12670 High Bluff Drive
San Diego, California 92130
Tel: +1.858.523.5400 Fax: +1.858.523.5450
www.lw.com

LATHAM & WATKINS LLP

FIRM / AFFILIATE OFFICES

| | |
|---|---|
| Beijing | Moscow |
| Boston | Munich |
| Brussels | New York |
| Century City | Orange County |
| Chicago | Paris |
| Dubai | Riyadh |
| Düsseldorf | Rome |
| Frankfurt | San Diego |
| Hamburg | San Francisco |
| Hong Kong | Seoul |
| Houston | Shanghai |
| London | Silicon Valley |
| Los Angeles | Singapore |
| Madrid | Tokyo |
| Milan | Washington, D.C. |


June 14, 2018

**VIA EMAIL**

Ashley Smith
Planning and Development Services
County of San Diego
5510 Overland Avenue, Suite 310
San Diego, CA 92123

**Re: Newland Sierra (Log No. PDS2015-ER-15-08-001; SCH No. 2015021036, Project Numbers: PDS2015-GPA-15-001, PDS2015-SP-15-001, PDS2015-REZ-15-001, PDS2015-TM-5597, PDSXXXX-HLP-XXX) – Failure to Properly Analyze and Mitigate Impacts from Noise**

Dear Ms. Smith:

As you are aware, we represent Golden Door Properties, LLC ("Golden Door"), a world-class resort and agricultural operation in rural Twin Oaks Valley. The Golden Door has restored farming and beekeeping, including replanting many new trees, on its property, and shares its products through a community Farm Stand and other retail operations. The Golden Door has raised many concerns with the County about the proposed Newland Sierra Project and the impacts of adding urban density the size of the City of Del Mar in our rural community.

We write today with respect to the Project's noise impacts, as follow-up and supplemental to our prior correspondence. As noted in the attached memorandum, there are many procedural and substantive deficiencies in the draft EIR with regarding to this issue. We believe that these defects are of sufficient severity that the project's review and processing cannot proceed until these defects are corrected and the project's environmental review documents are re-published to the public for review and comment under CEQA and other laws.

Thank you for your time and attention to our comments. Please do not hesitate to contact us should you have any questions or comments.

Best regards,

Taiga Takahashi
of LATHAM & WATKINS LLP

Enclosure

cc: Darin Neufeld, County Planning and Development Services
Mark Slovick, County Planning and Development Services
William W. Witt, Office of County Counsel
Claudia Silva, Office of County Counsel
Dan Silver, Endangered Habitats League
George Courser, Sierra Club
Stephanie Saathoff, Clay Co.
Denise Price, Clay Co.
Christopher Garrett, Latham & Watkins
Kathy Van Ness, Golden Door

# ENCLOSURE

PAPADIMOS GROUP

222 VALLEJO STREET, 4TH FLOOR
SAN FRANCISCO, CA 94111
TEL +1 (415) 986-9100
www.papadimosgroup.com

4 June 2018

Kathy Van Ness
Golden Door Properties, LLC
777 Deer Springs Road
San Marcos, California

SUBJECT: Newland Sierra – San Diego County, California
Acoustic and Vibration Review

Dear Ms. Van Ness:

Per your request, we have reviewed the following sections of the Draft Environmental Impact Report (DEIR) for the Newland Sierra Project (dated June 2017) in San Diego County, California with the primary focus the potential significant impacts to the existing operations at the Golden Door.

- Section 2.10 Noise
- Section 2.13 Traffic and Circulation
- Appendix Q: Noise Report (by DUDEK)
- Appendix R: Traffic Impact Analysis (by LLG)

In summary, the current Newland project assessment is incomplete. First, it does not fully address regulatory requirements; it does not include a proper noise survey of the project site and vicinity that establishes baseline conditions with appropriate confidence. Second, the Newland studies have not proposed mitigation measures for identified significant impacts; rather they propose deferred analysis or classifies them as unavoidable. We disagree with such positions for the reasons noted herein.

The study is missing an assessment of noise and vibration at the Golden Door property, where quiet ambient conditions are required for operation. Some construction activities identified in the study would likely be disturbing and clearly audible above ambient conditions, even if the San Diego County noise limits are met. The Newland technical analysis should, but does not, address these conditions.

**NOISE AND VIBRATION CRITERIA**

The Newland technical analysis is generally missing an assessment of noise and vibration impacts to the Golden Door facility, located south-west of the project along Deer Springs Road. This assessment should be included given the Golden Door's proximity to Deer Springs Road and the project site. This receiver (the Golden Door property) should be assessed using the standards for residential uses and NSLUs since it includes sleeping facilities, and meets the following definition from *San Diego County Guidelines for Determining Significance* (dated January 2009):

> **1.1.6 Noise Sensitive Land Use (NSLU)**
>
> Any residence, hospital, school, hotel, resort, library, or similar facility where quiet is an important attribute of the environment.

This type of facility relies on quiet ambient conditions with minimal intruding noise common in a rural area to operate successfully. Existing ambient conditions should be maintained to avoid significant impacts and such an assessment is required for CEQA items XI.c and XI.d discussed below.

**NOISE SURVEY**

The noise study by DUDEK is incomplete as it has not properly documented existing ambient noise levels in the project vicinity. Only daytime short-term noise measurements (20 mins long) were taken (primarily next to existing roadways). This insufficient to establish ambient noise conditions (CEQA Items XI.c & d) or to address regulatory requirements (CEQA Item XI.a).

Noise standards in the San Diego County General Plan are in terms of CNEL, which is the average noise level over 24-hours. Accordingly, CNEL inherently requires noise measurements over 24-hour period, at a minimum. Measurements were only taken during mid-day and do not allow for establishing the full range of noise exposure, particularly for congested segments such as Deer Springs Road (currently Traffic Level of Service F). (Refer to definitions of common acoustical terms attached to this letter.)

Statistical noise metrics (such as L90 and L99) (typically required to properly establish existing ambient conditions) are missing from the noise study. We anticipate ambient noise levels are very low away from the road on the Golden Door property and a survey of these conditions should be considered to properly evaluate the impact of construction related noise as discussed in the sections below.

The Newland technical analysis does not use proper instrumentation. Measured daytime levels were as low as 39 dBA, which is near the noise floor (lowest measurable level) of the sound level meter used in the Newland technical analysis (SoftdB Piccolo). This type of instrument may not be adequate in conducting 24-hour noise surveys since nighttime and early morning ambient noise levels are expected to be at or below this level.

Reported existing conditions on Deer Springs Road should be further evaluated and compared to the noise study performed for the San Diego County General Plan Update (FEIR Dated August 2011, Section 2.11), which reports existing noise levels close to 10 dB lower (64 dBA CNEL) than the DUDEK study at a similar distance from the road (100 feet). It is difficult to evaluate the credibility or merits of the Newland technical analysis without analysis as to why existing noise levels are different in the General Plan Update analysis.

**TRAFFIC NOISE MODELING**

The Newland noise study has not clearly documented the basis of modeling for future conditions without the project. This is key in assessing noise under CEQA Items a, b and c as described in the sections below.

The study has not included adequate documentation of modeled future conditions with the proposed road changes along Deer Springs Road (Options A and B) including adding new lanes (e.x. 6 lane vs 4 lane vs 2 lane with shared turning lane), grading and realignment that all affect traffic noise exposure. Without this information, the accuracy of the modeled future conditions cannot be verified.

**CEQA ITEM XI.a – Noise exposure exceeding codes and standards**

*Traffic Noise*

The study is missing assessment of project generated traffic noise against the following noise limits in the San Diego County General Plan (Table N-2, Items 1 & 3). A proper noise survey with minimum 24-hour measurements is required to address these limits as described in the section above.

- 60 dBA CNEL at existing or future noise sensitive land uses (NSLU)
- 65 dBA CNEL at existing commercial land uses

The Newland study has only partially assessed project noise against the following significance criteria (*San Diego County Guidelines for Determining Significance*). The Newland study has not properly documented existing conditions (see Noise Study section above). Further, the basis of the traffic noise modeling may be flawed and require revisiting as described below.

- 3 dB increase over existing, at "documented noisy site" (exceeding standards above)
- 10 dB increase over existing
- 2 dB increase over existing, inclusive of non-project conditions

Future traffic noise on Deer Springs Road without the project may be overpredicted, considering that this road and nearby intersections are currently operating at Level of Service LOS F as described in the Traffic Impact Analysis (Appendix R1a), which would limit traffic noise due to reduced speed during congestion. Traffic noise should be assessed under free traffic flow conditions (typically at LOS C), as this would result in worst-case noise exposure.

The predicted noise levels appear to be based on the expansion of Deer Springs Road according to the San Diego County General Plan, but this may not be an accurate representation of future conditions for the following reasons.

First, this roadway expansion may not be an active project or may not occur at all (could be accepted at LOS F), consistent with the *Regional Connectivity* policy in the Mobility Element of the San Diego County General Plan, considering this roadway is already beyond capacity:

> *"Regional connectivity issues would apply when congestion on State freeways and highways causes regional travelers to use County roads, resulting in congestion on the County road network. Rather than widening County roads to accommodate this traffic, the deficiencies in the regional road network should be addressed."*

Future traffic on this road (without the project), if expanded, may not increase, because traffic flow may be limited by the service level of the I-15 interchange area, as the Deer Springs Road segment and turning lanes were accepted at LOS E/F per the Mobility Element of the current general plan.

Furthermore, Caltrans reportedly has no projects in this area, including the I-15 interchange, and has stated that the traffic impact study is "insufficient and misleading" (see letter from Roy Abboud dated August 10, 2017). Since the Newland study appears to be the basis for future traffic noise analysis, it needs to be revised to address any changes in the traffic analysis

*General Construction Noise*

Section 3.3 of the report provides only a generic assessment of noise and vibration from general construction activities such as grading, earthmoving, batch processing and others. Assessment is only included for residential receivers near the proposed project entrance (I-15 interchange) and is missing assessment for other NSLUs such as residences and the Golden

Door property along Deer Springs Road. Assessment of construction of Deer Springs Road is also missing.

The study concludes the following are potentially significant impacts but proposes no mitigation (discussed below):

- On-site construction of Town Center neighborhood
- Construction on Mesa Rock Road at proposed project entrance

The study has incorrectly determined the following impacts to be less than significant due to "project design features" such as properly maintained construction equipment, generic setbacks from sensitive receivers, and others, but provides no quantitative evidence to support this claim (mitigation discussed below).

- Construction staging areas
- Equipment repair
- Portable Rock-Crushing/Processing Facility

*Construction Related Traffic Noise*

Construction traffic on Deer Springs Road is improperly assessed by comparing the anticipated number of vehicles on the road to what appears to be the peak hour and average daily traffic volume (ADT). Construction traffic is typically comprised of large trucks and other heavy vehicles, which generate higher noise levels than typical automobiles.

According to observations made during the Newland noise study, traffic on Deer Springs Road is primarily automobiles, with trucks accounting for less than 5% total volume. Construction traffic would therefore be out of character for this existing rural area and should instead be assessed based on noise increase over ambient conditions and the county's limits at sensitive receivers.

*Other Construction Activities*

Some other construction activities may include blasting, pile driving, rock crushing, cement batch plant, and possibly others. The Newland study confirms such activities will likely be used for this project. The Newland study does not include a technical assessment of blasting noise but identifies it as a potentially significant impact requiring further analysis (mitigation discussed below).

The Newland study has not properly analyzed noise from pile driving, claiming the county's impulsive noise limits do not apply since the pile driver would not generate noise for more than 20% of the hour, which is below the county's threshold of 25% of the measurement time

(*San Diego County Guidelines for Determining Significance, Noise, Section 4.2.C).* However, the claimed 20% use time is based on a generic "use factor" used by noise prediction software issued by the Federal Highway Administration (FHWA). The Newland study does not even attempt to make an estimate of actual usage time. A project specific analysis should therefore be provided based on the actual and detailed project construction schedule and plan as discussed in the mitigation section below.

**CEQA ITEM XI.b – Excessive exposure to groundborne vibration or noise**

*Construction Vibration*

The study only provides generic assessment of construction vibration but confirms various activities including grading, blasting, and others are potentially significant. Specific assessment including all sensitive receivers near the project site and along Deer Springs Road should be carried out. Such assessment currently does not exist.

**CEQA ITEM XI.c & d – Substantial permanent or temporary increase in ambient noise**

*Traffic Noise*

Increases in traffic noise above existing conditions in the project vicinity would need to be reassessed once a proper noise study has been completed as discussed in the section above.

*Construction Noise & Vibration*

The study is missing an assessment of construction noise and vibration in comparison to local ambient conditions, and this would require a proper study as discussed above. Assessment should include the full range of planned construction processes such as blasting, batch processing, grading etc. as well as construction related traffic that may be out of character for this rural area. This assessment should be used to author specifications that are included in biding and contract documents to accurately reflect project delivery methods that would affect construction costs.

Ambient noise levels on the Golden Door property are likely very low (40 dBA or less), particularly away from the road, and we anticipate construction activities such as blasting, pile driving and construction on Deer Springs Road would be clearly audible as estimated in Table 1 below. This type of facility requires a quiet environment, and such a large increase in noise levels would be disruptive and alternatives to loud construction methods (such as pile driving) may need to be required if there is no other feasible mitigation. This is particularly important for this large-scale development where construction reportedly could span close to 10 years.

TABLE 1 – Estimated Construction Noise at Golden Door Property

| Example Activity | Ref. Level at 50 ft (Lmax)[1] | Setback on Golden Door property | Predicted Noise Level[2] | Increase above Ambient (est. 40 dBA) |
|---|---|---|---|---|
| Blasting | 94 dBA | 2,000 ft | 62 dBA | +22 dB |
| | | 5,000 ft | 54 dBA | +14 dB |
| | | 10,000 ft | 48 dBA | +8 dB |
| Pile Driving | 101 dBA | 2,000 ft | 69 dBA | +29 dB |
| | | 4,000 ft | 63 dBA | +23 dB |
| Batch Plant | 83 dBA | 5,400 ft | 44 dBA | +4 dB |
| Grading (Deer Springs Road) | 85 dBA | 50 ft | 85 dBA | +45 dB |
| | | 600 ft | 64 dBA | +24 dB |
| Compactor (Deer Springs Road) | 80 dBA | 100 ft | 74 dBA | +34 dB |
| | | 600 ft | 59 dBA | +19 dB |
| Paver (Deer Springs Road) | 77 dBA | 100 ft | 71 dBA | +31 dB |
| | | 600 ft | 56 dBA | +16 dB |
| Concrete Mixer Truck (Deer Springs Road) | 79 dBA | 100 ft | 73 dBA | +33 dB |
| | | 600 ft | 58 dBA | +18 dB |

NOTES:
1. Based on data in the Roadway Noise Construction Model issued by Federal Highway Administration
2. Worst case assessment assuming direct line of sight to construction

**MITIGATION MEASURES**

*Traffic Noise*

The study states mitigation for traffic noise is infeasible due to adverse community response but provides no assessment of potential benefits for this project, which is required by CEQA in order for the public to make informed decisions.

Noise barriers are a common and effective mitigation for traffic noise and would likely benefit NSLUs (such as the Golden Door) along project impacted roadways such as Deer Springs Rd. There are a limited number of driveways on Deer Springs Road and periodic breaks in a noise barrier for driveways would not render these barriers ineffective. Any NSLUs that would receive limited or no benefit from installing noise barriers should be clearly identified in the study and mitigation and/or alternatives proposed.

The remaining traffic noise mitigation such as reduced speed limits and other traffic calming measures may not be undesirable since they may also be considered for traffic congestion relief on already overcrowded roadways such as Deer Springs Road.

*General Construction Noise & Vibration*

Except for impulsive types of activities (discussed below), the Newland study only recommends deferred analysis (for vibration) or cites "project design features" that would likely not mitigate construction noise since they are generally considered industry standard practice (such as properly maintained construction equipment with working mufflers). The Newland study also states these project design features have already been considered in the assessment and therefore cannot be proposed as mitigation.

A proper study needs to first predict anticipated noise and vibration exposure during various construction phases, identify impacted areas and develop specific mitigation measures quantitatively shown to reduce impacts below threshold of significance. For some high-noise and vibration activities (such as pile driving, jackhammer, etc.), the only feasible mitigation may be use of alternative construction methods, and this should be confirmed with mock-up testing of such activities prior to EIR approval. The Newland study fails to employ the proper methodology.

In addition, use of noise barriers to mitigate construction noise should be based on a project specific study used to evaluate feasibility and identify specific locations, heights and extents for such mitigation measures. This is essential since noise attenuation provided by a barrier varies greatly depending on barrier height and location of source, receiver and barrier and topographical parameters.

A construction noise and vibration monitoring plan should be included as a mitigation measure to ensure regulatory noise limits continue to be met throughout construction and to provide a quantifiable record in the event of complaints. This measure should also establish protocols for mitigation if regulatory noise or vibration limits are exceeded such time restrictions, use of sound barriers and possibly others. The plan should include procedures to be followed when noise and vibration limits are exceeded. This is also recommended by Caltrans guidelines for construction vibration (*Transportation and Construction Vibration Guidance Manual*, September 2013).

*Blasting Noise & Vibration*

The Newland study states that blasting will be used on this project and would be the primary source of construction vibration but only proposes deferred analysis for mitigation. This is not consistent with CEQA, which requires such studies be part of the EIR process and used to develop mitigation measures for identified significant impacts.

A project specific blasting study should be included in the EIR that identifies and includes all sensitive receivers in the project vicinity that may be impacted, including the Golden Door property. Given the proximity to existing residential uses, a pilot study of limited blasting should be undertaken to develop appropriate mitigation or determine if such activities should even be allowed, as it is conceivable that alternative construction methods may be warranted to control noise and vibration levels.

The Newland study only requires blasting vibration to meet the county's limit of 1 in/sec PPV (*San Diego County Guidelines for Determining Significance, Noise, Section 4.2.C*). However, this criteria may not be stringent enough given the sensitive nature of the surrounding uses.

Blasting noise and vibration should be assessed against the existing local ambient conditions since blasting noise would be out of character in this rural area. In the absence of a specific study used to establish appropriate limits above the existing ambient, we recommend limits of 50 dB (linear) for airborne noise and 0.02 in/sec PPV for vibration levels, based on the *Transportation and Construction Vibration Guidance Manual*, issued by Caltrans September 2013.

Blasting noise and vibration monitoring should be included as discussed above for general construction activities.

Where blasting would exceed noise and vibration levels discussed above, alternative demolition methods should be used. This could include manual methods (such as saw-cutting), expansive demolition (expansive mortar), electrical rock disintegration, and possibly others.

*Future Development*

This project proposes a large mixed-use development in a primarily rural area, and over time the project may encourage further development in this area. Future development should be assessed against the current ambient conditions to avoid incrementally allowing higher and higher noise and levels at nearby NSLUs. This mitigation measure should be considered for the proposed Specific Plan for the development area.

*  *  *

Please do not hesitate to contact our office if you have any questions.

Sincerely,

Nathan Sibon
Associate

Reviewed By,

Chris Papadimos, INCE
Principal

Enclosures: Definitions of Common Acoustical Terms
Curriculum Vitae – Nathan Sibon
Curriculum Vitae – Chris Papadimos

## DEFINITIONS OF COMMON ACOUSTICAL TERMS

**Decibel, dB** – A unit describing the amplitude of sound, defined as 20 times of the logarithm of the ratio of the sound pressure measured to the reference pressure (20 µPa).

**A-weighted Sound Level, dBA** – The sound pressure measured using the A-weighting filter network that de-emphasizes the very low and very high frequency components of the sound spectrum in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.

**Ambient Noise –** The sound level in a given environment usually comprised of many sources in many directions near and far with no particular sound dominant. It is of the defined as $L_{99}$ or the noise level exceeded 99% of the time.

**Background Noise** - The total noise from all sources other than the source of interest. It is often defined as $L_{90}$ or the noise level exceeded 90% of the time.

**Community Noise Equivalent Level, CNEL** – The average A-weighted noise level in a 24-hour day, obtained after adding 5 dB to evening hours (7:00 pm to 10:00 pm) and 10 dB to sound levels measured in the night (between 10:00 pm and 7:00 am).

**Day/Night Noise Level, $L_{dn}$ (or DNL)** – The average, 24-hour A-weighted noise level, obtained after adding 10 dB to levels measured at night (10:00 pm to 7:00 am).

**Integrated or Equivalent Noise Level, $L_{eq}$** – The energy average A-weighted noise level during the measurement period.

**Sound level meter** - An instrument that measures sound in dB. Various features are incorporated into such instrument including frequency bands, integration of sound over time and display of average, minimum, and maximum levels.

**Sound pressure level** - the ratio, expressed in decibels, of the mean-square sound pressure level to a reference mean-square sound pressure level that by convention has been selected to approximate the threshold of hearing (0.0002 µbar)

**Frequency** – The number of times per second that the oscillation of a wave of sound or that of a vibrating body repeats itself, expressed in Hertz (Hz).

**Octave band** - The frequency range of one octave of sound frequencies. The upper limit is always twice the frequency of the lower limit. Octave bands are identified by the geometric mean frequency or center between the lower limit and the upper limit.

## NATHAN SIBON
## *ASSOCIATE*

Mr. Sibon has been with our consulting practice since July 2014 after graduating from Columbia College Chicago with a B.S. in Acoustics. Since then, Mr. Sibon has been closely working under the direction of Mr. Papadimos and rapidly gaining practical consulting experience including all aspects of community and environmental noise and vibration.

Specifically, he has experience in establishing criteria to address local and state regulations, carrying out environmental surveys, analyzing traffic and construction impacts, developing and implementing mitigation strategies, and reviewing of environmental studies.

Mr. Sibon strives to provide meaningful, project specific solutions through clear understanding of the client's goals and early project involvement. He works on specific tasks associated with current projects either independently or under the direction of senior staff.

**PROJECT EXPERIENCE**

- 410 Noor - South San Francisco, CA - Acoustical study for proposed residential development under the departure path for San Francisco International Airport.
- Golden Gate Recreation Center - Oakland, CA - Noise remediation for rooftop mechanical equipment for community center to comply with local code.
- Hakone Gardens - Saratoga, CA - Participated in an acoustic study to address special event noise in the surrounding area for compliance with local code.
- Lagunitas Country Club - Ross, CA - Measured and assessed club noise to the surrounding residential community for environmental compliance.
- Rancho McHolland - Hemet, CA - Peer review of EIR for analyzing potential noise impacts for new gas station and carwash near existing residential neighborhoods.
- Raymond-Ticen Winery - St. Helena, CA - Measured and analyzed special event noise emissions at the winery and assessed potential impact to the project vicinity.
- Rotten Robbie - Sebastopol, CA - Participated in the review and analysis of car wash noise and evaluation of noise control options for local code compliance.
- Safari Highlands - Escondido, CA - Peer review of EIR for large-scale residential development to analyze potential noise and vibration impacts to surrounding areas.
- Safari Kid - Hayward, CA - Acoustic consulting for outdoor play area for daycare facility and develop mitigation for compliance with local code.
- St. Mary's Medical Center - San Francisco, CA - Facility mechanical equipment noise remediation to meet local code at surrounding residences.
- Suprema Meats - Oakland, CA - Participated in a noise study and peer review to assess facility potential impacts to the surrounding neighborhood.

## CHRISTOPHER PAPADIMOS, INCE
***PRINCIPAL***

CHRISTOPHER PAPADIMOS is an acoustical consultant with close to 30 years of professional experience in measuring, assessing and developing mitigation strategies for projects with acoustical and vibration requirements.

Since 1989, he has worked continuously on a large number of projects for various types of facilities involving environmental acoustics, noise and vibration control for mechanical systems, structural noise and vibration, and architectural acoustics. Projects include residential and commercial buildings, institutional and government buildings, worship and performing spaces, and transportation and industrial facilities.

Mr. Papadimos has authored numerous acoustical studies for various project types. Transportation noise and vibration studies include freeways and rail systems, road widening and improvement projects, and airport facilities. Other studies include residential, commercial and mixed use developments, and various types of industrial facilities.

Mr. Papadimos favors a practical approach of early integration of acoustical requirements into each project. He is experienced in establishing acoustical criteria, undertaking site and building surveys, developing and implementing mitigation strategies, reviewing construction methods and providing options for remedial solutions. He has participated on research projects, provided expert testimony and remains actively involved in the development of technical standards and guidelines.

### PROFESSIONAL ENGAGEMENTS

- Papadimos Group – Founding Principal (January 2005 to present)
- Cerami & Associates – Associate Principal (April 2004 to December 2004)
- Shen Milsom & Wilke – Associate (May 2001 to March 2004)
- Illingworth & Rodkin – Senior Consultant (January 1999 to May 2001)
- Frank Hubach Associates – Consultant (May 1995 to December 1998)
- Illingworth & Rodkin – Consultant (July 1989 to May 1995)

### EDUCATIONAL BACKGROUND

- University of California at Los Angeles , B. Sc. Mechanical Engineering, (1989) Magna Cum Laude, Departmental Scholar, Dean's and Honor Lists
- Airport Noise Planning using INM Computer Modeling, Engineering Program, University of Texas at Austin, 1993

### PROFESSIONAL SOCIETIES

- ASHRAE – Past Chair for Technical Committee and Member
- Institute of Noise Control Engineering – Full Member
- AMCA – Voting Member for Standard Development

**PROJECT EXPERIENCE (Partial List)**

- 410 Noor - South San Francisco, CA - Acoustical study for proposed residential development under the departure path for San Francisco International Airport.
- BART Subway Extension to SFO, Colma, CA - Noise and vibration consultant and expert witness to the Coalition of Colma Cemeteries.
- Bay Bridge Pile Demonstration Project - San Francisco, CA - Participated on environmental studies for the eastern span bridge replacement project.
- Black Dog Amphitheater - Burnsville, MN - Acoustic studies for new amphitheater to the surrounding communities
- Boot & Shoe Restaurant - Oakland, CA - Expert witness and peer review for restaurant remodel that included outdoor dining next to residential.
- Cal Memorial Stadium - Berkeley, CA - Acoustic consulting and expert witnessing for large renovation project to address community concerns.
- Community Pool - Calistoga, CA - Expert witness and analysis for new community pool project to limit noise emissions to surrounding residential areas.
- Caltrans Soundwall Studies - Participated in before and after noise studies to study the effectiveness of sound barriers under various weather conditions.
- Davies Vineyards Winery - St. Helena, CA - Provided acoustic review to address among other activities from a rooftop patio and amplified music.
- Emerystation Center - Emeryville, CA - Provided acoustic consulting services for new buildings and tenant improvement projects for code compliance.
- Foster City Aircraft Noise Exposure - Assessment of SFO aircraft noise to the City of Foster City for General Plan land use compatibility.
- Genentech Campus - South San Francisco, CA - Acoustic consulting for Hilltop Office Building 35, Employee Center, Central Plant Facility.
- Golden Gate Recreation Center - Oakland, CA - Noise remediation for rooftop mechanical equipment for community center to comply with local code.
- Hakone Gardens - Saratoga, CA - Completed acoustic study for event center to comply with local noise conditions and served as expert witness.
- Harold Smith & Sons - St Helena, CA - Completed acoustic study for materials handling and cement mixing facility that included noise control options.
- Livermore Municipal Airport - Livermore, CA - Acoustic studies to mitigate aircraft noise to nearby recently completed residential developments
- Macae Energy Center - Environmental noise studies for power generation complex in the rain forest to comply with World Bank regulations - Macae, Brazil

**PROJECT EXPERIENCE (continued)**

- McCarran International Airport - Las Vegas, NV - Sound insulation studies for mixed-use development projects near the airport.
- Mercy Retirement and Care Center - Oakland, CA - Noise control for backup diesel generator to comply with local code.
- Oakland International Airport - Participated in sound insulation review studies for existing residential developments near the airport.
- Rancho McHolland - Hemet, CA - Peer review of EIR for analyzing potential noise impacts for new gas station and carwash near existing residential neighborhoods.
- Rotten Robbie - Sebastopol, CA - Peer review of car wash noise control options.
- Safari Highlands - Escondido, CA - Acoustic review of large-scale residential development to address environmental concerns including on wildlife.
- Safari Kid - Hayward, CA - Acoustic consulting for outdoor play area for daycare facility and develop mitigation for compliance with local code.
- St. Mary's Medical Center - San Francisco, CA - Community noise for facility mechanical equipment for surrounding residential areas.
- Stanford Hospitals and Clinics - Provided acoustic and vibration consulting services for the hospital replacement and existing hospital renovation projects.
- Stanford University - Palo Alto, CA - new construction and renovation projects including Old Chemistry, James H Clark Center, Lucas MRS Center, Crown Hall.
- Suprema Meats - Oakland, CA - Expert witness for facility noise remediation
- Sweetwater Saloon - Mill Valley, CA - Noise mitigation for nightclub expansion and renovation to limit noise emissions to surrounding areas.
- UGGPP Energy Center - San Francisco International Airport - Noise studies and attendance to energy commission hearings for new 1200 MW power plant.
- Wallingford Energy Center - Wallingford, Connecticut - 250 MW Simple Cycle Power Facility - comprehensive acoustical services.
- Warren Hall Seismic Retrofit, California State University at Hayward - Conducted noise and vibration feasibility studies for the seismic retrofit of this building.
- Westside Road Winery - Healdsburg, CA - Prepared acoustic study for facility expansion to include event center to address potential environmental impacts.
- UCSF Parnassus and Mission Bay Campuses, San Francisco, CA - Acoustic and vibration consulting for multiple new and existing research facilities.
- Valle Del Sol Master Planning - Feasibility studies for proposed large-scale mixed-use development near the Albuquerque International Airport.