

Final Initial Study

Chalice Unitarian Universalist Congregation Conditional Use Permit

Appendix F Chalice Unitarian Universalist Congregation Acoustical Site Assessment



**ACOUSTICAL SITE ASSESSMENT
CHALICE UNITARIAN UNIVERSALIST CONGREGATION
ESCONDIDO, CA**

Submitted to:

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INTRODUCTION AND DEFINITIONS

Existing Site Characterization

The Chalice Unitarian Universalist Congregation (denoted in this report as Chalice U.U.) development site (APN 238-110-39-00) consists of approximately 2.3 gross acres, located in the City of Escondido, CA, as shown in Figure 1 on the following page. Regional access to the site is obtained from Miller Avenue and Hamilton Lane via Interstate 15 (I-15), as shown in Figure 2, on Page 3 of this report. Surrounding land uses consist of single-family residential development, and undeveloped open space. These features can be seen in Figure 3 on Page 4 of this report.

The project site resides as a fully disturbed land use, and currently has one 3,300 square-foot converted two-story residence, and a 330 square foot accessory building. Both structures operate as a church under a previous County of San Diego Major Use Permit (MUP).¹ The facility currently houses a 1,416 square foot chapel, offices and classrooms, and is now part of the City of Escondido, through annexation. Elevations across the property range from approximately 630 feet to 670 feet above mean sea level (MSL).

Project Description

Chalice U.U. is requesting expansion of its current facility to include the construction of a 2,569 square-foot Multi-Purpose Building, as well as additional expansion of the existing main church structure to include two 211 square-foot foyers, as shown in Figure 4 on Page 5 of this report.. The project would include all necessary improvements to Miller Avenue as required by the City, as well as necessary onsite landscaping, the addition of a fire hydrant to service the property, and two storm water detention basins.

Acoustical Definitions and Theory

Sound waves are linear mechanical waves. They can be propagated in solids, liquids, and gases. The material transmitting such a wave oscillates in the direction of propagation of the wave itself. Sound waves originate from some sort of vibrating surface, which alternatively compress the surrounding air on a forward movement, and expand it on a backward movement.

There is a large range of frequencies within which linear waves can be generated, sound waves being confined to the frequency range that can stimulate the auditory organs to the sensation of hearing. For humans, this range is from about 20 Hertz (Hz or cycles per second) to about 20,000 Hz. The air transmits these frequency disturbances outward from the source of the wave.

¹ MUP Application P01-024 granted on 9/4/03.

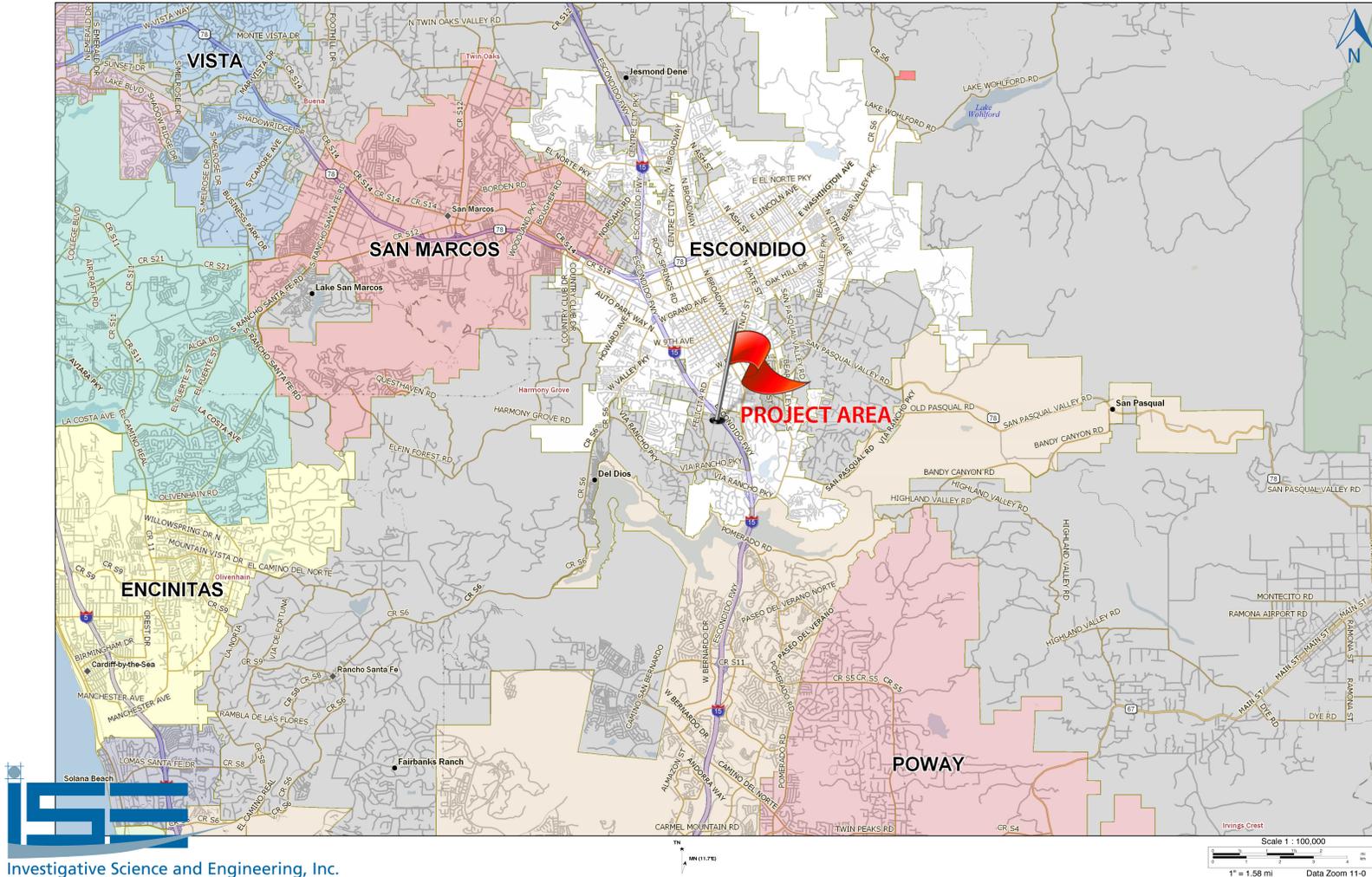


FIGURE 1: Project Study Area Vicinity Map (ISE 11/16)





FIGURE 3: Aerial Image Showing Project Development Site (ISE 11/16)

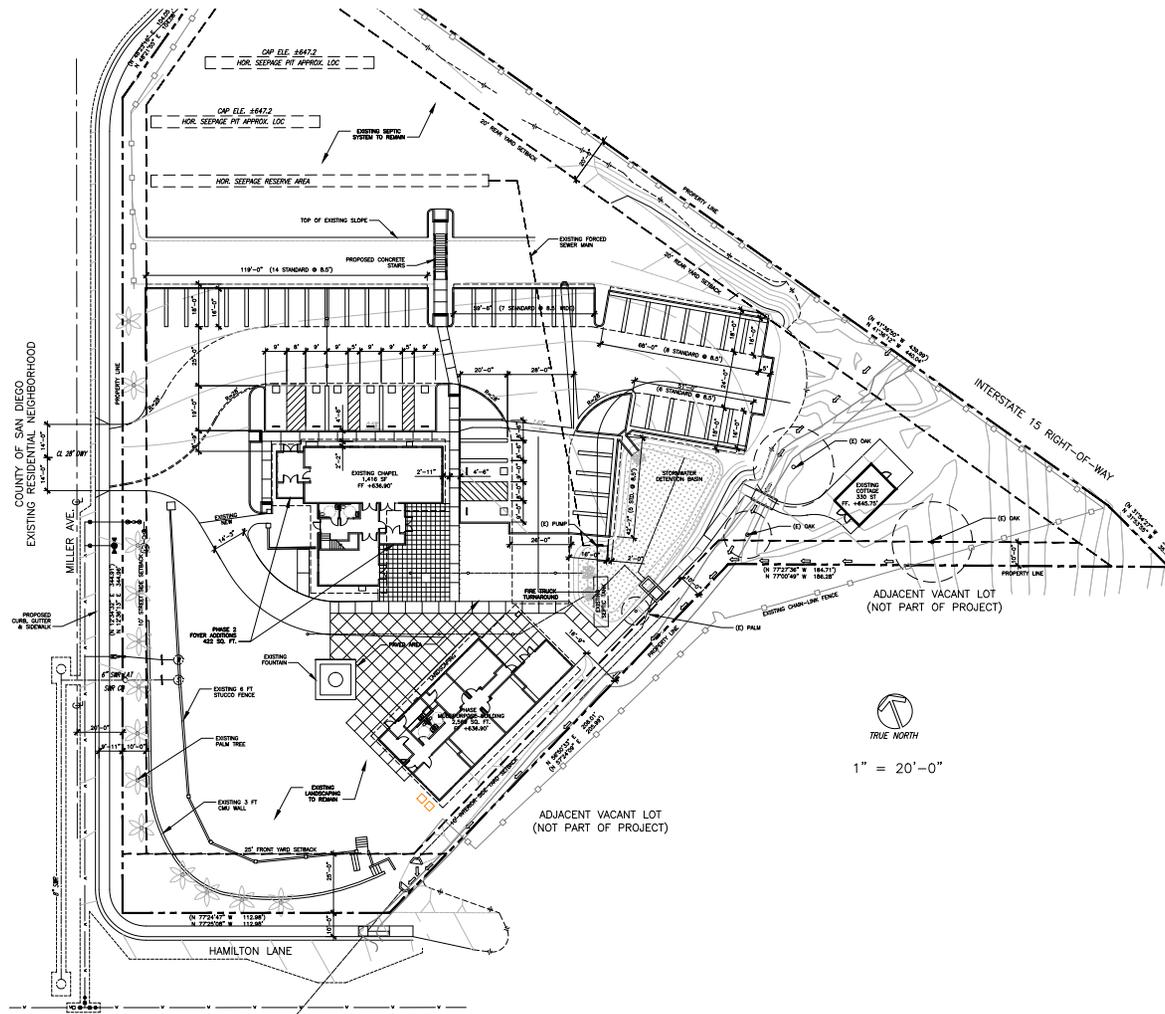


FIGURE 4: Proposed Chalice Unitarian Universalist Congregation Site Development Map (Bussett Architecture 7/16)



Noise can be represented as a superposition of periodic waves with a large number of components, and is defined as unwanted or annoying sound that interferes with, or disrupts, normal activities. Although exposure to high noise levels has been demonstrated to cause hearing loss, the principal human response to environmental noise is annoyance. The response of individuals to similar noise events is diverse and is influenced by the type of noise, its perceived importance, the time of day, and the sensitivity of the individual hearing the sound.

The loudest sounds that the human ear can hear comfortably are approximately one trillion (or 1×10^{12}) times the acoustic energy that the ear can barely detect. Because of this vast range, any attempt to represent the acoustic intensity of a particular sound on a linear scale becomes unwieldy. As a result, a logarithmic ratio, originally conceived for radio work, known as the decibel (dB), is commonly employed.²

A sound level of zero "0" dB is scaled such that it is defined as the threshold of human hearing, and would be barely audible to a human of normal hearing under extremely quiet listening conditions. Sound levels above 120 dB roughly correspond to the threshold of pain. The minimum change in sound level that the human ear can detect is approximately 3.0 dBA.³ A change in sound level of 10 dB is usually perceived by the average person as a doubling (or halving) of the sound's loudness.⁴ A change in sound level of 10 dB actually represents an approximate 90 percent change in the sound intensity, but only about a 50 percent change in the perceived loudness. This is due to the nonlinear response of the human ear to sound.

As mentioned above, most of the sounds we hear in the environment do not consist of a single frequency, but rather a broad band of frequencies differing in sound level. The intensities of each frequency add to generate the sound we hear. The method commonly used to quantify environmental sounds, consists of determining all of the frequencies of a sound according to a weighting system that reflects the nonlinear response characteristics of the human ear. This is called "A" weighting, and the decibel level measured is called the A-weighted sound level (or dBA). In practice, the level of a noise source is conveniently measured using a sound level meter that includes a filter corresponding to the dBA curve.

Although the A-weighted sound level may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a conglomeration of sounds from distant sources that

² A unit used to express the relative magnitude of a sound wave. This level is defined as being equal to 20 times the common logarithm of the ratio of the pressure produced by a sound wave of interest, to a 'reference' pressure wave equal to 20 micro Pascal's (μPa) measured at a distance of 1 meter. 20 μPa is the smallest amount of pressure capable of producing the sensation of hearing in a human.

³ Every 3 dB equates to a 50% drop (or increase) in wave strength; therefore a 6 dB drop/increase = a loss/increase of 75% of total signal strength and so on.

⁴ This is a subjective reference based upon the nonlinear nature of the human ear.

create a relatively steady background noise in which no particular source is identifiable. For this type of noise, a single descriptor called the Leq (or equivalent sound level) is used. Leq is the energy-mean A-weighted sound level during a measured time interval, and would be defined mathematically by the following continuous integral,

$$L_{eq} = 10 \text{Log}_{10} \left[\frac{1}{T} \int_0^T \text{SPL}(t)^2 dt \right]$$

In the previous expression, L_{eq} is the energy equivalent sound level, t is the independent variable of time, T is the total time interval of the event, and, SPL is the sound pressure level *re.* $20 \mu\text{Pa}$. Thus, L_{eq} is the ‘equivalent’ constant sound level that would have to be produced by a given source to equal the average of the fluctuating level measured. For most acoustical studies, the study interval is generally taken as one-hour and the abbreviation used is L_{eq-h} or $L_{eq(h)}$; however, other time intervals are utilized depending on the jurisdictional preference.

To describe the time-varying character of environmental noise, the statistical noise descriptors L_{10} and L_{90} are commonly used. They are the noise levels equaled or exceeded during 10 percent and 90 percent of a stated time. Sound levels associated with the L_{10} typically describe transient or short-term events, while levels associated with the L_{90} describe the steady state (or most prevalent) noise conditions. In addition, it is often desirable to know the acoustic range of the noise source being measured. This is accomplished through the maximum and minimum measured sound level (L_{max} and L_{min}) indicators. The L_{min} value obtained for a particular monitoring location is often called the *acoustic floor* for that location.

The aggregate of all community noise events are typically averaged into a single value known as the *Community Noise Equivalent Level* (CNEL). This descriptor is calculated by averaging all events over a specified time interval, and applying a 5-dBA penalty to any sounds occurring between 7:00 p.m. and 10:00 p.m., and a 10-dBA penalty to sounds that occur during nighttime hours (i.e., 10 p.m. to 7 a.m.). This penalty is applied to compensate for the increased sensitivity to noise during the quieter nighttime hours.

Mathematically, CNEL can be derived based upon the hourly L_{eq} values, via the following expression where, $L_{eq(x)}_i$ is the equivalent sound level during period x at time interval i , and n is the number of time intervals:

$$CNEL = 10 \text{Log}_{10} \frac{1}{n} \sum_{i=1}^n \left(10^{\frac{Leq(day)_i}{10}} + 10^{\frac{Leq(evening+5)_i}{10}} + 10^{\frac{Leq(night+10)_i}{10}} \right)$$



ENVIRONMENTAL SIGNIFICANCE THRESHOLDS

City of Escondido General Plan Noise Regulations

The City of Escondido, through its Noise Element of the General Plan and Community Protection Element, has established criteria for compatibility of exterior noise for various land uses, as shown in Table 1 on the following page. Sound levels up to 60 dBA CNEL are considered in de facto compliance with the proposed land use (i.e., normally acceptable). Exterior levels up to 70 dBA CNEL are considered compatible with applicable acoustical analyses (i.e., conditionally acceptable).

Thus for the purposes of analysis, the project will be analyzed with respect to the City's 70 dBA CNEL land use threshold for churches with additional attention being placed on developing Best Mitigation Practices (BMP) to further reduce sound towards the 60 dBA CNEL goal.

State of California CCR Title 24

The California Code of Regulations (CCR), State Building Code, Part 2, Title 24, Appendix Chapter 35; "*Noise Insulation Standards for Multifamily Housing*" requires that multi-family dwellings, hotels, and motels, located where the CNEL exceeds 60 dBA, require an acoustical analysis showing that the proposed design will limit interior noise to less than 45 dBA CNEL for all residential spaces, and typically 50 dBA CNEL for office spaces and uses similar to the proposed project.⁵

Worst-case noise levels, either existing or future, must be used. The City of Escondido has adopted the CCR Title 24 regulations for all types of dwellings under their jurisdiction.

City of Escondido Construction Noise Ordinance Regulations

Construction grading noise within the City of Escondido is regulated under Ordinance Section 17-238. The relevant parts are cited below.

- It shall be unlawful for any person, including the City of Escondido, to do any authorized grading at any construction site, except on Mondays through Fridays during a week between the hours of 7:00 a.m. and 6:00 p.m. and, provided a variance has been obtained in advance from the City Manager, on Saturdays from 10:00 a.m. to 5:00 p.m.
- For the purpose of this section, "grading" shall include, but not be limited to, compacting, drilling, rock crushing or splitting, bulldozing, clearing, dredging, digging, filling and blasting.

⁵ This standard is also codified in the 2013 version of the California Code of Regulations, Title 24, Part 2, Volume 1, Chapter 12 – Interior Environment, Section 1207 et. seq.

- In addition, any equipment used for grading shall not be operated so as to cause noise in excess of a one-hour sound level limit of 75 dB at any time when measured at or within the property lines of any property which is developed and used in whole or in part for residential purposes, unless a variance has been obtained in advance from the City Manager.

Thus, for the purposes of analysis within this report, construction grading noise will have a threshold of significance of 75 dBA L_{eq-h} and be limited to the normal hours of 7:00 a.m. through 6:00 p.m. weekdays, and 10:00 a.m. to 5:00 p.m. on Saturday.

TABLE 1: City of Escondido Land Use Compatibility Matrix

Land Use Category	Exterior Noise Level (CNEL)						
	55	60	65	70	75	80	
Residential							
Transient Lodging, Motels, Hotels							
Schools, Libraries, Churches, Hospitals, Nursing Homes							
Auditoriums, Concert Halls, Amphitheaters							
Sports Arena, Outdoor Spectator Sports							
Playgrounds, Neighborhood Parks							
Golf Courses, Riding Stables, Water Recreation, Cemeteries							
Office Buildings, Business Commercial, Professional							
Industrial, Manufacturing, Utilities, Agriculture							

- NORMALLY ACCEPTABLE** - Specified land use is satisfactory, based upon the assumption that buildings involved are of normal conventional construction, without any special noise insulation requirements.
- CONDITIONALLY ACCEPTABLE** - New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design.
- NORMALLY UNACCEPTABLE** - New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made with noise insulation features included in the design.
- CLEARLY UNACCEPTABLE** - New construction or development clearly should not be undertaken.





APPROACH AND METHODOLOGY

Field Acoustical Reconnaissance

On November 18, 2016, an independent monitoring location was selected within the Chalice U.U. development site for the purpose of determining the ambient baseline community noise level during normal free-flow weekday traffic conditions along I-15. The instrumentation location, denoted as Monitoring Location ML 1, is shown in Figure 5 on Page 11 of this report, while photos of the test setup are provided in Figure 6 on Page 12.

For the monitoring effort, a Quest SoundPro SP-DL-2 ANSI Type 2 integrating sound level meter was used as the data collection device. The meter was affixed to a tripod five-feet above ground level, in order to simulate the noise exposure of an average-height human being. All equipment was calibrated prior to field deployment.⁶

Construction Noise Impact Assessment Approach

Major construction noise emission generators expected within the project site would consist predominately of diesel-powered earthwork equipment required for minimal onsite grading activities, underground work, and surface paving, as well as for necessary improvements to Miller Avenue.

Construction noise present at the project site was based upon EPA recommended values, and past levels measured by ISE.⁷ Cumulative (i.e., worst case aggregate) noise levels were calculated for a range of expected emissions from proposed equipment at the closest sensitive receptor, under spherically-soft ground propagation conditions, and compared against the aforementioned City of Escondido Ordinance Section 17-238 thresholds.

Traffic Noise Impact Assessment Approach

The ISE *RoadNoise v2.5* traffic noise prediction model, which is based upon the Federal Highway Administration's RD-77-108 Noise Prediction Model with FHWA/CA/TL-87/03 noise emission factors, was used to calculate the expected vehicular traffic noise levels affecting the project site under a future worst-case condition.⁸ The model assumed a 3.0-dBA loss per doubling of distance (DD) propagation rule, and a 95/3/2 mix of automobiles/midsize vehicles/trucks, thereby yielding a representative worst-case noise contour set.

⁶ Testing and calibration was performed by ISE's *Acoustics and Vibration Laboratory* in conformance with ANSI S1-4 1983 Type 2 and IEC 651 Type 2 standards using a rubidium atomic frequency and time standard traceable to National Institute of Standards & Technology (NIST). The time and frequency calibration signal has a long-term stability of 10⁻¹⁰. Specifications for traceability can be obtained at www.nist.gov.

⁷ Source: EPA PB 206717, Environmental Protection Agency, 12/31/71, "Noise from Construction Equipment and Operations"

⁸ Source: County of San Diego GP 2020 / SANDAG horizon year 2030 traffic volume predictions, 1/15.

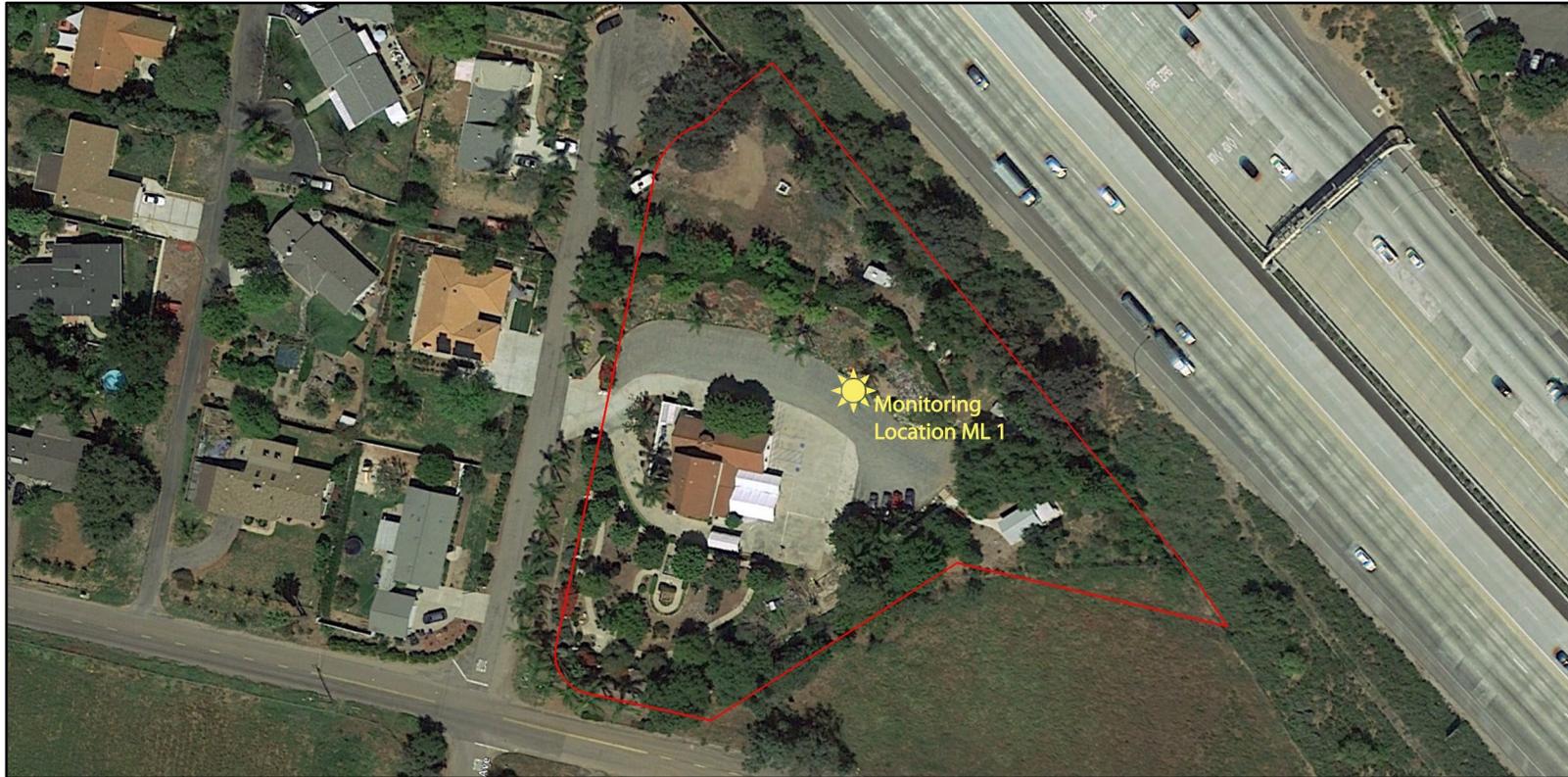


FIGURE 5: Ambient Noise Monitoring Location ML 1 (ISE 11/16)

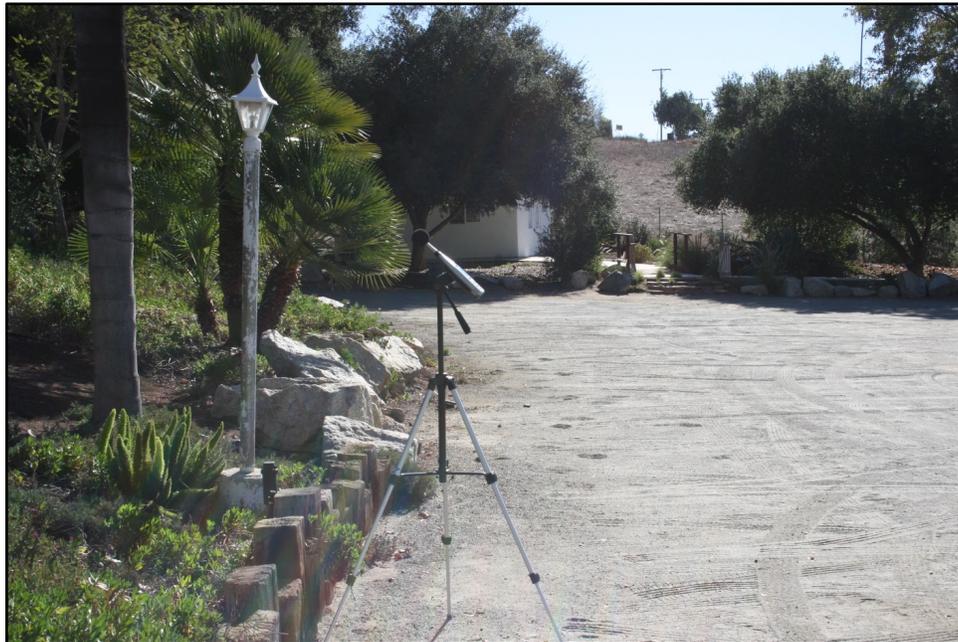


FIGURE 6: Ambient Monitoring Photos for Station ML 1 (ISE 11/16)

Onsite Noise Impact Potential

Onsite noise generation due to the proposed Chalice U.U. Congregation project was examined for consistency with the applicable community standards identified in Table 1 above. Sources found to exceed the applicable standards would require appropriate mitigation measures.



FINDINGS AND RECOMMENDATIONS

Field Acoustical Reconnaissance Findings

The results of the field reconnaissance sound level monitoring are shown in Table 2, below, with the field data record provided as attachment APP 1 to this report. The values for the equivalent sound level (L_{eq-h}), the maximum and minimum measured sound levels (L_{max} and L_{min}), and the statistical indicators L_{10} and L_{90} , are given for the monitoring location examined.

TABLE 2: Measured Ambient Sound Levels – Chalice Unitarian Universalist Congregation

Location	Start Time	One-Hour Noise Level Descriptors in dBA				
		L_{eq}	L_{max}	L_{min}	L_{10}	L_{90}
ML 1	9:00 a.m.	61.8	70.4	53.8	63.8	59.2

Monitoring Location:

Location ML 1: GPS: CA-VI 6307400.8 1977055.9.

Measurements performed by ISE on 11/18/16.

EPE = Estimated GPS Position Error = 19 ft.

Temperature = 80.2 °F. Relative Humidity = 20.0 %. Barometric Pressure = 29.95 in-Hg.

Measurements collected reflect the ambient daytime community sound levels at the proposed project site during morning rush-hour conditions along I-15. As can be seen, the hourly average sound level (or L_{eq-h}) recorded over the monitoring period was 61.8 dBA, and was observed to be entirely due to traffic noise along I-15. These levels were found to currently be in compliance with the City’s conditionally acceptable standards for the observed community setting.

Construction Noise Emission Levels

The estimated worst-case construction vehicle noise emissions are provided in Table 3 on the following page. Construction within the proposed project area would typically occur between the hours of 7:00 a.m. and 3:00 p.m. Monday through Friday. The nearest sensitive residential receptor line would be, at a minimum, approximately 75-feet from any construction activity as currently understood by ISE.



TABLE 3: Aggregate Construction Noise Levels at Project Site

Equipment Type Model	Selected EPA Tier Level	Quantity Used (#)	Source Level at 50 Feet at Full Load (dBA)	Average Load Factor (%)	Duty Cycle per Hour	Cumulative Effect at 50 Feet (dBA Leq _h)
Push Dozer D10T	3	1	75	20	1	68.0
Dozer D6T LGP w/ Attachments	3	1	75	20	1	68.0
Water Truck	3	1	70	40	0.5	63.0
Worst-Case Aggregate Sum @ 50 Ft. (Σ):						71.7
Leq_h at Receptor Area 75-Foot Distant:						67.3

Source: EPA PB 206717, Environmental Protection Agency, 12/31/71, "Noise from Construction Equipment and Operations"



Onsite construction would consist primarily of development of the expansion structures, grading for the parking lot and storm water detention basins, and landscaping. These activities are expected to generate approximately 2,000 cubic-yards of material export from the site over the multi-year development timeframe. Improvements to Miller Avenue would include the installation of a new water main and fire hydrant and the undergrounding of electrical service.

As can be seen from the above table, predicted aggregate worst-case construction noise levels could be as high as 71.7 dBA Leq_h at 50-feet, with a resultant receptor level of 67.3 dBA Leq_h or less, at the closest property line interface. This level is below the City of Escondido construction noise abatement threshold and is not expected to generate impacts, nor require remedial mitigation measures.⁹

Future Traffic Noise Impacts to Site

Existing Site Attenuation

Existing traffic volumes along the section of I-15 immediately adjacent to the project site have been measured by Caltrans at a level of 195,000 average daily trips (ADT).¹⁰ This produces the following source noise levels, as predicted by the ISE RoadNoise v2.5 traffic noise prediction model, and as shown in the first row of Table 4, below. Source levels immediately adjacent to the freeway edge would be expected to be as high as 86 dBA CNEL.

TABLE 4: Predicted I-15 Project Area Traffic Noise Levels (2014 vis. 2030)

Roadway	Segment	ADT	Speed MPH	CNEL at 50 ft	75 dBA CNEL Distance	65 dBA CNEL Distance	60 dBA CNEL Distance
I-15	Escondido, S Jct. Of Centre City Pkwy (Existing Year 2014)	195,000	65	86.0 dBA	629 ft	6,295 ft	19,905 ft
I-15	Escondido, S Jct. Of Centre City Pkwy (Future Year 2030)	226,200	65	86.7 dBA	740 ft	7,396 ft	23,387 ft

Field-testing results, previously shown in Table 2 above, indicated peak hour noise levels within the subject property of 61.8 dBA approximately 175-feet from the freeway edge and behind intervening slope topography.

⁹ This level is also consistent with surrounding parcels per the County of San Diego Noise Ordinance Sections 36.409 through 36.410.

¹⁰ Source: Annual average daily traffic volumes (AADT) for all vehicles on California State Highways, Caltrans Traffic Data Branch, 2014.



Correcting for distance, the effective attenuation of the intervening topography between the freeway edge and the subject property can be calculated as:

$$\begin{aligned}\text{attenuation} &= 86 \text{ dBA} - 61.8 \text{ dBA} - 10 \text{Log}_{10} \left(\frac{175}{50} \right) \\ &= 86 - 61.8 - 10 \text{Log}_{10} (3.5) \\ &= 18.7 \text{ dBA}\end{aligned}$$

Thus, the topographic attenuation due to the slope edge could be as high as roughly 18.7 dBA. This level was observed to be more than adequate to mitigate existing traffic noise from I-15 to the project site.

Anticipated Impacts under Future Traffic Noise Conditions

Under a future worst-case traffic condition, it can be assumed that some potential increase in traffic volume along I-15 would be expected. Following a SANDAG suggested procedure for predicting future traffic volumes by adding a one-percent (1%) increase to existing volumes for each year into the future, gives a future horizon year 2030 traffic volume of approximately 226,200 ADT for this roadway segment. The maximum travel speed immediately adjacent to the project site was assumed to be unchanged, and continuing to be 65 MPH.

As can be seen from the second row of Table 4 above, this worst-case increase in traffic volume would equate to an approximate CNEL increase of 0.7 dBA. This increase in community noise level would be considered acoustically negligible, and would, under the same level of observed slope attenuation, produce a final exterior noise level at the project site of 62.5 dBA CNEL.

This would not be deemed an impact as previously defined under Table 1. Thus, no future traffic noise impacts to the proposed Chalice U.U. Congregation expansion are anticipated.

Noise Generation Potential from Onsite Activities

The proposed Chalice U.U. Congregation would be comprised of passive low impact congregational uses. Onsite exterior noise sources would be generated from pedestrian activity in front of the facility (i.e., within the parking lot), and vehicular noise attributed to the arrival and departure of its members.

Normal attendance would typically consist of two Sunday services with a total of 65 to 112 adults, and 20 children, during the hours of 8:00 a.m. to 2:00 p.m. On weekdays the site maintains minimal staffing, consisting of roughly four employees between the hours of 8:00 a.m. and 6:00 p.m.

Additionally, various committee activities would occur on weekdays from 6:00 p.m. to 10:00 p.m., and on Saturdays from 8:00 a.m. to 6:00 p.m. Maximum occupancy of the committee meetings varies, but is typically around a dozen individuals.

Activities inside the proposed Chalice U.U. Congregation expansion building would consist of normal human vocalization and music, as well a community noise produced by the congregational members (i.e., talking and singing). Past work performed by ISE has measured active church events reaching levels as high as 65 to 70 dBA close to the source. These levels would be easily mitigated by the existing structural shell of the proposed building (i.e., transmission losses of between 20 to 25 dBA minimum are expected).

None of the aforementioned activities would produce noise levels emanating from the site in excess of the allowable standards established by the City. No significant onsite noise generation from the Chalice U.U. Congregation site is expected; thus, no human-generated significant noise impacts to surrounding uses are anticipated.

Finally, operation of any proposed HVAC equipment would consist of the existing non-discretionary residential heat pump units. These units typically produce intermittent noise associated with the specific interior cooling demands. Source levels for these units typically average 70 dBA at 3.0 feet from the source, based upon past work performed by ISE. These types of units would not be deemed as impactful.





CERTIFICATION OF ACCURACY AND QUALIFICATIONS

This report was prepared by Investigative Science and Engineering, Inc. (ISE). The members of its professional staff contributing to the report are listed below:

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ISE affirms to the best of its knowledge and belief that the statements and information contained herein are in all respects true and correct as of the date of this report. Content and information contained within this report is intended only for the subject project and is protected under 17 U.S.C. §§ 101 through 810.

Should the reader have any questions regarding the findings and conclusions presented in this report, please do not hesitate to contact ISE at (760) 787-0016.

Approved as to Form and Content:

Rick Tavares, Ph.D.

Project Principal
Investigative Science and Engineering, Inc. (ISE)





APPENDICIES AND SUPPLEMENTAL INFORMATION

APP 1 – Field Reconnaissance Measurement Results

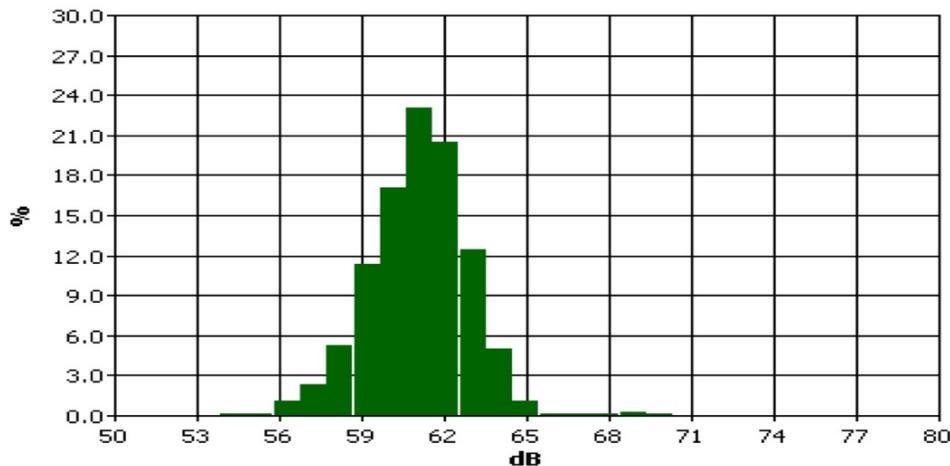
Information Panel

Name CHALICE UU
 Start Time Friday, November 18, 2016 09:07:42
 Stop Time Friday, November 18, 2016 10:07:44
 Device Model Type SoundPro DL
 Comments

General Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	61.8 dB	Exchange Rate	1	3 dB
Weighting	1	A	Response	1	SLOW
Bandwidth	1	OFF	Exchange Rate	2	3 dB
Weighting	2	C	Response	2	FAST

Statistics Chart



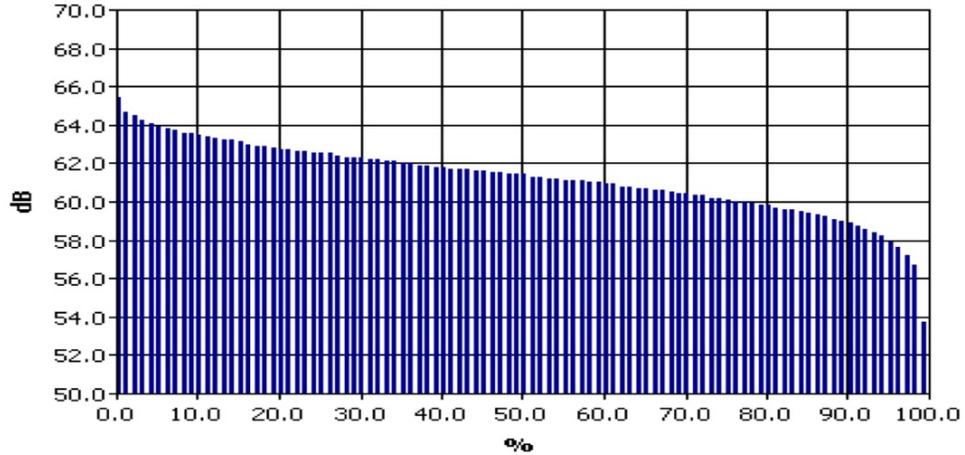
Statistics Table

dB	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
51.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
52.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
54.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
55.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
56.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	1.1
57.0	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	2.3
58.0	0.3	0.4	0.5	0.4	0.5	0.5	0.6	0.6	0.5	0.8	5.2
59.0	0.8	0.8	0.9	1.0	1.1	1.2	1.2	1.5	1.4	1.5	11.3
60.0	1.7	1.7	1.2	1.6	1.9	1.7	1.6	1.7	1.9	2.0	17.1
61.0	2.4	2.1	2.3	2.3	2.2	2.4	2.3	2.3	2.4	2.3	23.0
62.0	2.1	1.9	2.1	2.2	2.3	1.9	2.2	2.2	1.8	1.6	20.4
63.0	1.4	1.6	1.1	1.2	1.2	1.2	1.3	1.2	1.1	1.1	12.4
64.0	0.8	0.7	0.7	0.6	0.4	0.4	0.4	0.4	0.3	0.2	5.0
65.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	1.1
66.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
67.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
68.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
69.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
70.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
71.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
72.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
73.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
74.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
76.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Statistics Table (cont'd)

dB	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
77.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
78.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
79.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Exceedance Chart



Exceedance Table

	0%	1%	2%	3%	4%	5%	6%	7%	8%	9%
0%		65.4	64.7	64.5	64.2	64.1	63.9	63.8	63.7	63.6
10%	63.6	63.5	63.4	63.3	63.2	63.2	63.1	63.0	62.9	62.9
20%	62.8	62.7	62.7	62.6	62.6	62.5	62.5	62.5	62.4	62.3
30%	62.3	62.3	62.2	62.2	62.1	62.1	62.0	62.0	61.9	61.9
40%	61.8	61.8	61.7	61.7	61.7	61.6	61.6	61.5	61.5	61.4
50%	61.4	61.4	61.3	61.3	61.2	61.2	61.1	61.1	61.1	61.0
60%	61.0	60.9	60.9	60.8	60.8	60.7	60.7	60.6	60.6	60.5
70%	60.4	60.4	60.3	60.3	60.2	60.2	60.1	60.0	60.0	59.9
80%	59.8	59.8	59.7	59.6	59.6	59.5	59.4	59.3	59.2	59.1
90%	59.0	58.9	58.7	58.6	58.4	58.2	57.9	57.6	57.2	56.7
100%	53.7									





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