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December 9, 2014
Project No. 46-008-2

Ms. Gloria Ballard
MH Engineering
16075 Vineyard Boulevard
Morgan Hill, CA 95037

Subject: Noise Assessment Study for the Planned Expansion of the Canh Thai Temple, 2532 Klein Road, Santa Clara County

Dear Ms. Ballard:

This is report presents the results of a noise assessment study for the planned expansion of the Canh Thai Temple at 2532 Klein Road in Santa Clara County, as shown on the Site Plan, Ref. (a). The purpose of the analysis was to determine the levels of noise at the adjacent residential properties during regular Sunday prayer services and during special religious events for an evaluation against the standards of the County of Santa Clara Noise Element, Ref. (b), and the County of Santa Clara Noise Ordinance, Ref. (c). The results of the analysis reveal that the noise exposures generated by the project will be in compliance the Noise Element standards. The project-generated noise levels will be in compliance with the standards of the Zoning Ordinance. The proposed project will not add significantly to the existing noise environment. Noise mitigation measures will not be required.

Sections I and II of this report contain a summary of our findings and descriptions of the site and project, respectively. Subsequent sections contain the noise analyses and evaluations. Appendices A and B, attached, contain the list of references, descriptions of the applicable standards, definitions of the terminology and descriptions of the acoustical instrumentation used for the field survey.

I. Summary of Findings

A. Noise Standards

The findings presented below were evaluated against the standards of the County of Santa Clara Noise Element, which utilizes the Day-Night Level (DNL) noise descriptor to define acceptable noise exposures for noise sensitive land uses. The DNL is a 24-hour time-weighted average descriptor commonly used to describe community noise environments. The standards specify a limit of 55 decibels (dB) DNL at residential land uses.

The findings were also evaluated against the standards of the County of Santa Clara Noise Ordinance, which limits the short-term maximum (dBA) noise at residential properties (receiving land use) to various levels depending upon the time of day, the duration of the noise and the noise type, as shown below. The Noise Ordinance does not apply to traffic on public streets.

TABLE I

	Noise Level Limit, dBA	
	Daytime	Nighttime
Duration of Noise	(7:00 a.m. - 10:00 p.m.)	(10:00 p.m. - 7:00 a.m.)
30 min./hr. (L_{50})	55	45
15 min./hr. (L_{25})	60	50
5 min./hr. (L_{8})	65	55
1 min./hr. (L_{2})	70	60
Maximum (L_{max})	75	65

The above noise limits are reduced by 5 dB if the noise contains a steady whine, screech, hum, music or speech, but are increased by 5 dB if the noise source and noise receptor are in different zoning districts.

As the proposed use will not operate between the hours of 10:00 PM and 7:00 AM, the nighttime noise limits do not apply.

The noise standards of the Santa Clara County General Plan Noise Element are in terms of noise exposure, using the DNL 24-hour average metric. The noise standards of the Santa Clara County Noise Ordinance are in terms of noise level, reported as dBA. Noise in terms of dBA and in DNL, although related, are different and must not be confused.

II. Site and Project Descriptions

The planned project site is currently the location of the Canh Thai Temple located at 2532 Klein Road in San Jose. The site slopes up gently from west to east (front to back). The front portion of the site is approximately at-grade with Murillo Avenue. Surrounding land uses are two-story single-family residential across Murillo Avenue to the west, single-family adjacent to the north, east and south. The driveway along the northerly side of the site is a common driveway that serves both the Temple and the residential neighbor to the east at 2526 Klein Road. Although the addresses for these properties are Klein Road, they face Murillo Avenue. The Site Plan is shown on Figure 1 on page 4.

Currently, the regular Sunday service includes test study, lecture, prayer, meditation, socializing and lunch. Although the temple has reported a typical capacity of approximately 30 attendees, there were 89 attendees on the day of the regular Sunday service noise measurements. The socializing and lunch portion of the services and events take place outdoors.

The planned project includes the removal of the existing temporary buildings on the site and the construction of a new temple, garage and paved parking area. The new building will be at the approximate location on the site as the existing structure. Current outdoor activities such as socializing and lunch will be held indoors. Sunday service may have up to 100 people in attendance. Special events may have up to 300 people in attendance over the course of the day, Ref. (d).

During the monitored Chinese New Year event, the project description for existing conditions includes a capacity of up to 100 people. Because of the full day duration of this event, attendees come and go over the course of the day with approximately 30 people at the event at any given time. The total volume of 100 or more people is a daily total, which typically does not occur at one time. There was no bus traffic during the Chinese New Year event.

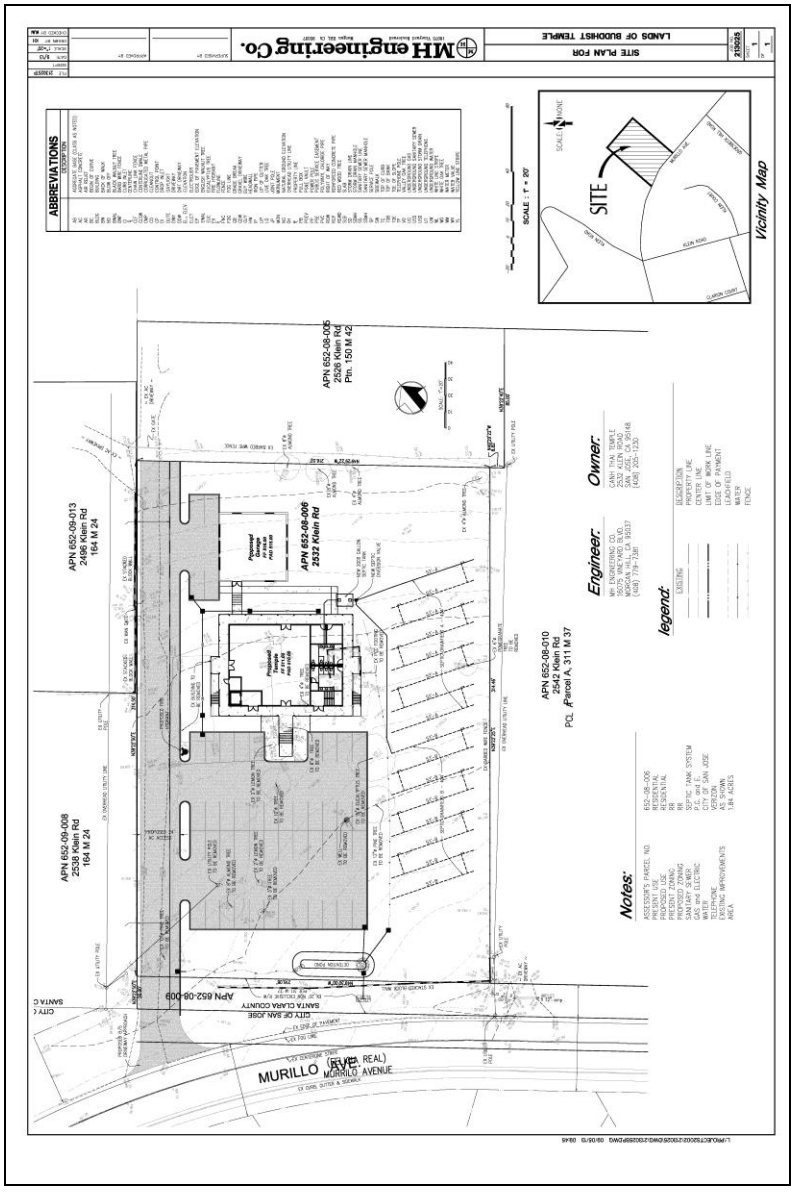


FIGURE 1

III. Analysis of the Noise Levels

A. Existing Noise Levels and Noise Exposures

To determine the existing noise environment at the residential properties closest to the project, continuous recordings of the sound levels were made at three locations during regular Sunday service and during a special event (Chinese New Year). Location 1 was at the northerly property line along the shared driveway. Location 2 was at the east property line contiguous with the residential neighbor. Location 3 was at the residential property line on the west side of Murillo Avenue. The noise measurement locations are shown on Figure 2 on page 6. The measurements were made on February 1, 2014 for the Chinese New Year event and on February 16, 2014 for regular Sunday service.

The residential property to the south of the site is at a significant distance from the project noise sources similar to the residence to the east. Because the residence to the east is farther from Murillo Avenue, the ambient noise levels are expected to be lower resulting is more restrictive noise limits, per CEQA. It was evident during the initial site visit that the project-generated noise levels are low even at the nearby and worst-case north property line. Thus, background sound measurements at the south property line were not warranted.

The sound level data were recorded and processed using Larson-Davis LDL 812 Precision Integrating Sound Level Meters. The meters yield, by direct readout, a series of descriptors of the sound levels versus time, as described in Appendix B. The measured descriptors include the L_2, L_8, L_{25}, and L_{50}, i.e., those levels that are exceeded 2%, 8%, 25%, and 50% of the time, corresponding to the standards of the Santa Clara Count Noise Ordinance. Also measured were the maximum and minimum levels, and the continuous equivalent-energy levels (L_{eq}), which are used to calculate the DNL. The measurements were made for a total period of 12 hours during the Chinese New Year event (8:00 AM – 8:00 PM) and for 4 hours during regular Sunday service (11:00 AM – 3:00 PM).

FIGURE 2 – Noise Measurement Locations

The results of the noise measurements under current operational conditions are shown on the graphs on pages 8-13. The graphs on pages 8, 9 and 10 represent the total measured noise levels during the Chinese New Year celebration event. The graphs on pages 11, 12 and 13 represent the noise levels during a regular Sunday prayer service. Also included with the graphs are the measured noise data in tabular form. Note that the measured Sunday had more attendees than normal due to some residual Chinese New Year celebrators. The measured noise levels included noise from the temple activities, temple traffic, background traffic on Murillo Avenue, neighbor traffic on the shared driveway and activities at the neighbor's home to the east.

During the 11:00 hour on February 1, a person not affiliated with the temple crashed her car into the curb and tree across Murillo Avenue from the site. The associated emergency response personnel (fire truck, ambulance, police vehicles) created significantly high levels of noise during this period.

During the 11:00 hour on February 16, the neighbor to the east conducted home maintenance activities within close proximity to the sound level meter. These activities generated very high levels of noise during this period.

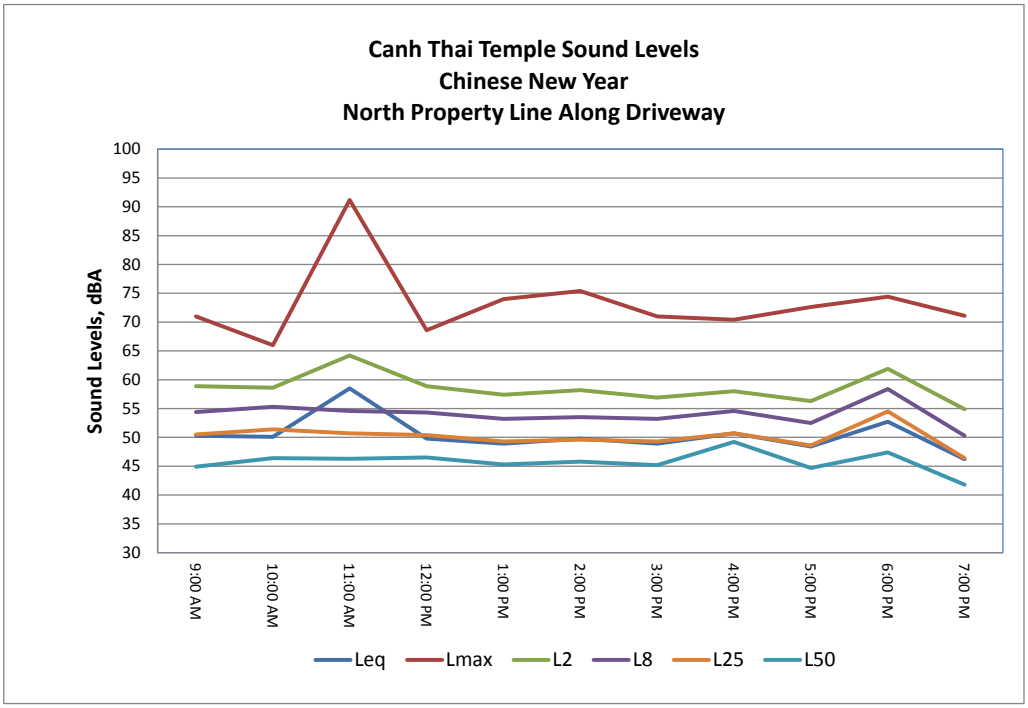
The on-site noise monitoring revealed that the noise levels generated by the temple activities during the Chinese New Year celebration, included cars entering and exiting the site, ranged from 38 to 48 dBA at Location 1 and from 39 to 44 dBA at Location 2. In addition, the neighbor to the east has chickens/roosters that generated noise levels of 45 to 57 dBA at the property line. The outdoor celebration activities were barely audible across Murillo Avenue at Location 3. Project noise at Location 3 was due primarily to temple traffic entering and exiting the site. However, the contribution of event traffic to background traffic was low. The number of attendees was approximately 36 at any given time with 17 vehicles on site. Because of the nature of the event, approximately 100 people attend the event over the course of the day.

Children playing on and around the site generated the highest temple-related noise, with noise level ranging from 47 to 52 dBA at the northerly property line and from 39 to 48 dBA at the easterly property line.

During the regular Sunday prayer service, the noise levels from outdoor activity ranged from 40 to 47 dBA at Location 1 and from 39 to 42 dBA at Location 2. Ten children playing generated noise levels of 46 dBA to 54 dBA along the northerly property line and from 40 to 52 dBA at the easterly property line. The number of attendees at the Sunday service was 89 with 45 vehicles on site.

The activities during the Chinese New Year celebration and the regular Sunday prayer service were nearly identical. The main difference was that people would come and go over the course of the day during the Chinese New Year event, whereas on Sunday, the attendees mostly stayed on site during the few hours of service.

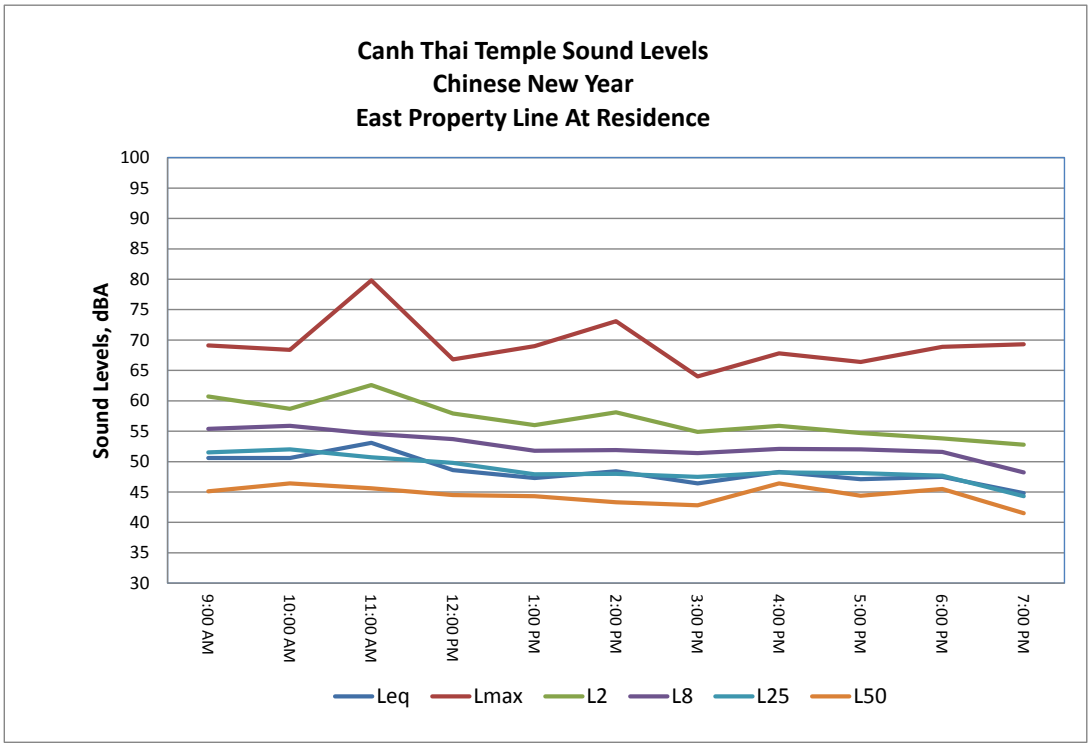
Because of these operational (and acoustical) similarities, the noise levels from a Sunday service with 89 people is similar to the proposed "event" scenario with up to 100 people on-site at one time, with a minor adjustment to account for the difference of 11 people. Likewise, the volume of 30 people at the Chinese New Year event was more similar to a regular Sunday prayer service.



	North PL Along Driveway					
	Leq	Lmax	L2	L8	L25	L50
Noise Ordinance Limit =		75	70	65	60	55
9:00 AM	50	71	59	54	51	45
10:00 AM	50	66	59	55	51	46
11:00 AM	59	**91**	64	55	51	46
12:00 PM	50	69	59	54	50	47
1:00 PM	49	74	57	53	49	45
2:00 PM	50	75	58	54	50	46
3:00 PM	49	71	57	53	49	45
4:00 PM	51	70	58	55	51	49
5:00 PM	48	73	56	53	49	45
6:00 PM	53	74	62	58	55	47
7:00 PM	46	71	55	50	46	42

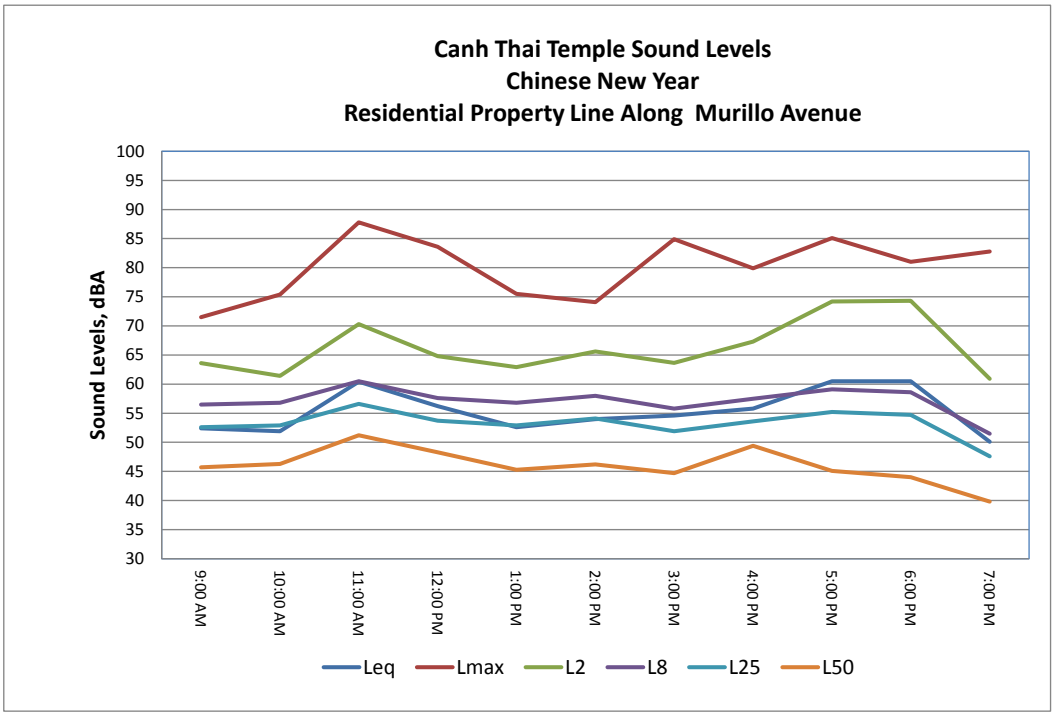
Noise Ordinance Exceedances are shown in Bold

11:00 hour was from emergency vehicles when person crashed car



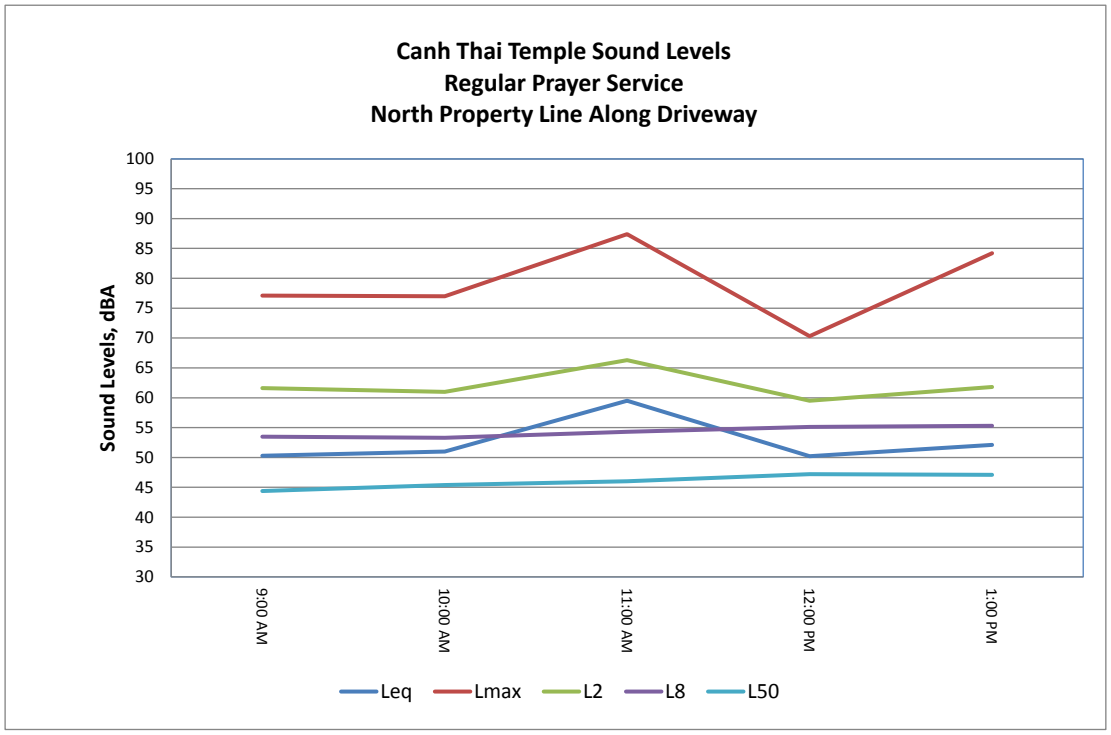
	East PL at Residence					
	Leq	Lmax	L2	L8	L25	L50
Noise Ordinance Limit =		75	70	65	60	55
9:00 AM	51	69	61	55	52	45
10:00 AM	51	68	59	56	52	46
11:00 AM	53	**80**	63	55	51	46
12:00 PM	49	67	58	54	50	45
1:00 PM	47	69	56	52	48	44
2:00 PM	48	73	58	52	48	43
3:00 PM	46	64	55	51	48	43
4:00 PM	48	68	56	52	48	46
5:00 PM	47	66	55	52	48	44
6:00 PM	48	69	54	52	48	46
7:00 PM	45	69	53	48	44	42

Noise Ordinance Exceedances are shown in Bold



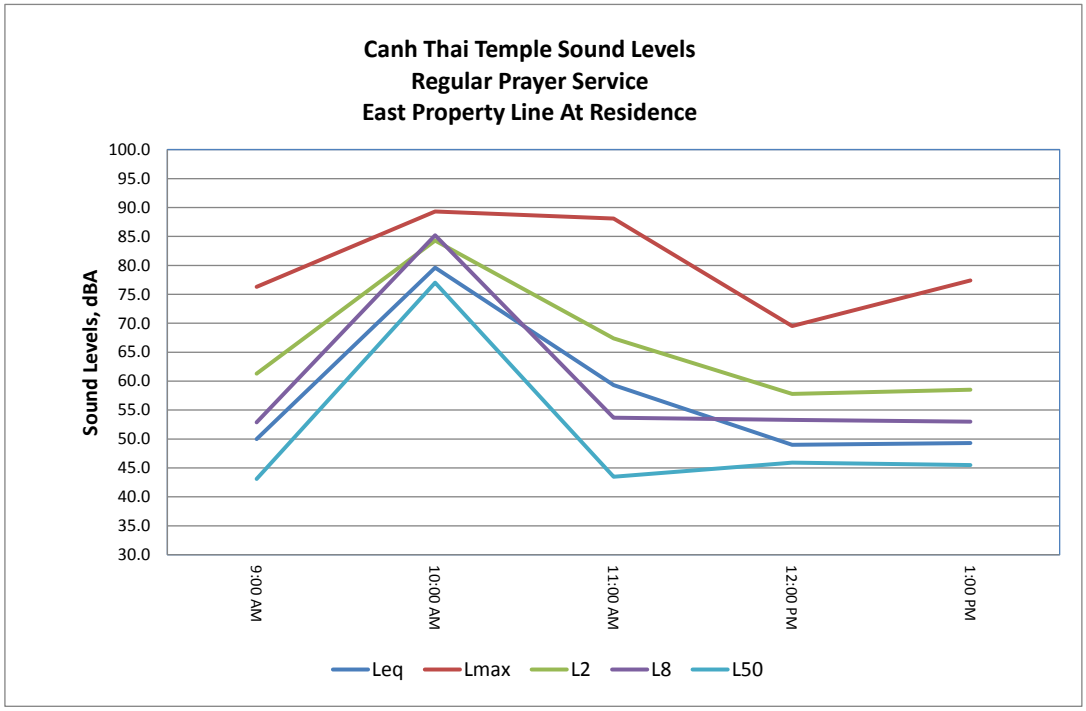
Klein Rd at Residential PL						
	Leq	Lmax	L2	L8	L25	L50
Noise Ordinance Limit =		75	70	65	60	55
9:00 AM	52	72	64	57	53	46
10:00 AM	52	75	61	57	53	46
11:00 AM	60	**88**	70	61	57	51
12:00 PM	56	**84**	65	58	54	48
1:00 PM	53	**76**	63	57	53	45
2:00 PM	54	74	66	58	54	46
3:00 PM	55	**85**	64	56	52	45
4:00 PM	56	**80**	67	58	54	49
5:00 PM	61	**85**	**74**	59	55	45
6:00 PM	61	**81**	**74**	59	55	44
7:00 PM	50	**83**	61	52	48	40

Noise Ordinance Exceedances are shown in Bold



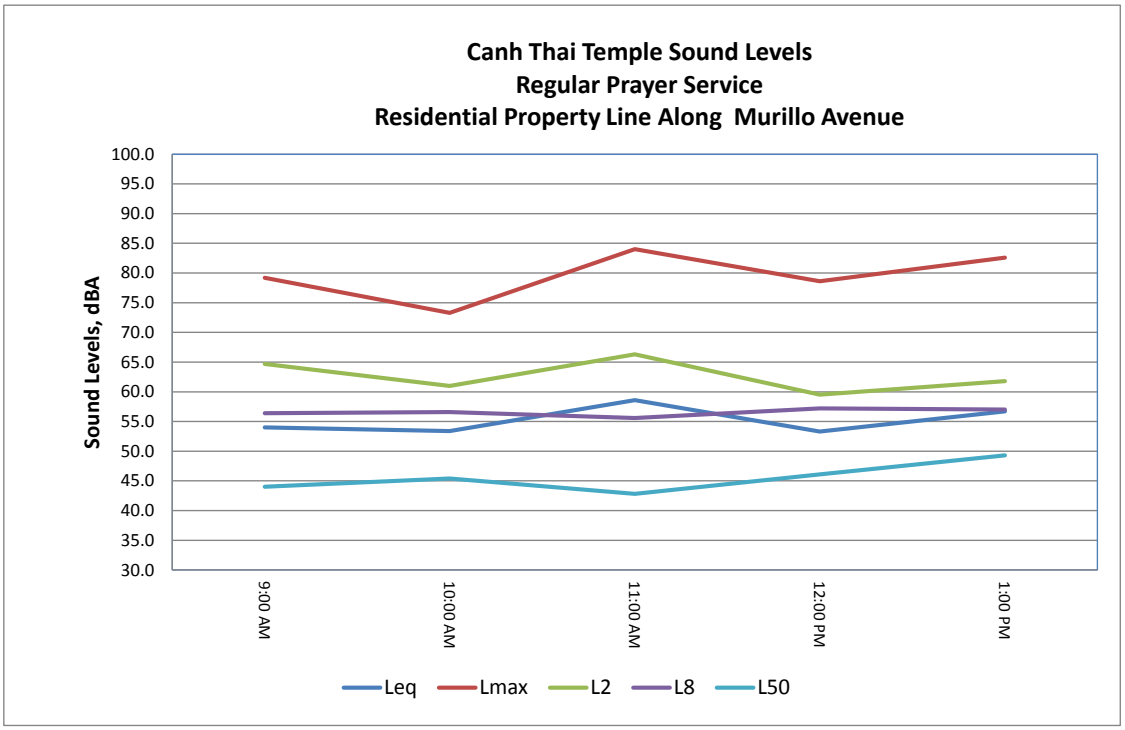
North PL Along Driveway						
	Leq	Lmax	L2	L8	L25	L50
Noise Ordinance Limit =		75	70	65	60	55
10:30 AM	50.3	**77.1**	61.6	53.5	54.2	44.4
11:00 AM	51.0	**77.0**	61.0	53.3	54.0	45.4
12:00 PM	59.5	**87.4**	66.3	54.3	55.0	46.0
1:00 PM	50.2	70.3	59.5	55.1	55.8	47.2
2:00 PM	52.1	**84.2**	61.8	55.3	56.0	47.1

Noise Ordinance Exceedances are shown in Bold



East PL at Residence						
	Leq	Lmax	L2	L8	L25	L50
Noise Ordinance Limit =		75	70	65	60	55
10:30 AM	50.0	**76.3**	61.3	52.9	53.6	43.1
11:00 AM	79.6	**89.3**	**84.3**	**85.2**	**85.9**	**77.0**
12:00 PM	59.3	**88.1**	67.4	53.7	54.4	43.5
1:00 PM	49.0	69.5	57.8	53.3	54.0	45.9
2:00 PM	49.3	**77.4**	58.5	53.0	53.7	45.5

Noise Ordinance Exceedances are shown in Bold



	Murillo Ave. at Residential PL					
	Leq	Lmax	L2	L8	L25	L50
Noise Ordinance Limit =		75	70	65	60	55
10:30 AM	54.0	**79.2**	64.7	56.4	57.1	44.0
11:00 AM	53.4	73.3	61.0	56.6	57.3	45.4
12:00 PM	58.6	**84.0**	66.3	55.6	56.3	42.8
1:00 PM	53.3	**78.6**	59.5	57.2	57.9	46.1
2:00 PM	56.7	**82.6**	61.8	57	57.7	49.3

Noise Ordinance Exceedances are shown in Bold

As shown in the tables, the noise levels generated by combined background and temple activities during the Chinese New Year event were within the limits of the Santa Clara County Noise Ordinance standards. The noise level exceedances were due to sources not associated with the temple, such as the automobile accident. The remaining exceedances were due to traffic sources on Murillo Avenue, which are not regulated by the Ordinance.

The noise levels generated by activities during regular Sunday prayer service were within the limits of the Santa Clara County Noise Ordinance standards. The noise level exceedances were due to sources not associated with the temple, such as the neighbor to the east using the driveway and driving fast past the sound meter, and the neighbor's maintenance noise and livestock.

To determine the existing noise exposures, the DNL's for the survey locations were calculated as a decibel average of the L_{eq}'s for the operational periods of the Chinese New Year event and for the regular Sunday prayer service. The L_{eq}'s shown in the L_{eq} column of the data tables below the graphs on the previous pages were used to calculate the DNL's. Table II, below, provides the existing noise exposures at each of the three measurement locations for the two analyzed scenarios. These noise exposures include noise from both Temple-associated and non-Temple-associated sources.

TABLE II

Total Existing Noise Exposures, dB DNL

Location	Chinese New Year	Sunday Prayer Service
1 – North Property Line	49	47
2 – East Property Line	46	66
3 – Murillo Ave. Property Line	54	48

The higher noise exposure at the Murillo Avenue property line was due to the vehicular accident.

The higher noise exposure at the east property line was due to the neighbor's home maintenance activity.

The noise exposures generated by activities and operations associated with the Temple only (background noise sources omitted) are shown in Table III, below.

TABLE III		
Temple Existing Noise Exposures, dB DNL		
Location	Chinese New Year	Sunday Prayer Service
1 – North Property Line	44	41
2 – East Property Line	40	37
3 – Murillo Ave. Property Line	18	19

The noise exposures during the Chinese New Year event and during regular Sunday prayer service are within the 55 dB DNL limit of the Santa Clara County Noise Element standards when other loud, spurious noise events do not occur.

B. Project-Generated Noise Levels and Noise Exposures

The proposed project includes the construction of a new temple building, paved parking area and a garage. The larger new building can support a larger congregation.

Regular Sunday service may support up to 100 people and special events may support up to 300 people. As with the current scenarios, Sunday service will be from 11:00 AM to 3:00 PM with most of the congregation arriving and staying for the entire period. The event scenario will occur from 8:00 AM to 8:00 PM with up to 300 people in attendance, but most people will come and go throughout the course of the day.

The proposed Sunday service capacity will be about 112% of the measured Sunday capacity, the outdoor activities will take place indoors and the parking lot will be paved.

The proposed special event scenario capacity will be about triple of the measured Chinese New Year event. However, the outdoor activities will take place indoors and the parking lot will be paved. The proposed scenario will include 3 charter buses entering and exiting the site. We are assuming that the charter buses will be smaller, quieter gas-powered "land yacht" type vehicles rather than large, noisy typical diesel-powered buses as the buses are planned to carry approximately 30 passengers. The use of diesel-powered vehicles will likely cause violations of the Noise Ordinance at the northerly property line.

Table IV, below, provides the project-generated short-term noise levels expected from planned Sunday prayer service at the most impacted residential property lines.

TABLE IV

Sunday Service Project-Generated Noise Levels, dBA

Source	L_{max}	L_2	L_8	L_{25}	L_{50}
Noise Limit =	75	70	65	60	55
North Property Line					
Cars	44	44	43	33	27
People	46	45	42	37	31
TOTAL	**46**	**47**	**45**	**39**	**33**
East Property Line					
Cars	30	30	29	19	13
People	28	27	24	19	13
TOTAL	**30**	**32**	**30**	**22**	**16**

As shown above, the project-generated noise levels at the most impacted northerly and easterly property lines from Sunday prayer services will be within the limits of the Santa Clara County Noise Ordinance standards. The noise levels are expected to be lower than existing levels as much of the outdoor activity will be moved indoors and the parking area will be paved.

Table V provides the project-generated noise levels expected from a "worst-case scenario" Chinese New Year event at the most impacted residential property lines.

TABLE V					
Special Event Project-Generated Noise Levels, dBA					
Source	L_{max}	L_2	L_8	L_{25}	L_{50}
Noise Limit=	75	70	65	60	55
North Property Line					
Cars	44	40	38	28	20
Buses	54	54	53	51	48
People	46	46	43	38	32
TOTAL	**54**	**55**	**54**	**51**	**48**
Event without buses					
Cars	44	44	42	33	27
People	46	46	43	38	32
TOTAL	**46**	**48**	**45**	**39**	**33**
East Property Line					
Cars	30	28	24	14	6
Buses	40	40	39	37	34
People	28	28	25	20	14
TOTAL	**40**	**41**	**39**	**37**	**34**
Event without buses					
Cars	34	35	31	21	13
People	28	28	25	20	14
TOTAL	**34**	**36**	**32**	**23**	**16**

As shown in Table V, the project-generated noise levels from special events with up to 300 attendees will be within the limits of the Santa Clara County Noise Element standards.

The project-generated noise exposures were calculated by applying the expected hourly average noise levels from both operational scenarios to the DNL formula. Table VI, below, provides the project-generated noise exposures for the event scenarios with and without bus service and for regular Sunday prayer service.

TABLE VI			
Project-Generated Noise Exposures, dB DNL			
Event	North Property Line	East Property Line	Murillo Ave. Prop. Line
With Buses	44	30	34
Without Buses	29	12	26
Sunday	26	9	20

The project-generated noise exposures will be within the 55 dB DNL limit of the Santa Clara County Noise Element standards and will be lower than the existing project-generated noise exposures. The project-generated noise exposures will also be lower than the existing total noise exposures.

Noise impacts to noise sensitive receptor locations in the vicinity of the planned project will be less than significant. Noise mitigation measures will not be required.

C. No Project Alternative

CEQA requires an analysis of a "no project" scenario. The facility is currently in use, therefore, on-site noise measurements for the no project analysis could not be performed. Since the project does not affect the noise environment at the east residential property line, the noise data acquired at the east property represents the noise environment in the area with or without the project. Thus, these noise levels represent the noise environment at the site with the previous residence located on the site.

The hourly average noise levels at the residential property line to the east ranged from 45-51 dBA Leq from 9:00 AM to 8:00 PM. Using hourly distribution data for Sunday hours in rural areas, the corresponding noise exposure was calculated to be 47 dB DNL. The Murillo Avenue traffic noise component was calculated to be 36 dB DNL at the east property line. At the property line of the site closest to Murillo Avenue, the noise exposure was calculated to be 53 dB DNL.

Under the no project alternative, the noise exposures at the site and along the north and south property lines range from 47 to 53 dB DNL. These noise exposures are typical for the environment.

The above report presents a noise assessment study for the planned "Canh Thai Temple" at 2532 Klein Road in Santa Clara County. The study findings are based on field measurements and other data and are correct to the best of our knowledge. However, significant changes in the project description, expected attendance at event or services, changes in equipment or operating scenarios, noise regulations or other future changes beyond our control may produce long-range noise results different from our estimates.

If you have any questions or would like an elaboration on this report, please call me.

Sincerely,

EDWARD L. PACK ASSOC., INC.

Jeffrey K. Pack
President

APPENDIX A

References:

(a) Site Plan, Lands of Buddhist Temple, by MH Engineering, September, 2013

(b) Noise Element of the General Plan, County of Santa Clara, December 20, 2004

(c) Noise Ordinance of the County of Santa Clara, Chapter VII, Section B11-192, 1981

(d) Project Description, Canh Thai Temple, Provided by Ms. Gloria Ballard, MH Engineering, by email to Edward L. Pack Associates, Inc., November 4, 2014

APPENDIX B

Noise Standards and Terminology

1. Noise Standards

A. Santa Clara County Noise Element Standards

The Land Use Compatibility Standards of the Santa Clara County Noise Element, use the Day-Night Level (DNL) noise descriptor and identify an exterior noise environment of up to 55 dB DNL as satisfactory for residential uses. Where the noise level at a proposed development site is below 55 dB DNL, mitigation measures are not required. The exterior noise level range between 55 and 65 dB DNL is identified as "cautionary", and over 65 dB is "critical".

Industrial land use noise exposures are limited to 70 dB DNL.

For interior exposures in residential buildings, a compatibility level of 45 dB DNL is specified.

2. Terminology

A. Day-Night Level (DNL)

Noise levels utilized in the standards are described in terms of the Day-Night Level (DNL). The DNL rating is determined by the cumulative noise exposures occurring over a 24-hour day in terms of A-Weighted sound energy. The 24-hour day is divided into two subperiods for the DNL index, i.e., the daytime period from 7:00 a.m. to 10:00 p.m., and the nighttime period from 10:00 p.m. to 7:00 a.m. A 10 dBA weighting factor is applied (added) to the noise levels occurring during the nighttime period to account for the greater sensitivity of people to noise during these hours. The DNL is calculated from the measured L_{eq} in accordance with the following mathematical formula:

$$DNL = [(L_d+10\log_{10}15) \,\&\, (L_n+10+10\log_{10}9)] - 10\log_{10}24$$

Where:

L_d = L_{eq} for the daytime (7:00 a.m. to 10:00 p.m.)
L_n = L_{eq} for the nighttime (10:00 p.m. to 7:00 a.m.)
24 indicates the 24-hour period
& denotes decibel addition.

B. A-Weighted Sound Level

The decibel measure of the sound level utilizing the "A" weighted network of a sound level meter is referred to as "dBA". The "A" weighting is the accepted standard weighting system used when noise is measured and recorded for the purpose of determining total noise levels and conducting statistical analyses of the environment so that the output correlates well with the response of the human ear

3. Instrumentation

The on-site field measurement data were acquired by the use of one or more of the sound analyzer listed below. The instrumentation provides a direct readout of the L exceedance statistical levels including the equivalent-energy level (L_{eq}). Input to the meters were provided by microphones extended to a height of 5 ft. above the ground. The "A" weighting network and the "Fast" response setting of the meters were used in conformance with the applicable standards. The Larson-Davis meters were factory modified to conform to the Type 1 performance standards of ANSI S1.4. All instrumentation was acoustically calibrated before and after field tests to assure accuracy.

Bruel & Kjaer 2231 Precision Integrating Sound Level Meter
Larson Davis LDL 812 Precision Integrating Sound Level Meter
Larson Davis 2900 Real Time Analyzer