



# INVESTIGATIVE SCIENCE AND ENGINEERING, INC

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August 19, 2005 (Revised)

Mr. Alex H. Jewell, AICP  
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RBF Consulting  
9755 Clairemont Mesa Boulevard, Suite 100  
San Diego, California 92124-1324

**RE: ACOUSTICAL SITE ASSESSMENT  
DAI DANG MEDITATION CENTER – SAN DIEGO CA  
ISE REPORT #05-055**

Dear Mr. Jewell:

At your request, Investigative Science and Engineering (ISE) have performed an acoustical site assessment of the proposed Dai Dang Meditation Center site expansion located in the County of San Diego, California. The results of that survey, as well as predicted future noise levels at the project site, are presented in this letter report.



## INTRODUCTION AND DEFINITIONS

### Existing Site Characterization

The project site is located at 6326 Camino Del Rey in the unincorporated community of Bonsall in northern San Diego County. The project site is located west of Interstate 15, north of Gopher Canyon Road, and east of the San Luis Rey Golf Resort as shown in Figure 1. The property is located approximately one-quarter mile east of the Camino Del Rey and West Lilac Road intersection. The Assessor's Parcel Number (APN) for the property is 127-460-14.

The project site is approximately 9-acres in size and is located in the central part of Bonsall where the land uses consist of mostly single-family estate type residential homes and/or agricultural uses (refer to Figure 2 on Page 3 of this report). The project property is surrounded on three sides with lots that have mixed uses that combine single-family residential homes with agricultural uses. Camino Del Rey borders the property to the immediate south. The site is located within the Bonsall Community Plan area and is zoned A70 Limited Agricultural with a General Plan designation of 19 Intensive Agriculture. Elevations onsite range from 225 feet to 400 feet above mean sea level. The lowest elevation occurs within the southern portion of the site along Camino Del Rey, and the highest elevation is in the northern portion of the site.

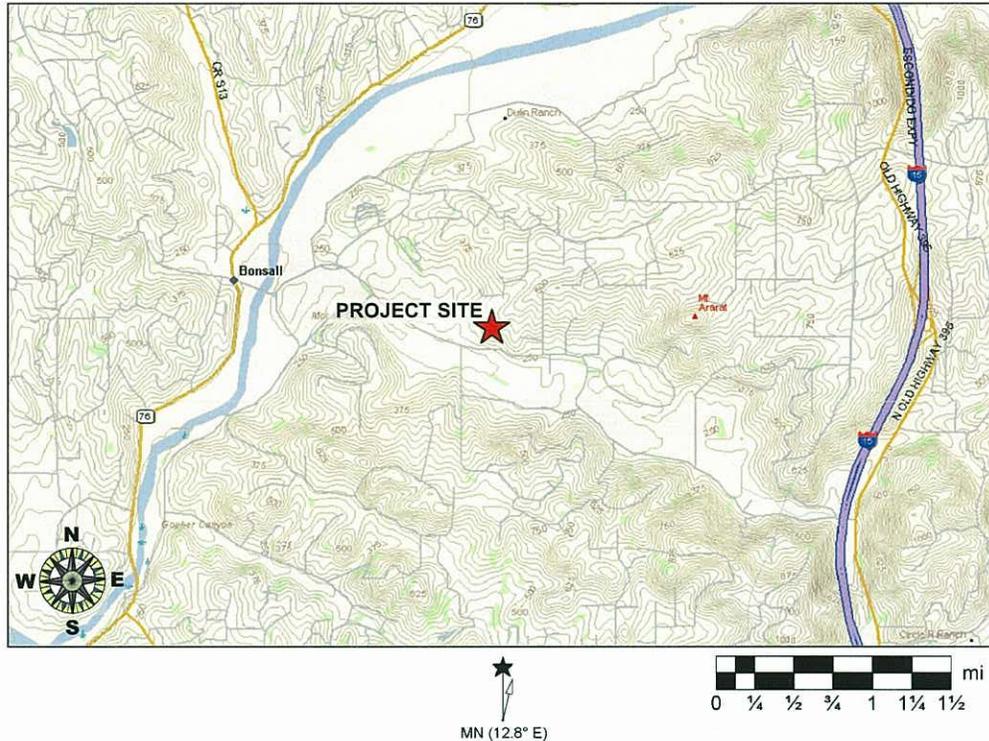


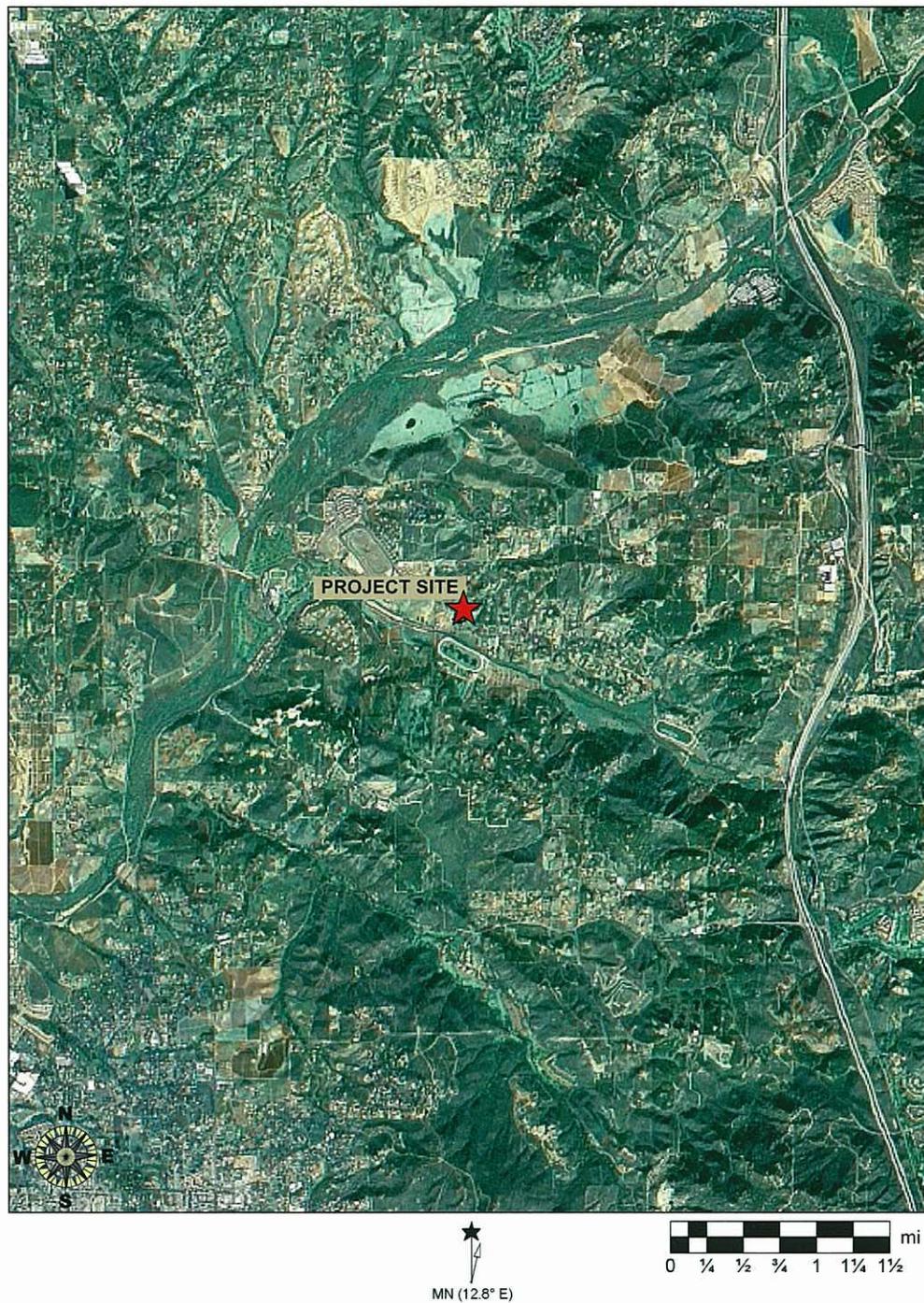
FIGURE 1: Project Vicinity Map (ISE 4/05)

### Project Description

The project proposes to develop a Vietnamese Buddhist Meditation Center on the project site to house the Buddhist monks that live at the site, a kitchen and dining hall for the monks, and a main worship hall and a meditation room for use by the monks and visitors. The project is considered a religious assembly land use and requires approval of a Major Use Permit from the County of San Diego per Section 2705 of the County Zoning Ordinance. The project site development plan can be seen in Figure 3 on Page 4 of this report.

The new development site will occupy approximately 3.12 acres at the upper north portion of the property. This development includes three new buildings:

- o The main hall is a partial two story building totaling 6,196 square feet with the general building height of 35 ft and an architectural feature having a maximum height of 42 feet from the foundation. The main hall has a large room for congregational assemblies, an altar located in the central portion of the building, some office areas, and a restroom. The second story contains approximately 1,440 square feet of additional office space plus a rest room.



**FIGURE 2: Project Site Satellite / Aerial Photographs – (© CNES 2004)**

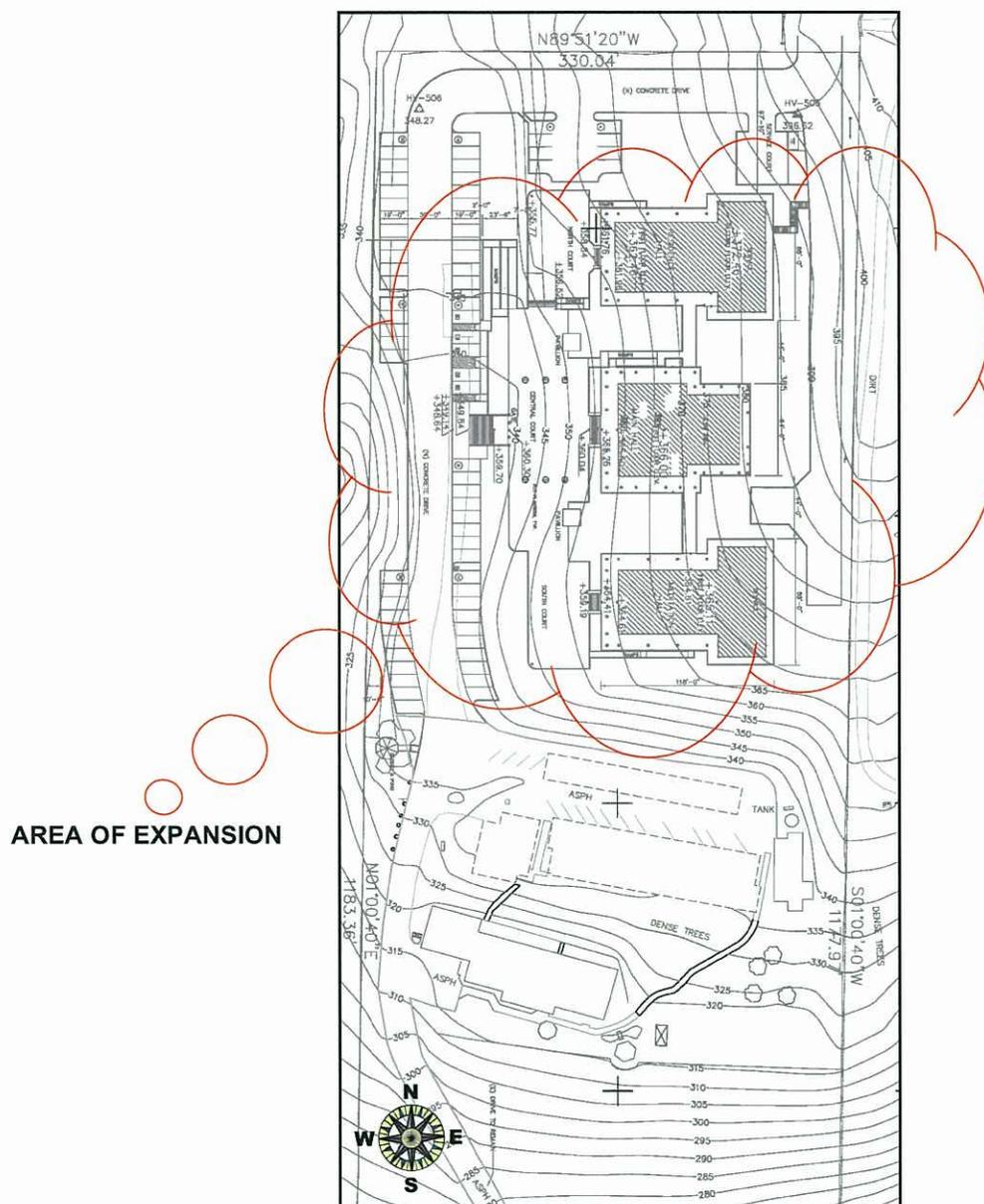


FIGURE 3: Dai Dang Meditation Center Site Plan (DLA Design Center, 8/05)

- o The meditation hall is a partial two story building totaling 7,664 square feet with architectural features having a maximum height of 29 feet from the foundation. The meditation hall has a large main room with an altar at the east end for congregational assembly and meditation. The east end of the building will have approximately 1,725 square feet of space designated as multi use room. This area will serve as the temporary kitchen and dining hall until the permanent facilities are constructed as

part of the residence quarters. This portion of the building also contains separate men and women's restroom areas. The second floor contains approximately 2,430 square feet of office space, plus a restroom.

- o The residence hall will have residential quarters, a kitchen, and a library totaling 8,936 square feet, with a maximum height of 33 feet from the foundation. The two-story split level building will have a first floor layout consisting of six single bedrooms (approximately 220 square feet each), three multi-purpose rooms totaling approximately 900 square feet, a laundry room, a locker room, and a communal bathroom. The second story will have six single bedrooms (approximately 220 square feet each), a library with research and scripture rooms totaling approximately 900 square feet, a communal bathroom, plus an isolation bedroom with a private bathroom (150 square feet total). The east end of the building contains a 450 square foot office and reception area, a 325 square foot kitchen connected to a 1,055 square foot dining area. The kitchen has additional areas such as smaller rooms to be used for storage, pantries, and refrigeration.

These buildings will be connected with walkways, gardens, courtyards, and landscaping. The building layout and design were chosen to create an environment that is conducive to Buddhist teachings and mediation and consistent with serenity and solitude. Each building entrance accesses a landscaped courtyard. A landscaped water feature is proposed between the main hall and meditation hall. Other improvements include:

- o A twenty foot paved driveway that connects the proposed parking lot to Camino Del Rey;
- o A new parking lot with approximately 72 parking spaces including 5 handicap accessible spaces will be provided;
- o The existing monks' quarters and administrative operation in the main house will move into the new facility. The main house will be converted into a library and study rooms. The upgrading of the existing structures can be completed as a second phase of a planned property improvement; and,
- o The existing monks quarters, feed storage building will be converted into storage facilities for the meditation center.

The Buddhist Meditation Center is open to the public on Sundays between 9 AM and 3 PM for a silent one-hour meditation, a silent Communal Lunch, and a question and answer period with the headmaster. The proposed project is expected to produce 24 average daily trips with only four peak hour trips on weekdays and approximately 50 Sunday trips from the general public.

The Meditation Center proposes to have four (4) special events a year. These events generally coincide with Buddhist religious holidays and cultural observances. Generally, these events include 200 to 300 people each and will involve special activities related to the Buddhist teachings. The events will take place on the project site. These activities will not include the use of electronic outdoor sound amplification.

## Acoustical Definitions

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. Whether this surface is the vibrating string of a violin or a person's vocal cords, a vibrating column of air from an organ or clarinet, or a vibrating panel from a loudspeaker, drum, or aircraft, the sound waves generated are all similar. All of these vibrating elements alternately compress the surrounding air during forward motion and expand it on the 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. Sound waves, if unimpeded, will spread out in all directions from a source. Upon entering the auditory organs, these waves produce the sensation of sound. Waveforms that are approximately periodic or consist of a small number of periodic components can give rise to a pleasant sensation (assuming the intensity is not too high), for example, as in a musical composition. Noise, on the other hand, can be represented as a superposition of periodic waves with a large number of components.

Noise is generally defined as unwanted or annoying sound that is typically associated with human activity and which 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 influenced by the type of noise, the perceived importance of the noise and its appropriateness in the setting, the time of day, and the sensitivity of the individual hearing the sound.

Airborne sound is a rapid fluctuation of air pressure above and below atmospheric levels. The loudest sounds that the human ear can hear comfortably are approximately one trillion (or  $1 \times 10^{12}$ ) 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.

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. Such conditions can only be generated in anechoic or "dead rooms". Typically, the quietest environmental conditions (extreme rural areas with extensive shielding) yield sound levels of approximately 20 dB. Normal speech has a sound level of approximately 60 dB. Sound levels above 120 dB roughly correspond to the threshold of pain and would be associated with sources such as jet engine noise or pneumatic equipment.

The minimum change in sound level that the human ear can detect is approximately 3 dB. A change in sound level of 10 dB is usually perceived by the average person as a doubling (or halving) of the sounds loudness. 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 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. It 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 is abbreviated *Leq-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 L10, L50, and L90 are commonly used. They are the noise levels equaled or exceeded during 10 percent, 50 percent, and 90 percent of a stated time. Sound levels associated with the L10 typically describe transient or short-term events, while levels associated with the L90 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 (Lmax and Lmin) indicators. The Lmin value obtained for a particular monitoring location is often called the *acoustic floor* for that location.

Another sound measure employed by the State of California and the County of San Diego is known as the Community Noise Equivalence Level (CNEL) is defined as the "A" weighted average sound level for a 24-hour day. It is calculated by adding a 5-decibel penalty to sound levels in the evening (7:00 p.m. to 10:00 p.m.), and a 10-decibel penalty to sound levels in the night (10:00 p.m. to 7:00 a.m.) to compensate for the increased sensitivity to noise during the quieter evening and nighttime hours.



## **APPLICABLE SIGNIFICANCE CRITERIA**

### **Construction Noise Impact Thresholds**

The County of San Diego Noise Ordinance Section 36.410 governs construction noise emissions. The relevant parts are cited below.

- (a) It shall be unlawful for any person to operate construction equipment between the hours of 7 p.m. of any day and 7 a.m. of the following day.
- (b) It shall also be unlawful for any person to operate construction equipment on Sundays, and days appointed by the President, Governor, or the Board of Supervisors for a public fast, Thanksgiving, or holiday, but a person may operate construction equipment on the above-specified days between the hours of 10 a.m. and 5 p.m. at his residence or for the purpose of constructing a residence for himself, provided that the average sound level does not exceed 75 decibels during the period of operation and that the operation of construction equipment is not carried out for profit or livelihood
- (c) It shall also be unlawful to operate any construction equipment so as to cause at or beyond the property line of any property upon which a legal dwelling unit is located an average sound level greater than 75 decibels between the hours of 7 a.m. and 7 p.m.

### **Vehicular/Transportation Noise Impact Thresholds**

Transportation noise levels, such as those produced by vehicles traveling to and from the project site, are governed under the County of San Diego Policy 4b in the Noise Element of the County's General Plan. The relevant sections of the Noise Element are cited below and would apply to County defined "Noise Sensitive Areas" applicable to Paragraph 1 through 4 of Policy 4b.

1. "Noise Sensitive Area" means the building site of any residence, hospital, school, library, or similar facility where quiet is an important attribute of the environment.
2. Whenever possible, development in San Diego County should be planned and constructed so that noise sensitive areas are not subject to noise levels in excess of 55 dBA CNEL.
3. Whenever it appears that new development will result in any (existing or future) noise sensitive areas being subjected to noise levels in excess of 60 dBA CNEL or greater, an acoustical study should be required.
4. If the acoustical study shows that noise levels at any noise sensitive areas will exceed 60 dBA CNEL, the development should not be approved unless the following findings are made:
  - a) Modifications to the development have been or will be made which reduce the exterior noise level below 60 dBA CNEL; or,
  - b) If, with the current noise abatement technology, it is infeasible to reduce the exterior CNEL to 60 dBA, then modifications to the development will be made

which reduce interior noise below a CNEL equal to 45 dBA. Particular attention shall be given to noise sensitive interior spaces such as bedrooms; and,

- c) If finding 'b' above is made, a further finding will be made that there are specifically identified overriding social or economic considerations which warrant approval of the development without modifications as described in 'a' above.
- 4) If the acoustical study shows that the noise levels at any noise sensitive areas will exceed 75 dBA CNEL; the development should not be approved.
- 5) Interior noise levels should not exceed 45 dBA CNEL within any habitable living space of any residential unit.
- 6) For rooms in "Noise Sensitive Areas", which are usually occupied only a part of the day (schools, libraries, or similar), the interior one-hour average sound level, due to noise outside, should not exceed 50 decibels

#### **State of California CCR Title 24**

The California Code of Regulations (CCR), Title 24, Noise Insulation Standards, states that multi-family dwellings, hotels, and motels located where the CNEL exceeds 60 dBA, must obtain an acoustical analysis showing that the proposed design will limit interior noise to less than 45 dBA CNEL. Interior noise standards are typically applied to sensitive areas within the structure where low noise levels are desirable (such as living rooms, dining rooms, bedrooms, and dens or studies). Worst-case noise levels, either existing or future, must be used for this determination. Future noise levels must be predicted at least ten years from the time of building permit application. The County of San Diego has adopted the CCR Title 24 standards.

Thus, for the purposes of analysis, the applicable exterior noise design threshold is 60 dBA CNEL. The applicable interior noise standard is 45 dBA Leq-h per the County's Noise Element. Onsite noise generation would be governed by the County's noise ordinance outlined above.

#### **Operational Noise Standards**

The San Diego County Noise Ordinance Section 36.404 governs fixed source and/or operational noise. The applicable sound levels are a function of the time of day and the land use zone. Sound levels are measured at the boundary of the property containing the noise source. The relevant limits are given below in Table 1. In the case where two adjacent property lines differ in zoning, the applicable threshold would be the arithmetic average of the two standards.

The Dai Dang Meditation Center site expansion is zoned A70 Limited Agricultural and is consistent with the surrounding residential land uses of the area. Thus, the standard would be 50.0 dBA Leq-h during the hours of 7 a.m. to 10 p.m. and 45.0 dBA Leq-h during the hours of 10 p.m. to 7 a.m.

**TABLE 1: County of San Diego Noise Ordinance Limits**

Land Use Zone	Time of Day	1-Hour Average Sound Level (dBA Leq)
R-S, R-D, R-R, R-MH, A-70, A-72, S-80, S-81, S-87, S-88, S-90, S-92, R-V, and R-U	7 a.m. to 10 p.m.	50
	10 p.m. to 7 a.m.	45
R-R0, R-C, R-M, C-30, and S-86	7 a.m. to 10 p.m.	55
	10 p.m. to 7 a.m.	50
S-94 and other commercial zones	7 a.m. to 10 p.m.	60
	10 p.m. to 7 a.m.	55
M-50, M-52, and M-54	any time	70
S-82 and M-58	any time	70

Source: County of San Diego Noise Ordinance Section 36.404, 1981.



## ANALYSIS METHODOLOGY

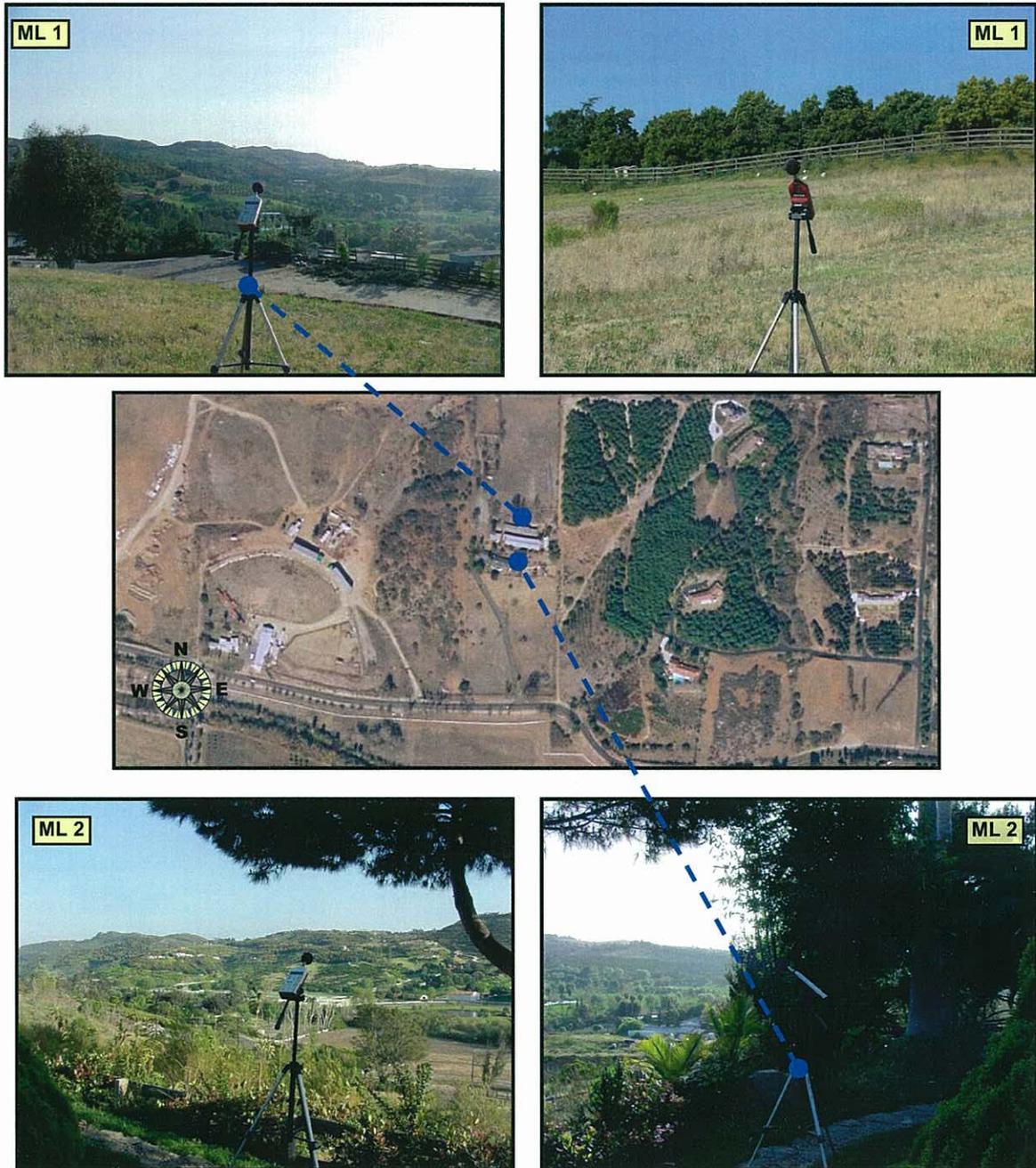
### Site Monitoring Procedure

Two Quest Model 2900 ANSI Type 2 integrating sound level meters were used as the data collection devices. The meters (denoted as ML 1 and ML 2) were mounted to a tripod approximately five feet above the ground and were chosen to represent worst-case noise exposure within the existing development area as well as ambient sound levels within the proposed development site. These monitoring locations are shown graphically in Figures 4a through –e below.

The measurements were performed on April 14, 2005 during typical peak hour afternoon ambient conditions. All equipment was calibrated before testing at ISE's acoustics and vibration laboratory to verify conformance with ANSI S1-4 1983 Type 2 and IEC 651 Type 2 standards.

### Construction Noise Impact Assessment Approach

Construction noise present at the project site was analyzed based upon the anticipated construction vehicle requirements provided by the project engineer (*Source: RBF Consulting, 4/05*) and proposed daytime operational levels. Cumulative levels were calculated for a worst-case noise emission condition (i.e., all equipment running simultaneously at the closest feasible point for cumulative operations).



Figures 4a through -e: Onsite Ambient Noise Monitoring Location (ISE, 3/05, 4/05)

Construction noise present at the project site was based upon past measured levels (Source: EPA PB 206717, Environmental Protection Agency, 12/31/71, "Noise

from Construction Equipment and Operations”) of each expected equipment type, the duty cycle of each of the equipment components, and the expected averaged noise level (expected operation over an allowed workday) as well as the expected worst-case noise level at the nearest sensitive receptor. Cumulative (i.e., worst case aggregate) levels were calculated for a range of expected noise emissions from the proposed equipment at the closest sensitive receptor per the requirements of Section 36.410 of the County’s Noise Ordinance.

### **Onsite Traffic-Related Acoustical Modeling**

The Caltrans Sound 32 Traffic Noise Prediction Model with California (CALVENO) noise emission factors (*based on FHWA RD-77-108 and FHWA/CA/TL-87/03 standards*) were used to calculate future onsite vehicular traffic noise levels. The Sound 32 model was calibrated in accordance with Appendix E of the FHWA Highway Traffic Noise Prediction Manual (Report RD-77-108) for a normalized Level of Service equal to ‘C’. This is also in accordance with Caltrans Technical Noise Supplement (TeNS) sections N-5440 & N-5460 published October 1998.

Receptor elevations were considered five feet above the appropriate floor (pad) elevation. The model assumed a “hard” site sound propagation rule (i.e., a 3.0-dBA loss per doubling of distance from roadway to receiver) in accordance with the existing and proposed site conditions. The modeled receptor locations are identified as red circles (●) as shown in Figure 5 below and represent the worst-case affected areas. No corrections were taken for existing onsite structures.

Model input included a digitized representation of Camino Del Rey as well as any available local site topography, future Average Daily Traffic (ADT) volumes obtained from the project traffic engineer, vehicle mix, and receptor elevations. The roadway and site topography elevations were obtained from the data and plans provided by DLA Design Center dated 2/04. Future traffic volumes were assumed to be consistent with SANDAG Enhanced Traffic Projection Model predictions.

Model output consisted of peak hour energy-mean A-weighted sound levels (or Leq-h) for each receptor examined. Peak hour traffic values were calculated for a 10% traffic flow pattern and a 95/3/2 (automobiles/medium/heavy-vehicles) percent mix consistent with a County Major Road designation. For peak hour traffic percentages between approximately 8 and 12 percent, the energy-mean A-weighted sound level is equivalent to the Community Noise Equivalent Level (CNEL). Outside this range, a maximum variance of up to two dBA occurs between Leq-h and CNEL.

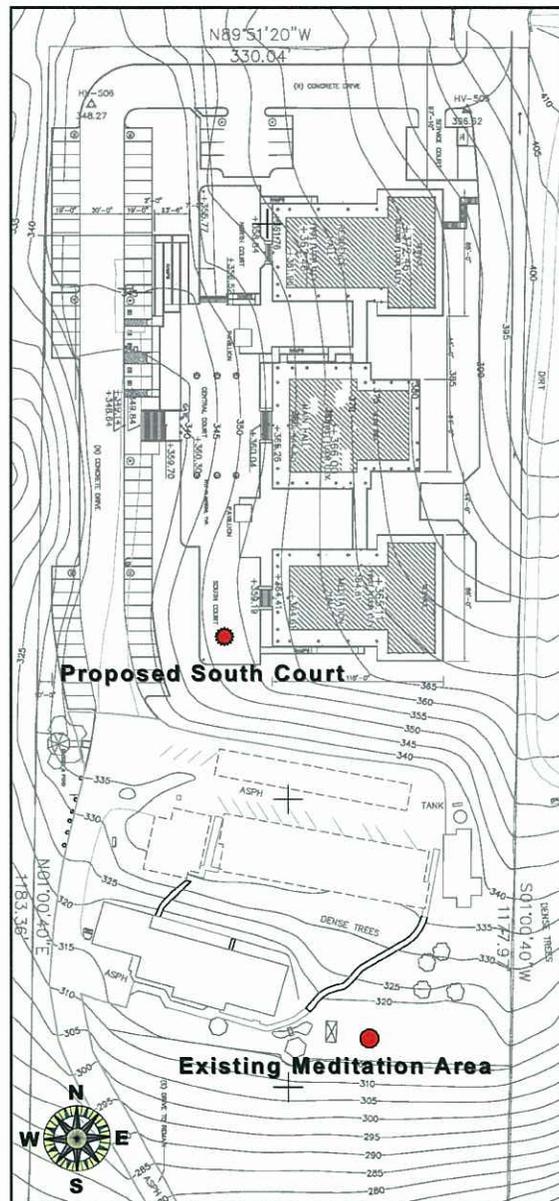


FIGURE 5: Modeled Receptor Locations (ISE, 4/05)

### Onsite Noise Assessment Approach

There are no onsite noise sources within the proposed Dai Dang Meditation Center site expansion requiring analysis under County Code Section 36.404. General maintenance around the meditation center would not be considered an impact.



## FINDINGS / RECOMMENDATIONS

### Existing Ambient Noise Conditions

Testing conditions during the monitoring period were sunny with an average barometric pressure reading of 29.94 in-Hg, an average southwesterly wind speed of 3 to 5 miles per hour (MPH), and an approximate mean temperature of 78 degrees Fahrenheit. The results of the sound level monitoring are shown below in Table 2. The values for the equivalent sound level (Leq-h), the maximum and minimum measured sound levels (Lmax and Lmin), and the statistical indicators L10, L50, and L90, are given for each monitoring location. The observed existing dominant noise source was from infrequent distant sound sources.

**TABLE 2: Measured Ambient Sound Levels – Dai Dang Meditation Center**

Site	Start Time	1-Hour Noise Level Descriptors in dBA					
		Leq	Lmax	Lmin	L10	L50	L90
ML 1	4:30 p.m.	45.8	50.2	41.0	47.9	45.3	43.3
ML 2	4:30 p.m.	54.9	62.9	48.5	58.0	53.2	49.9

Monitoring Locations:

- ML 1: Proposed site development area. GPS 33° 17.077' x 117° 11.787'.
- ML 2: Southern edge existing facility. Worst-case noise exposure area. GPS 33° 17.027' x 117° 11.796'.

Measurements performed by ISE on 4/14/05. Estimated Position Error (EPE) = 15 feet.

Noise levels on site were found to be consistent with the observed community setting and intervening topography. The value for the equivalent sound level (Leq-h) for the project site was found to range between 46 and 55 dBA and was solely a function of the separation distance and line of sight occlusion from Camino Del Rey. The acoustic floor, as indicated by the Lmin metric, for the site was found to range between 41 and 49 dBA indicating a rural community setting.

### Construction Noise Emission Levels

Construction of the proposed Dai Dang Meditation Center site expansion would be equivalent to the construction of a new residential home. The estimated worst-case construction equipment noise emissions are provided below in Table 3 for the rough grading phase of the activities (which would produce the most noise emissions). This would consist of clearing, grubbing, and general pad and walkway alignment formation and is typically performed as three distinct phases: mobilization, pad formation, and additional site finishing work.

**TABLE 3: Predicted Construction Noise Levels – Rough Grading Operations**

Equipment Type	Qty. Used	Duty Cycle	Source Level @ 50 Feet (dBA)	Average Sound Level between 7a.m and 7p.m. @50 Feet (dBA)
Bulldozer	1	4/12	75	70.2
Grader	1	4/12	70	65.2
Water Tank Truck	1	4/12	70	65.2
Backhoe	1	4/12	70	65.2
Worst-Case Aggregate Sum @ 50 Ft. (Σ):				73.1
<b>Average Sound Level between 7a.m and 7p.m. @ 500 ft</b>				<b>53.1</b>

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

Construction within the proposed project area would typically occur between the hours of 7 a.m. and 4 p.m. Monday through Friday in accordance with County operational requirements and would be primarily utilized in an incremental fashion. The closest residential receptor would be located approximately 500 feet from the construction activities. The point-source attenuation between this receptor and any construction would be at least 20 dBA. Given this, no construction noise impacts are expected at nearby residential receptors.

**Predicted Future Vehicular Noise Levels**

Future vehicular noise levels were analyzed for the impact of Camino Del Rey on the project site. According to the project Traffic Engineer/SANDAG, Camino Del Rey is expected to generate approximately 8,000 ADT at 40 MPH by the year 2030.

The results of the acoustical modeling are shown below in Table 4. The acoustical model results are provided as an attachment to this report. Based upon the findings, future exterior traffic noise levels would not exceed the County's 60-dBA CNEL noise threshold for outdoor usable areas. No interior noise mitigation would be required per CCR Title 24. The expected 60 dBA CNEL is approximately 260 feet from the centerline of Camino Del Rey.

**TABLE 4: Acoustical Modeling Results – Dai Dang Meditation Center**

Receptor #	Ground Level (Unmitigated) dBA CNEL	2nd Level (Unmitigated) dBA CNEL
South Court (Proposed)	40.4	42.1
Existing Meditation Area	51.2	51.2

Source: ISE, 4/05.

### **Predicted Vehicular Noise Levels along Adjacent Roadways**

The results showing the effect of traffic noise increases on the various servicing roadway segments associated with the proposed Dai Dang Meditation Center Development are presented in Tables 3a through –e for the following scenarios:

Table 5a)	Existing Conditions
Table 5b)	Near Term - Cumulative Conditions
Table 5c)	Traffic Noise Comparison

For each roadway segment examined, the worst case average daily traffic volume (ADT) and observed/predicted speeds are shown along with the corresponding reference noise level at 50-feet (in dBA). Additionally, the line-of-sight distance to the 60 and 65 dBA CNEL contours are provided as an indication of the worst-case unobstructed theoretical traffic noise contour placement.

**TABLE 5a: Existing Conditions**

Roadway Segment	ADT	Speed (MPH)	SPL	CNEL Contour Distances (feet)	
				65 dBA Contour	60 dBA Contour
<b>South Mission Road</b>					
North of Fallbrook	17,893	50	74.1	203	436
Fallbrook to Ammunition	20,743	50	74.8	224	482
Ammunition to Clemmens	19,981	50	74.6	218	470
Clemmens to Laurine	22,474	50	75.1	236	508
Laurine Lane t South Stage Coach	23,774	50	75.3	245	527
South Stage Coach to Pala	20,974	50	74.8	225	485
<b>East Mission Road</b>					
Main to Stage Coach	17,176	45	73.0	172	371
Stage Coach to Old Hwy 395	19,196	45	73.5	185	399
Old Hwy 395 to I-15	32,738	45	75.8	264	570
<b>Fallbrook Street</b>					
South Mission to Main	9,585	35	68.5	86	186
<b>Main Avenue</b>					
East Mission to Fallbrook	15,173	25	69.2	95	204
Fallbrook to Ammunition	16,105	25	69.4	98	212
Ammunition to Celmmens	17,450	25	69.8	104	224
<b>Stage Coach Lane</b>					
East Mission to Reche	6,852	35	67.1	69	149
Reche to South Mission	9,097	35	68.3	83	179
<b>Green Canyon Road</b>					
Reche to Tourmaline	1,511	35	60.5	25	54
Tourmaline to Maravido	1,018	35	58.8	19	42
Maravido to South Mission	1,028	35	58.9	19	42
<b>Reche Road</b>					
South Stage Coach to Green Canyon	12,281	35	69.6	102	219
<b>State Route 76</b>					
North River Road to Olive Hill	30,500	55	77.3	329	708
Olive Hill to South Mission	36,500	55	78.0	370	798
South Mission to Old Hwy 395	20,636	55	75.6	253	546
East of Old Hwy 395	23,508	55	76.1	276	595
<b>Old Highway 395</b>					
SR 76 to West Lilac	4,118	55	68.6	86	186
West Lilac to I-15	3,713	55	68.1	81	174
<b>West Lilac Road</b>					
Camino del Rey to Caminito Quieto	1,867	45	63.4	39	84
Caminito Quieto to Old Hwy 395	1,902	45	63.5	40	85

**Notes:**

- ADT = Average Daily Traffic - Source: Katz, Okitsu & Associates, 10/04.
- SPL = Sound Pressure Level in dBA at 50-feet from the road edge. CNEL = Community Noise Exposure Level.
- All values given in dBA CNEL. Contours assumed to be line-of-sight perpendicular (⊥) distance.

**TABLE 5b: Near Term – Cumulative Conditions**

Roadway Segment	ADT	Speed (MPH)	SPL	CNEL Contour Distances (feet)	
				65 dBA Contour	60 dBA Contour
<b>South Mission Road</b>					
North of Fallbrook	19,558	50	74.5	215	463
Fallbrook to Ammunition	23,857	50	75.4	245	529
Ammunition to Clemmens	24,376	50	75.5	249	536
Clemmens to Laurine	27,792	50	76.0	272	585
Laurine Lane t South Stage Coach	30,375	50	76.4	288	621
South Stage Coach to Pala	26,440	50	75.8	263	566
<b>East Mission Road</b>					
Main to Stage Coach	18,221	45	73.3	179	385
Stage Coach to Old Hwy 395	20,926	45	73.9	196	423
Old Hwy 395 to I-15	40,378	45	76.8	304	655
<b>Fallbrook Street</b>					
South Mission to Main	10,776	35	69.1	93	201
<b>Main Avenue</b>					
East Mission to Fallbrook	15,780	25	69.3	97	209
Fallbrook to Ammunition	17,636	25	69.8	105	225
Ammunition to Celmmens	18,701	25	70.1	109	234
<b>Stage Coach Lane</b>					
East Mission to Reche	8,868	35	68.2	82	176
Reche to South Mission	11,106	35	69.2	95	205
<b>Green Canyon Road</b>					
Reche to Tourmaline	1,808	35	61.3	28	61
Tourmaline to Maravido	1,259	35	59.7	22	48
Maravido to South Mission	1,370	35	60.1	24	51
<b>Reche Road</b>					
South Stage Coach to Green Canyon	14,097	35	70.2	112	240
<b>State Route 76</b>					
North River Road to Olive Hill	57,028	55	80.0	499	1,075
Olive Hill to South Mission	60,398	55	80.2	518	1,116
South Mission to Old Hwy 395	45,613	55	79.0	430	926
East of Old Hwy 395	75,613	55	81.2	602	1,297
<b>Old Highway 395</b>					
SR 76 to West Lilac	5,862	55	70.1	109	236
West Lilac to I-15	5,697	55	70.0	107	231
<b>West Lilac Road</b>					
Camino del Rey to Caminito Quieto	2,451	45	64.6	47	101
Caminito Quieto to Old Hwy 395	2,513	45	64.7	48	103

**Notes:**

- ADT = Average Daily Traffic - Source: Katz, Okitsu & Associates, 10/04.
- SPL = Sound Pressure Level in dBA at 50-feet from the road edge. CNEL = Community Noise Exposure Level.
- All values given in dBA CNEL. Contours assumed to be line-of-sight perpendicular (⊥) distance.

**TABLE 5c: Traffic Noise Increase**

Roadway Segment	Existing (SPL)	Cumulative with Project (SPL)	Existing Vs. Cumulative with Project (SPL)
<b>South Mission Road</b>			
North of Fallbrook	74.1	74.5	0.4
Fallbrook to Ammunition	74.8	75.4	0.6
Ammunition to Clemmens	74.6	75.5	0.9
Clemmens to Laurine	75.1	76.0	0.9
Laurine Lane t South Stage Coach	75.3	76.4	1.1
South Stage Coach to Pala	74.8	75.8	1.0
<b>East Mission Road</b>			
Main to Stage Coach	73.0	73.3	0.3
Stage Coach to Old Hwy 395	73.5	73.9	0.4
Old Hwy 395 to I-15	75.8	76.8	1.0
<b>Fallbrook Street</b>			
South Mission to Main	68.5	69.1	0.6
<b>Main Avenue</b>			
East Mission to Fallbrook	69.2	69.3	0.1
Fallbrook to Ammunition	69.4	69.8	0.4
Ammunition to Celmmens	69.8	70.1	0.3
<b>Stage Coach Lane</b>			
East Mission to Reche	67.1	68.2	1.1
Reche to South Mission	68.3	69.2	0.9
<b>Green Canyon Road</b>			
Reche to Tourmaline	60.5	61.3	0.8
Tourmaline to Maravido	58.8	59.7	0.9
Maravido to South Mission	58.9	60.1	1.2
<b>Reche Road</b>			
South Stage Coach to Green Canyon	69.6	70.2	0.6
<b>State Route 76</b>			
North River Road to Olive Hill	77.3	80.0	2.7
Olive Hill to South Mission	78.0	80.2	2.2
South Mission to Old Hwy 395	75.6	79.0	3.4
East of Old Hwy 395	76.1	81.2	5.1
<b>Old Highway 395</b>			
SR 76 to West Lilac	68.6	70.1	1.5
West Lilac to I-15	68.1	70.0	1.9
<b>West Lilac Road</b>			
Camino del Rey to Caminito Quieto	63.4	64.6	1.2
Caminito Quieto to Old Hwy 395	63.5	64.7	1.2

Notes:

- ADT = Average Daily Traffic - Source: Katz, Okitsu & Associates, 10/04.
- SPL = Sound Pressure Level in dBA at 50-feet from the road edge. CNEL = Community Noise Exposure Level.
- All values given in dBA CNEL. Contours assumed to be line-of-sight perpendicular (L) distance.

According to the traffic impact study, the project would add a maximum of 3 peak hour trips on any critical movement and would not have any direct impacts. The largest cumulative related noise increase would occur along SR-76. It can be expected that cumulative projects nearby would add approximately 5.1 dBA to this roadway. The project-related contribution would three peak hour trips or practically 0% of the overall

Mr. Alex H. Jewell, AICP  
Acoustical Site Assessment  
Dai Dang Meditation Center – San Diego CA  
ISE Report #05-055  
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noise increase. Therefore, no impacts are expected. All other roadway segments are also below the normally accepted impact threshold of 3.0-dBA.

Should you have any questions regarding the above conclusions, please do not hesitate to contact me at (858) 451-3505.

Sincerely,

A handwritten signature in black ink that reads "Rick TAVARES". The signature is written in a cursive style with a large, stylized "R" and "T".

Rick Tavares, Ph.D.  
Project Principal  
Investigative Science and Engineering, Inc.

Cc. Ryan Taylor, ISE

Attachments: Sound32 Traffic Noise Prediction Model Input Decks

**S32 Input Deck – Unmitigated Baseline Conditions**

DAI DANG MEDITATION CENTER UNMITIGATED  
 T-PEAK HOUR TRAFFIC CONDITIONS, 1  
 760 , 40 , 24 , 40 , 16 , 40  
 L-CAMINO DEL REY, 1  
 N,1270,535,217,  
 N,1242,460,216,  
 N,1239,377,215,  
 N,1244,289,210,  
 N,1257,203,205,  
 N,1254,94,200,  
 B-BARRIER PLACEMENT, 1 , 2 , 0 , 0  
 759,503,315,315,  
 766,345,315,315,  
 737,215,315,315,  
 556,99,315,315,  
 R, 1 , 65 ,10  
 452,292,366,R1  
 R, 2 , 65 ,10  
 751,341,323,R2  
 C,C

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TITLE: DAI DANG MEDITATION CENTER UNMITIGATED

BARRIER DATA  
 \*\*\*\*\*

BAR ELE	BARRIER HEIGHTS							BAR ID	LENGTH	TYPE	
	0	1	2	3	4	5	6				7
1	-	0.*							B1 P1	158.2	MASONRY
2	-	0.*							B1 P2	133.2	MASONRY
3	-	0.*							B1 P3	215.0	MASONRY
	0	1	2	3	4	5	6	7			

REC	REC ID	DNL	PEOPLE	LEQ (CAL)
1	R1	65.	10.	40.4
2	R2	65.	10.	51.2

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION

1 1 1

CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION

0. 0. 0.

**S32 Input Deck – Unmitigated Second Floor Conditions**

DAI DANG MEDITATION CENTER UNMITIGATED 2ND  
 T-PEAK HOUR TRAFFIC CONDITIONS, 1  
 760 , 40 , 24 , 40 , 16 , 40  
 L-CAMINO DEL REY, 1  
 N,1270,535,217,  
 N,1242,460,216,  
 N,1239,377,215,  
 N,1244,289,210,  
 N,1257,203,205,  
 N,1254,94,200,  
 B-BARRIER PLACEMENT, 1 , 2 , 0 ,0  
 759,503,315,315,  
 766,345,315,315,  
 737,215,315,315,  
 556,99,315,315,  
 R, 1 , 65 ,10  
 452,292,376.,R1  
 R, 2 , 65 ,10  
 751,341,333.,R2  
 C,C

SOUND32 - RELEASE 07/30/91

TITLE: DAI DANG MEDITATION CENTER UNMITIGATED 2ND

BARRIER DATA  
 \*\*\*\*\*

BAR	BARRIER HEIGHTS							BAR	LENGTH	TYPE	
ELE	0	1	2	3	4	5	6	7			ID
1	-	0.*							B1 P1	158.2	MASONRY
2	-	0.*							B1 P2	133.2	MASONRY
3	-	0.*							B1 P3	215.0	MASONRY
	0	1	2	3	4	5	6	7			

REC	REC ID	DNL	PEOPLE	LEQ (CAL)
1	R1	65.	10.	42.1
2	R2	65.	10.	51.2

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION  
 1 1 1  
 CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION  
 0. 0. 0.