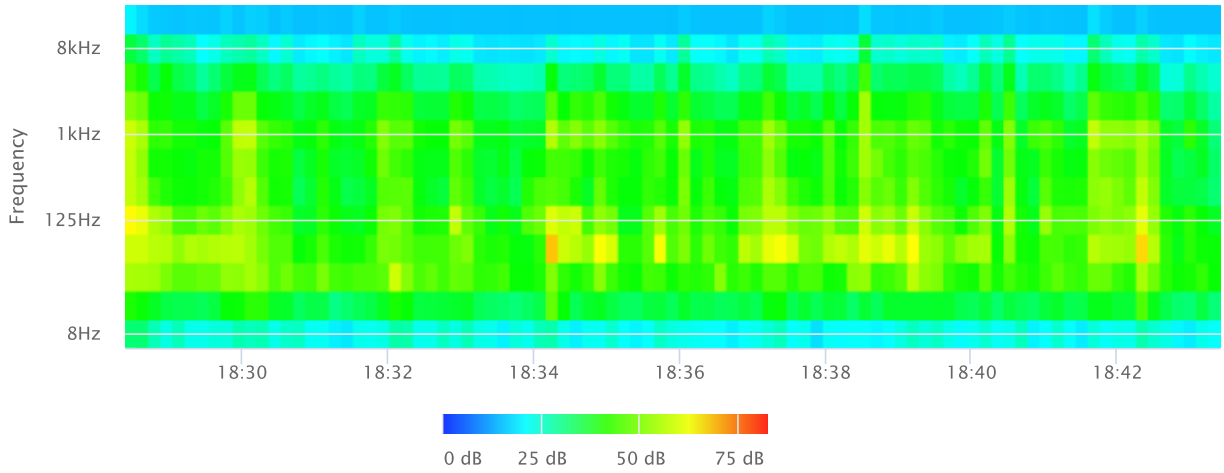
OBA 1/1 Leq



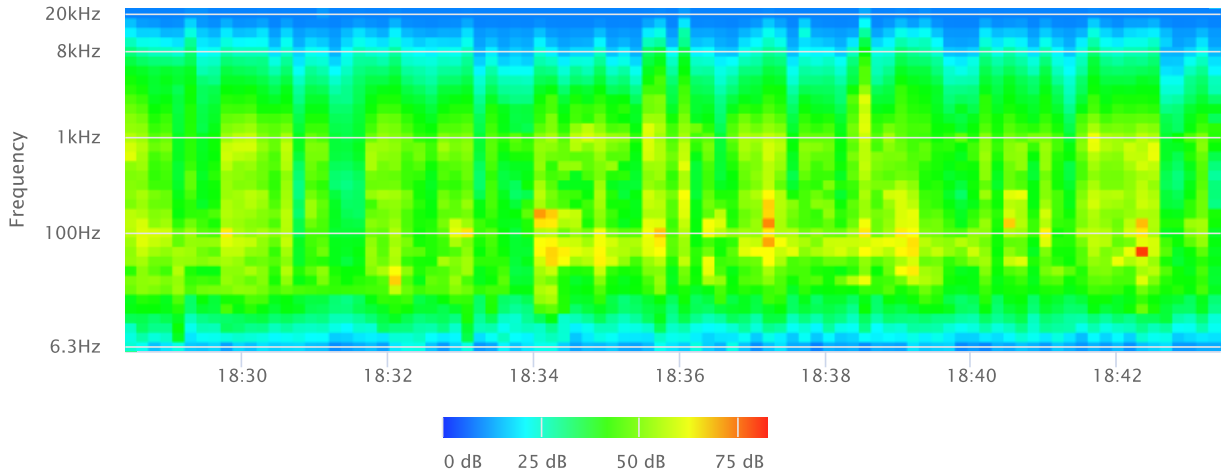
OBA 1/1 Lmax



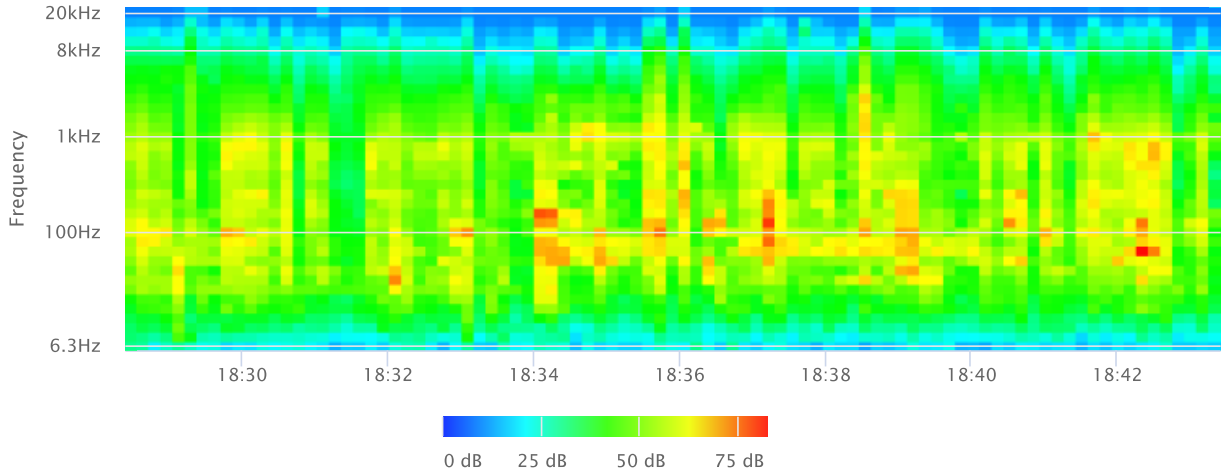
OBA 1/1 Lmin



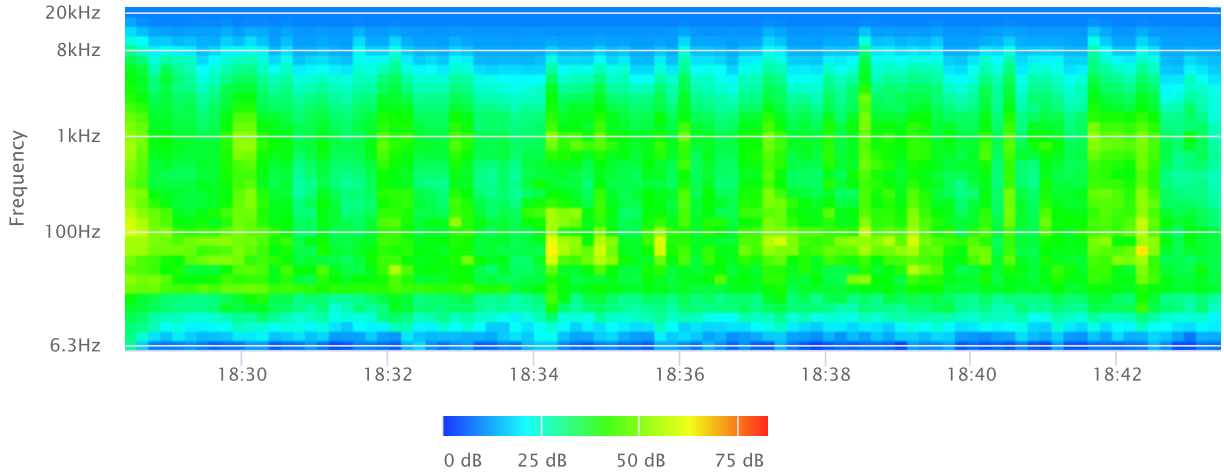
OBA 1/3 Leq



OBA 1/3 Lmax



OBA 1/3 Lmin


20kHz
8kHz
1kHz
100Hz
6.3Hz
Frequency
18:30
18:32
18:34
18:36
18:38
18:40
18:42
0 dB
25 dB
50 dB
75 dB

Noise Measurement
Field Data

Project Name: Miller's Landing, Lake Arrowhead. **Date:** September 10, 2022

Project #: 19533

Noise Measurement #: NM4 Run Time: 15 minutes (1 x 15 minutes) **Technician:** Ian Edward Gallagher

Nearest Address or Cross Street: 220 Oak Drive, Lake Arrowhead, CA 92352

Site Description (Type of Existing Land Use and any other notable features): Project Site: Area used for catering/entertainment/storage bordered by Hwy 173 to west/north, residential to south, vacant land to east/south/north. Noise Measurement Site: Single-family residential to north, Oak Drive & intersection w/ SH173 to esat, SB Fire Station 93 to SE.

Weather: Overcast, recent rain. Sunset 7:02PM **Settings:** SLOW FAST

Temperature: 63 deg F **Wind:** 4 mph **Humidity:** 83% **Terrain:** Hilly

Start Time: 6:54 PM **End Time:** 7:09 PM **Run Time:**

Leq:	64.6	dB
Lmax	81.7	dB
L2	75.7	dB
L8	67.8	dB
L25	62.1	dB
L50	55.4	dB

Primary Noise Source: Traffic noise from the 68 vehicles passing microphone traveling along SH173. Traffic ambiance from other roads.

Secondary Noise Sources: Event/party ambiance from Miller's Landing. Leaf rustle from breeze . Occasional distant overhead air traffic. Some residential ambiance. Bird song.

NOISE METER:	SoundTrack LXT Class 1	**CALIBRATOR:**	Larson Davis CA 250
MAKE:	Larson Davis	**MAKE:**	Larson Davis
MODEL:	LXT1	**MODEL:**	CA 250
SERIAL NUMBER:	3099	**SERIAL NUMBER:**	2723
FACTORY CALIBRATION DATE:	11/17/2021	**FACTORY CALIBRATION DATE:**	11/18/2021
FIELD CALIBRATION DATE:	9/10/2022		

Noise Measurement
Field Data

PHOTOS:

NM4 looking E across SH173 towards Hook Creek Road intersection.

NM4 looking N towards residence 220 Oak Drive, Arrowhead.
Oak Drive on the right of the image.

Summary	
File Name on Meter	LxT_Data.076.s
File Name on PC	LxT_0003099-20220910 185409-LxT_Data.076.ldbin
Serial Number	3099
Model	SoundTrack LxT®
Firmware Version	2.404
User	Ian Edward Gallagher
Location	NM4 34°15'12.77"N 117°10'26.89"W
Job Description	15 minute noise measurement (1 x 15 minutes)
Note	Ganddini Project 19533 Miller's Landing at the Lake, Lake Arrowhead

Measurement	
Start	2022-09-10 18:54:09
Stop	2022-09-10 19:09:09
Duration	00:15:00.0
Run Time	00:15:00.0
Pause	00:00:00.0
Pre-Calibration	2022-09-10 18:53:49
Post-Calibration	None

Overall Settings	
RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamplifier	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Frequency Weighting	C Weighting
OBA Max Spectrum	At LMax
Overload	124.0 dB

Results			
LA_{eq}	64.6		
LAE	94.2		
EA	289.1727	µPa²h	
EA8	9.253527	mPa²h	
EA40	46.26763	mPa²h	
$LA_{peak\ (max)}$	2022-09-10 19:03:48	95.8	dB
LAS_{max}	2022-09-10 19:04:42	81.7	dB
LAS_{min}	2022-09-10 19:07:24	36.4	dB

		Statistics	
LC_{eq}	74.4 dB	**LA2.00**	75.7 dB
LA_{eq}	64.6 dB	**LA8.00**	67.8 dB
LC_{eq} - LA_{eq}	9.8 dB	**LA25.00**	62.1 dB
LAI_{eq}	66.5 dB	**LA50.00**	55.4 dB
LA_{eq}	64.6 dB	**LA66.60**	49.3 dB
LAI_{eq} - LA_{eq}	1.9 dB	**LA90.00**	39.6 dB
Overload Count	0		

Measurement Report

Report Summary

Meter's File Name	LxT_Data.076.s	Computer's File Name	LxT_0003099-20220910 185409-LxT_Data.076.ldbin
Meter	LxT1 0003099		
Firmware	2.404		
User	Ian Edward Gallagher	Location	NM4 34°15'12.77"N 117°10'26.89"W
Job Description	15 minute noise measurement (1 x 15 minutes)		
Note	Ganddini Project 19533 Miller's Landing at the Lake, Lake Arrowhead		
Start Time	2022-09-10 18:54:09	Duration	0:15:00.0
End Time	2022-09-10 19:09:09	Run Time	0:15:00.0
Pause Time	0:00:00.0		

Results

Overall Metrics

LA_{eq}	64.6 dB		
LAE	94.2 dB	SEA	--- dB
EA	289.2 µPa²h	LAFTM5	69.0 dB
EA8	9.3 mPa²h		
EA40	46.3 mPa²h		
LA_{peak}	95.8 dB	2022-09-10 19:03:48	
LAS_{max}	81.7 dB	2022-09-10 19:04:42	
LAS_{min}	36.4 dB	2022-09-10 19:07:24	
LA_{eq}	64.6 dB		
LC_{eq}	74.4 dB	LC_{eq} - LA_{eq}	9.8 dB
LAI_{eq}	66.5 dB	LAI_{eq} - LA_{eq}	1.9 dB

Exceedances	Count	Duration
LAS > 65.0 dB	26	0:02:48.5
LAS > 85.0 dB	0	0:00:00.0
LApeak > 135.0 dB	0	0:00:00.0
LApeak > 137.0 dB	0	0:00:00.0
LApeak > 140.0 dB	0	0:00:00.0

Community Noise	LDN	LDay	LNight
	--- dB	--- dB	0.0 dB

	LDEN	LDay	LEve	LNight
	--- dB	--- dB	--- dB	--- dB

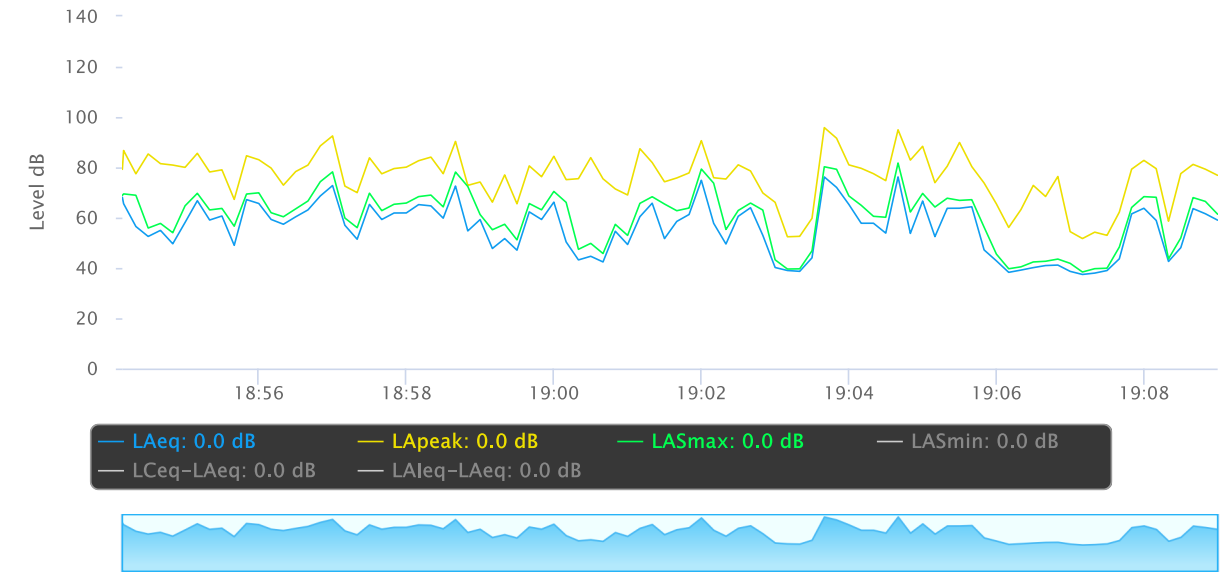
Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	64.6 dB		74.4 dB		--- dB	
$L_{S(max)}$	81.7 dB	2022-09-10 19:04:42	--- dB		--- dB	
$L_{S(min)}$	36.4 dB	2022-09-10 19:07:24	--- dB		--- dB	
$L_{Peak(max)}$	95.8 dB	2022-09-10 19:03:48	--- dB		--- dB	

Overloads	Count	Duration	OBA Count	OBA Duration
	0	0:00:00.0	0	0:00:00.0

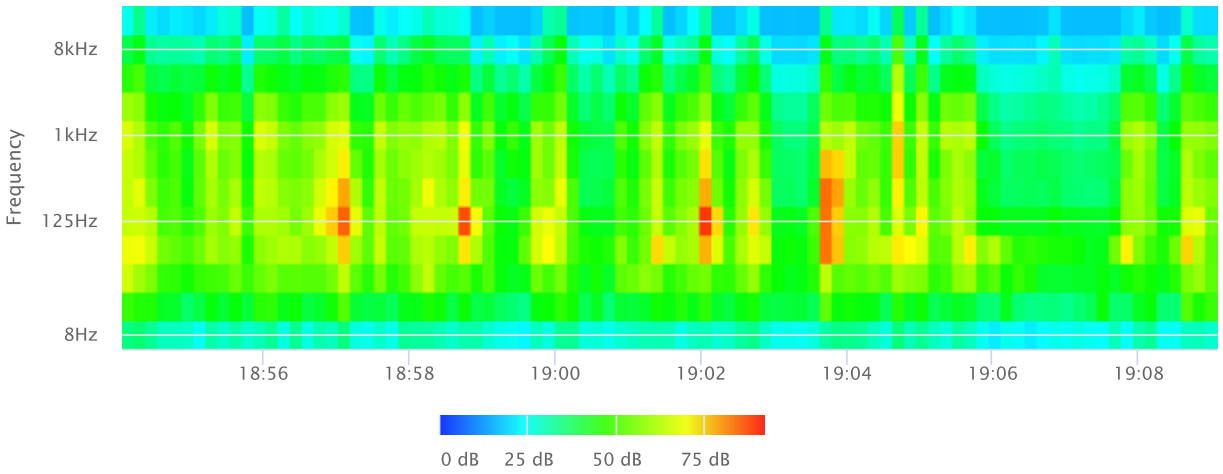
Statistics

LAS 2.0	75.7 dB
LAS 8.0	67.8 dB
LAS 25.0	62.1 dB
LAS 50.0	55.4 dB
LAS 66.6	49.3 dB
LAS 90.0	39.6 dB

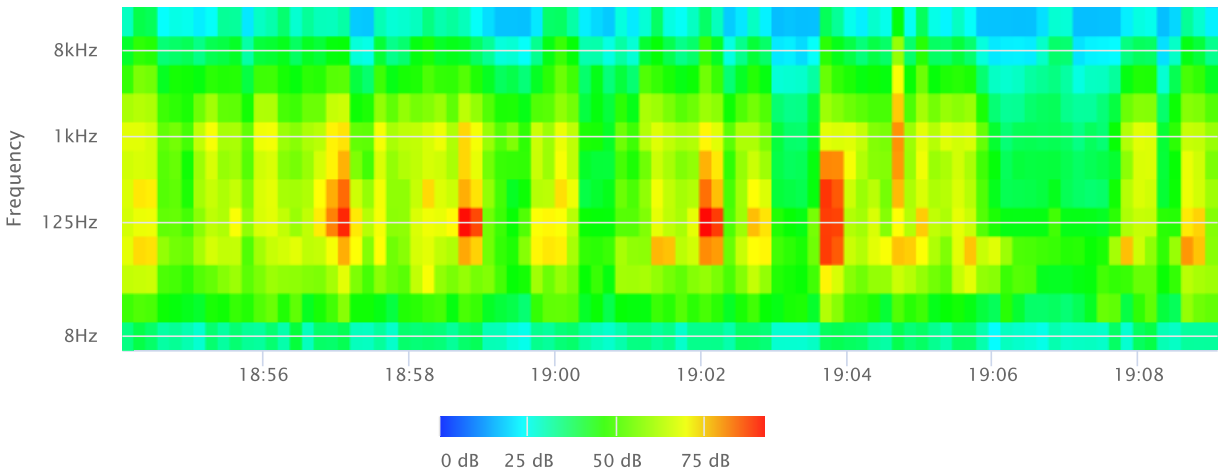
Time History



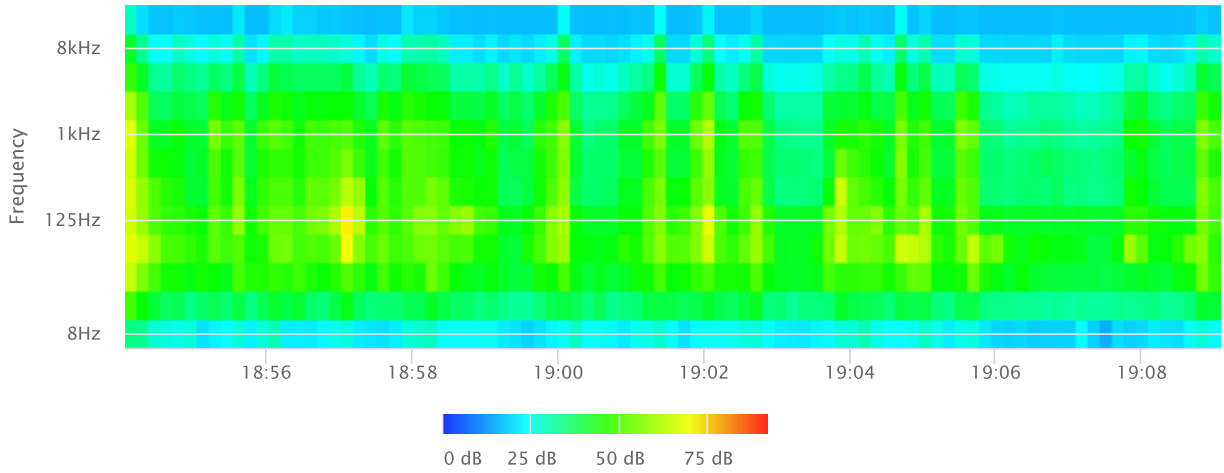
OBA 1/1 Leq



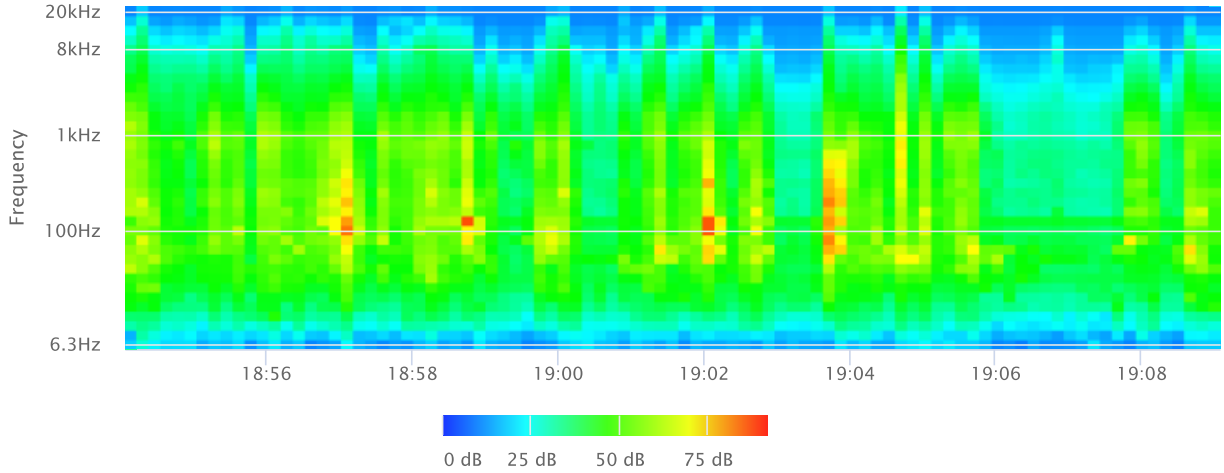
OBA 1/1 Lmax



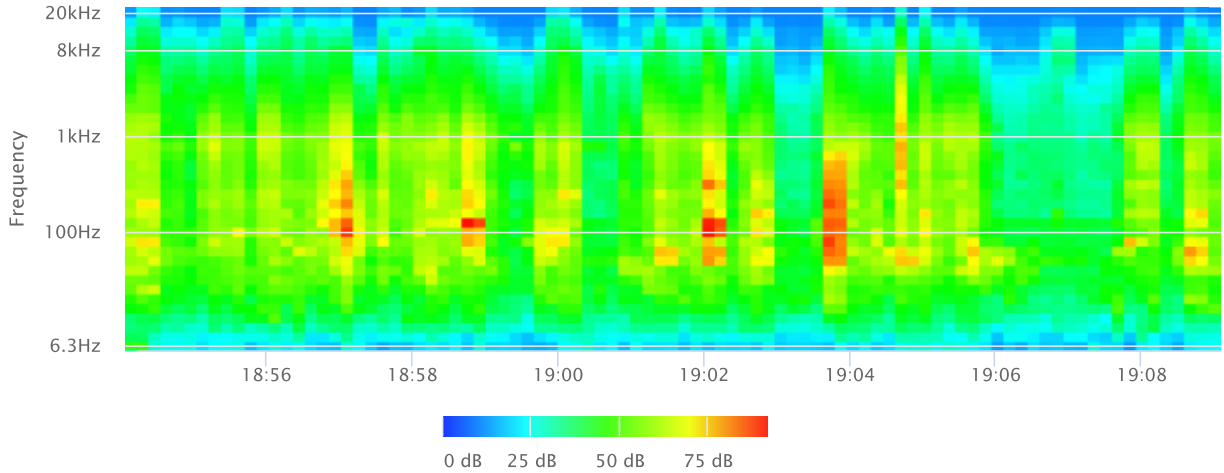
OBA 1/1 Lmin



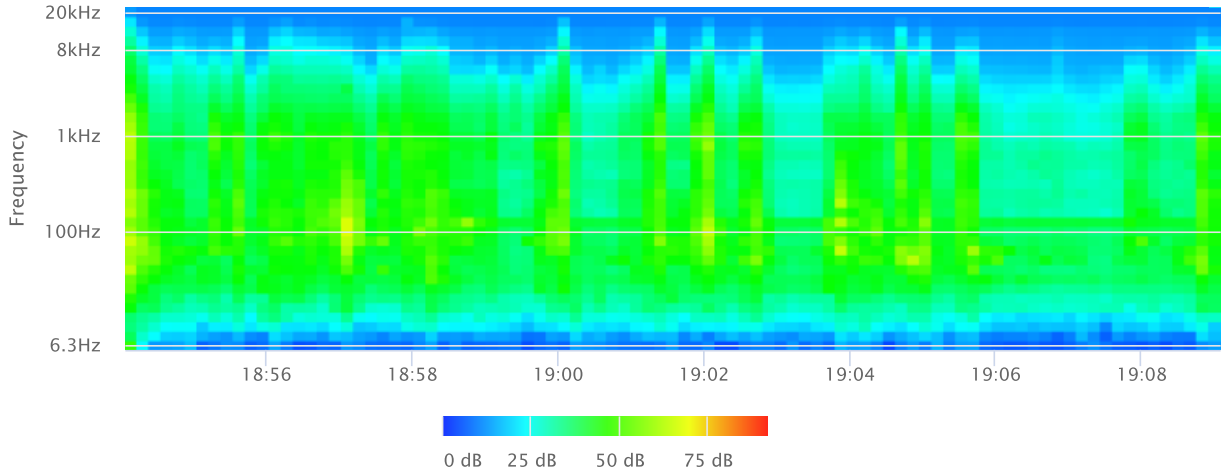
OBA 1/3 Leq



OBA 1/3 Lmax



OBA 1/3 Lmin


20kHz
8kHz
1kHz
100Hz
6.3Hz
Frequency
18:56
18:58
19:00
19:02
19:04
19:06
19:08
0 dB
25 dB
50 dB
75 dB

APPENDIX D

CONSTRUCTION NOISE MODELING

Receptor - Single-family Residential Use to South (107 Fremont Road, Lake Arrowhead)

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA
Building Renovation/Architectural Coating									
Pneumatic Tools	1	85	138	50	0.50	-8.8	-3.0	76.2	73.2
Air Compressors	1	78	236	40	0.40	-13.5	-4.0	64.5	60.5
								Log Sum	73.4

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construciton Noise Model User's Guide (January 2006)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (property line).

Receptor - Single-family Residential Use to Southeast (149 Cumberland Drive, Lake Arrowhead)

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA
Building Renovation/Architectural Coating									
Pneumatic Tools	1	85	295	50	0.50	-15.4	-3.0	69.6	66.6
Air Compressors	1	78	289	40	0.40	-15.2	-4.0	62.8	58.8
								Log Sum	67.2

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construciton Noise Model User's Guide (January 2006)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (property line).

Receptor - Single-family Residential Use to Northwest (178 Maple Drive, Lake Arrowhead)

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA
Building Renovation/Architectural Coating									
Pneumatic Tools	1	85	182	50	0.50	-11.2	-3.0	73.8	70.8
Air Compressors	1	78	248	40	0.40	-13.9	-4.0	64.1	60.1
								Log Sum	71.1

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construciton Noise Model User's Guide (January 2006)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (property line).

Receptor - Single-family Residential Use to Northwest (220 Oak Drive, Lake Arrowhead)

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA
Building Renovation/Architectural Coating									
Pneumatic Tools	1	85	269	50	0.50	-14.6	-3.0	70.4	67.4
Air Compressors	1	78	205	40	0.40	-12.3	-4.0	65.7	61.8
								Log Sum	68.4

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construciton Noise Model User's Guide (January 2006)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (property line).

APPENDIX E

PROJECT GENERATED TRIPS FHWA WORKSHEETS

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Traffic Noise

Project: **19533 Miller's Landing at the Lake**

Road: **Highway 173**

Segment: **In vicinity of the project site**

	DAYTIME			EVENING			NIGHTTIME			ADT	4000.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	40.00
										DISTANCE	40.00
INPUT PARAMETERS											
Vehicles per hour	226.63	12.96	3.04	168.26	2.16	0.51	41.74	18.00	4.22	% A	90
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	8.1
NOISE CALCULATIONS											
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16	% HT	1.9
ADJUSTMENTS											
Flow	17.23	4.80	-1.50	15.93	-2.98	-9.28	9.88	6.23	-0.07		
Distance	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	68.22
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	62.97
LEQ	60.49	57.01	55.56	59.19	49.23	47.78	53.14	58.44	56.99	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	62.97		EVENING LEQ	59.89		NIGHT LEQ	61.47		Use hour?	no
										GRADE dB	0.00
		CNEL	**68.22**								

FHWA Traffic Noise Prediction Model FHWA-RD-77-108

Existing Plus Project Traffic Noise

Project: **19533 Miller's Landing at the Lake**

Road: **Highway 173**

Segment: **In vicinity of the project site**

	DAYTIME			EVENING			NIGHTTIME			ADT	4126.00
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	SPEED	40.00
										DISTANCE	40.00
INPUT PARAMETERS											
Vehicles per hour	234.56	12.96	3.04	174.15	2.16	0.51	43.20	18.00	4.22	% A	90.31
Speed in MPH	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00		
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00		
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	% MT	7.85
NOISE CALCULATIONS											
Reference levels	67.36	76.31	81.16	67.36	76.31	81.16	67.36	76.31	81.16	% HT	1.84
ADJUSTMENTS											
Flow	17.38	4.80	-1.50	16.08	-2.98	-9.28	10.03	6.23	-0.07		
Distance	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	LEFT	-90.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT	90.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	CNEL	68.26
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	DAY LEQ	63.05
LEQ	60.64	57.01	55.56	59.34	49.23	47.78	53.29	58.44	56.99	Day hour	89.00
										Absorbtive?	no
	DAY LEQ	63.05		EVENING LEQ	60.01		NIGHT LEQ	61.49		Use hour?	no
										GRADE dB	0.00
		CNEL	**68.26**								

RTE	RTE_SFX	DIST	CNTY	POSTMILE_PFX	POSTMILE	POSTMILE_SFX	LEG	DESCRIPTION	VEHICLE_AADT_TOTAL	TRUCK_AADT_TOTAL	TRK_PERCENT_TOT	TRK_2_AXLE	TRK_3_AXLE	TRK_4_AXLE	TRK_5_AXLE	TRK_2_AXLE_PCT	TRK_3_AXLE_PCT	TRK_4_AXLE_PCT	TRK_5_AXLE_PCT	EAL	YEAR_VER	EST
173		08	SBD		21.462		A	LAKE ARROWHEAD, JCT. RTE. 189 AT ARROWHEAD VILLAGE ROAD	4000	400	10.00	323	38	0	38	80.80	9.60	0.00	9.60	28	86	V

2020- AADT Truck
https://dot.ca.gov/programs/traffic-operations/census

Autos = 90%
Medium = 8%
Heavy = 2%