Home2 Suites by Hilton

City of Tracy, California

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The Home2 Suites project is located south of Interstate Highway 205 at the northwest corner of Grant Line Road and Corral Hollow Road on approximately 1.89 acres. The project proposes the development of a 4 story, 94 room hotel with 107 parking stalls with two access points. Figure 1 shows the project site plan.

This section provides a general description of the existing noise sources in the project vicinity, a discussion of the regulatory setting, and identifies potential noise impacts associated with the proposed project. Project impacts are evaluated relative to applicable noise level criteria and to the existing ambient noise environment. Mitigation measures have been identified for significant noise-related impacts.

ENVIRONMENTAL SETTING

KEY TERMS

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given area consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of noise.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, defined as ten times the logarithm of the ratio of the sound pressure squared over the reference pressure squared.
CNEL	Community noise equivalent level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic acoustic signal, expressed in cycles per second or Hertz.
Impulsive	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
L_{dn}	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
L_{eq}	Equivalent or energy-averaged sound level.
L_{max}	The highest root-mean-square (RMS) sound level measured over a given period of time.
$L_{(n)}$	The sound level exceeded a described percentile over a measurement period. For instance, an hourly L50 is the sound level exceeded 50 percent of the time during the one hour period.

Loudness A subjective term for the sensation of the magnitude of sound.

Noise Unwanted sound.

SEL Sound exposure levels. A rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy into a one-second event.

FUNDAMENTALS OF ACOUSTICS

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels, but are expressed as dB, unless otherwise noted.

The decibel scale is logarithmic, not linear. In other words, two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70 dBA sound is half as loud as an 80 dBA sound, and twice as loud as a 60 dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (L_{eq}), which corresponds to a steady-state A weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The L_{eq} is the foundation of the composite noise descriptor, L_{dn}, and shows very good correlation with community response to noise.

The day/night average level (L_{dn}) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment. CNEL is similar to L_{dn}, but includes a +5 dB penalty for evening noise. Typically CNEL and L_{dn} values are within 0.5 dB of each other and are often considered to be synonymous. Table 1 lists several examples of the noise levels associated with common situations.

TABLE 1 : TYPICAL NOISE LEVELS

COMMON OUTDOOR ACTIVITIES	NOISE LEVEL (DBA)	COMMON INDOOR ACTIVITIES
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft)	--100--	
Gas Lawn Mower at 1 m (3 ft)	--90--	
Diesel Truck at 15 m (50 ft), at 80 km/hr (50 mph)	--80--	Food Blender at 1 m (3 ft) Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft)	--70--	Vacuum Cleaner at 3 m (10 ft)
Commercial Area Heavy Traffic at 90 m (300 ft)	--60--	Normal Speech at 1 m (3 ft)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing

SOURCE: CALTRANS, TECHNICAL NOISE SUPPLEMENT, TRAFFIC NOISE ANALYSIS PROTOCOL. SEPTEMBER 2013.

EFFECTS OF NOISE ON PEOPLE

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction;
- Interference with activities such as speech, sleep, and learning; and
- Physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10 dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6 dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

EXISTING NOISE LEVELS

Traffic Noise Levels

The FHWA Highway Traffic Noise Prediction Model (FHWA-RD 77-108) was used to develop L_{dn} (24-hour average) noise contours for the primary project-area roadways. The model is based upon the CALVENO noise emission factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA Model predicts hourly L_{eq} values for free-flowing traffic conditions, and is generally considered to be accurate within 1.5 dB. To predict L_{dn} values, it is necessary to determine the hourly distribution of traffic for a typical 24-hour period.

Existing traffic volumes were obtained from the traffic consultant (Kimley Horn, February 8, 2017). Day/night traffic distributions were based upon file data for similar roadways and field-measured values where available. Using these data sources and the FHWA traffic noise prediction methodology, traffic noise levels were calculated for existing conditions. Table 2 shows the results of this analysis. Appendix A provides the complete inputs and results for the FHWA traffic noise modeling.

Traffic noise levels are predicted at the sensitive receptors located at the closest typical setback distance along each project-area roadway segments. In some locations sensitive receptors may be located at distances which vary from the assumed calculation distance and may experience shielding from intervening barriers or sound walls. However, the traffic noise analysis is believed to be representative of the majority of sensitive receptors located closest to the project-area roadway segments analyzed in this report. Where sound walls occur, a -5 dB offset was applied to account for typical acoustic shielding provided by a 6-foot tall sound wall.

The actual distances to noise level contours may vary from the distances predicted by the FHWA model due to roadway curvature, grade, shielding from local topography or structures, elevated roadways, or elevated receivers. The distances reported in Table 2 are generally considered to be conservative estimates of noise exposure along the project-area roadways.

TABLE 2: PREDICTED EXISTING TRAFFIC NOISE LEVELS

ROADWAY	SEGMENT	NOISE LEVEL AT CLOSEST RECEPTORS (LDN/CNEL)	DISTANCES TO TRAFFIC NOISE CONTOURS, LDN/CNEL (FEET)		
			70 DB	65 DB	60 DB
Grant Line Rd.	East of Coral Hollow	60.3	18	39	83
Corral Hollow Rd.	North of Grant Line	62.2	23	48	104
Corral Hollow Rd.	South of Grant	60.9	20	43	92

NOTES: DISTANCES TO TRAFFIC NOISE CONTOURS ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS.
SOURCE: FHWA-RD-77-108 WITH INPUTS FROM KIMLEY HORN AND J.C. BRENNAN & ASSOCIATES, INC. 2017.

COMMUNITY NOISE SURVEY

A community noise survey was conducted to document existing ambient noise levels at the project site. The data collected included the hourly average (L_{eq}), median (L_{50}), and the maximum level (L_{max}) during the measurement period. Noise monitoring sites and the measured noise levels at each site are summarized in Table 3. Figure 2 shows the locations of the noise monitoring sites. Appendix B shows the complete results of the 24-hour noise measurement at Site A.

Community noise monitoring equipment included Larson Davis Laboratories (LDL) Model 820 and 824 precision integrating sound level meters equipped with LDL ½" microphones. The measurement systems were calibrated using a LDL Model CAL200 acoustical calibrator before and after testing. The measurement equipment meets all pertinent requirements of the American National Standards Institute (ANSI) for Type 1 (precision) sound level meters.

TABLE 3: SUMMARY OF EXISTING BACKGROUND NOISE MEASUREMENT DATA

SITE	LOCATION	CNEL/L_{DN}	AVERAGE MEASURED HOURLY NOISE LEVELS, DB					
			DAYTIME (7AM-10PM)			NIGHTTIME (10PM-7AM)		
			L_{EQ}	L_{50}	L_{MAX}	L_{EQ}	L_{50}	L_{MAX}
Continuous (24-hour) Noise Level Measurements								
A	Northwest border of site.	67	62	62	69	61	60	69
Short-Term Noise Level Measurements								
1	Corral Hollow Rd. NE. of project site, W. of Corral Hollow Rd.	NA	60	58	77	1/31/17, 12:21 pm. – Primary noise source is roadway traffic from Corral Hollow Rd.		
2	Corral Hollow Rd. SE. of project site, E. of Corral Hollow Rd.	NA	70	68	87	1/31/17, 12:41 pm – Primary noise source is roadway traffic from Grant Line Rd. and Corral Hollow Rd.		

NOTE: SOURCE: J.C. BRENNAN & ASSOCIATES, INC., 2017.

REGULATORY FRAMEWORK

STATE

Governor's Office of Planning and Research (OPR)

The *State of California General Plan Guidelines* (State of California 1998), published by OPR provides guidance for the acceptability of projects within specific CNEL contours. The guidelines also present adjustment factors that may be used in order to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution.

LOCAL

City of Tracy General Plan Noise Element

The City General Plan includes the following goals, objectives, policies and actions regarding noise that are applicable to the proposed Project:

Goal N-1	A Citizenry protected from excessive noise.
Objective N-1.1	Ensure appropriate exterior and interior noise levels for new land uses.
Policy P1	Noise sensitive land uses shall not be located in areas with noise levels that exceed those considered normally acceptable for each land use unless measures can be implemented to reduce noise to acceptable levels.
Policy P2	Land uses shall require appropriate interior noise environments when located in areas adjacent to major noise generators.
Policy P8	Measures to attenuate exterior and/or interior noise levels to acceptable levels shall be incorporated into all development projects. Acceptable, conditionally acceptable and unacceptable noise levels are presented in Figure 9-3 [Figure 3 of this report].
Objective N-1.2	Control sources of excessive noise.
Policy P1	The City's Noise Ordinance, as revised from time to time, shall prohibit the generation of excessive noise.
Policy P2	Mitigation measures shall be required for new development projects that exceed the following criteria: • Cause the L_{dn} at noise-sensitive uses to increase by 3 dB or more and exceed the "normally acceptable" level.

- Cause the L_{dn} at noise-sensitive uses to increase 5 dB or more and remain "normally acceptable."
- Cause new noise levels to exceed the city of Tracy Noise Ordinance limits.

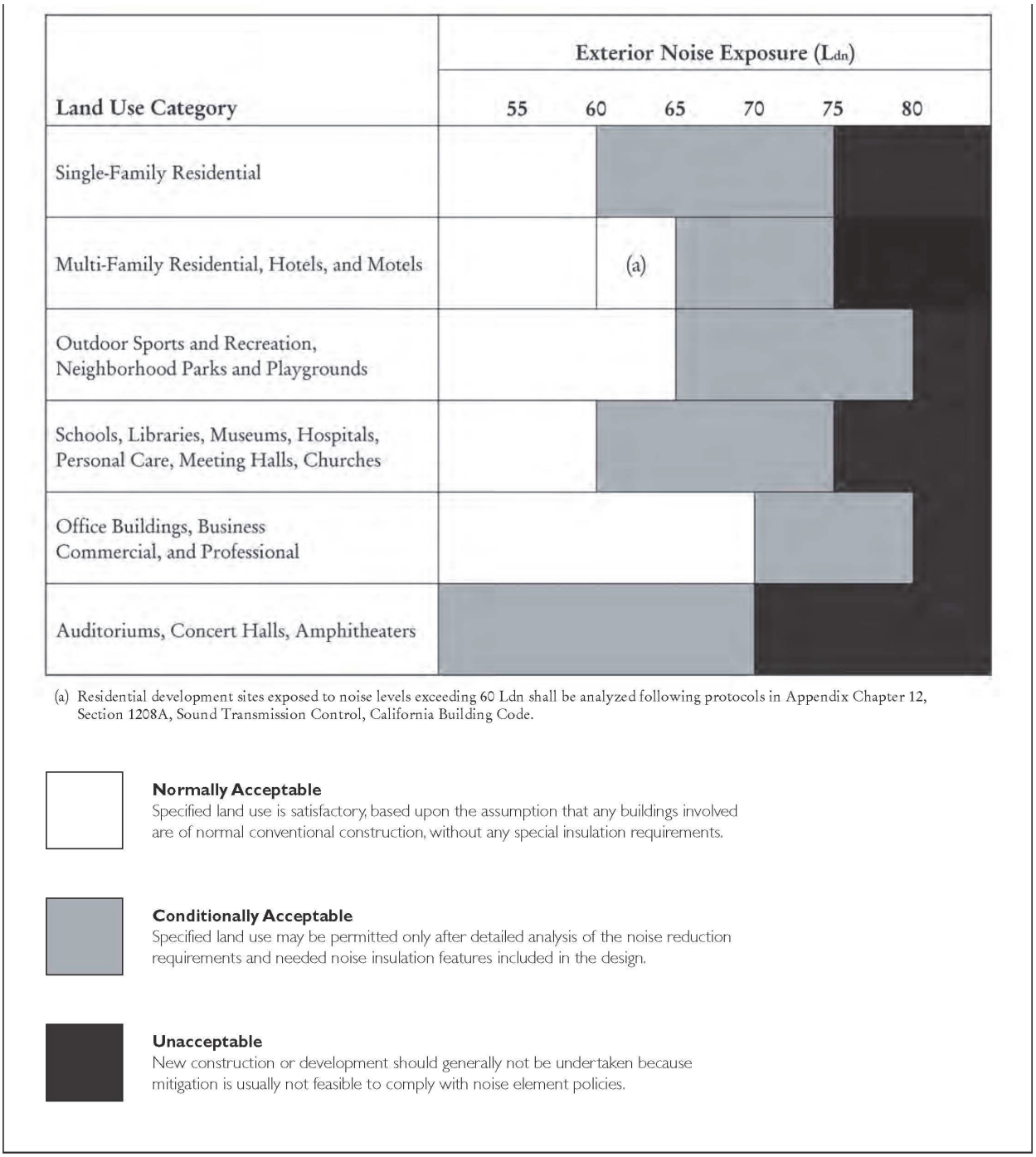

FIGURE 3 – CITY OF TRACY COMMUNITY NOISE EXPOSURE GUIDELINES

Policy P3	Pavement surfaces that reduce noise from roadways should be considered as paving or re-pavement opportunities arise.
Policy P4	All construction in the vicinity of noise sensitive land uses, such as residences, hospitals, or convalescent homes, shall be limited to daylight hours or 7:00 AM to 7:00 PM. In addition, the following construction noise control measures shall be include as requirements at construction sites to minimize construction noise impacts: • Equip all internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment. • Locate stationary noise-generating equipment as far as possible from sensitive receptors when sensitive receptors adjoin or are near a construction area. • Utilize "quiet" air compressors and other stationary noise sources where technology exists.
Action A1	Enforce Section 27007 of the California Motor Vehicle Code that prohibits amplified sound that can be heard 50 or more feet from a vehicle.
Action A2	Enforce Section 27150 of the California Motor Vehicle Code that addresses excessive exhaust noise.
Objective N-1.3	Consider noise issues in the Development Review process.
Policy P1	Development projects shall be evaluated for potential noise impacts and conflicts as part of the Development Review process.
Policy P2	Significant noise impacts shall be mitigated as a condition of project approval.
Policy P3	New development projects shall have an acoustical specialist prepare a noise analysis with recommendations for design mitigation if a noise-producing project is proposed near existing or planned noise-sensitive uses.
Policy P4	Proposed noise sensitive projects within noise-impacted areas shall submit acoustical studies and provide necessary mitigation from noise.
Policy P5	Site design techniques shall be considered as the primary means to minimize noise impacts as long as they do not conflict with the goals of the Community Character Element. Techniques include: • Designing landscaped building setbacks to serve as a buffer between the noise source and receptor.

- Placing noise-tolerant land uses, such as parking lots, maintenance facilities, and utility areas between the noise source, such as highways and railroad tracks, and receptor.
- Orienting buildings to shield noise sensitive outdoor spaces from a noise source.
- Locating bedrooms or balconies on the sides of buildings facing away from noise sources.
- Utilizing noise barriers (e.g., fences, walls, or landscaped berms) to reduce adverse noise levels in noise-sensitive outdoor activity areas.

Policy P6 The City shall seek to reduce impacts from groundbome vibration associated with rail operations by requiring that vibration-sensitive buildings (e.g., residences) are sited at least 100 feet from the centerline of the railroad tracks whenever feasible. The development of vibration-sensitive buildings within 100 feet from the centerline of the railroad tracks would require a study demonstrating that ground borne vibration issues associated with rail operations have been adequately addressed (i.e., through building siting or construction techniques).

City of Tracy Municipal Code

In addition to the standards set forth within the City General Plan, Title 4.12, Article 9, *Noise Control Ordinance,* of the City's Municipal Code provides the following General Sound Level Limits:

- Residential Districts have a noise limit of 55 dBA - (one hour average, L_{eq})
- Commercial Districts have a noise limit of 65 dBA - (one hour average, L_{eq})
- Industrial Districts have a noise limit of 75 dBA - (one hour average, L_{eq})
- Agricultural Districts have a noise limit of 75 dBA - (one hour average, L_{eq})
- Aggregate Mineral Overlay Zone have a noise limit of 75 dBA - (one hour average, L_{eq})

When property lines form the joint boundary of two district zones, the ordinance states that the sound level limit shall be the arithmetic mean of the limit applicable to each of the two zones.

The City's Municipal Code, Title 4.12, Article 9, *Noise Control Ordinance,* provides the following construction and operational noise standards:

Construction Noise Prohibition

The operation of pile drivers, hammers, etc. between the hours of 10:00 PM. and 7:00 AM of any pneumatic or air hammer, pile driver, steam shovel, derrick, steam, or electric hoist, parking lot cleaning equipment or other appliance, the use of which is attended by loud or unusual noise.

Business and Residential Relationships

1. Delivery vehicles shall have their engines turned off when stationary during regular business hours (6:00 AM to 11:00 PM).
2. It is unlawful for stores to be loading, unloading, opening or other handling of boxes, crates, containers, building materials, garbage cans, other similar objects and trash compactor operations between the hours of 10:00 PM and 7:00 AM in an area between a business and residential in such a manner to cause a noise disturbance across a residential property line or at any time to violate the general sound level limits.
3. Store deliveries by motorized refrigeration systems shall not be left running between the hours of 10:00 PM and 7:00 AM within seventy-five feet of a residential zone, residential use, or sleeping quarters.

Note that the noise ordinance requirements cannot be applied to mobile noise sources, such as heavy trucks, when traveling on public roadways. Federal and state laws preempt control of mobile noise sources on public roads and airports.

IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the project will have a significant impact related to noise if it will result in:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without project;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels within two miles of a public airport or public use airport; or
- For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

Noise Standards

The noise standards applicable to the project include the relevant portions of the City of Tracy General Plan as described in the Regulatory Framework section above, and the following standards.

Vibration Standards

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

The City of Tracy does not have specific policies pertaining to vibration levels. However, vibration levels associated with construction activities are addressed as potential noise impacts associated with project implementation.

Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 4 indicates that the threshold for damage to structures ranges from 0.2 to 0.6 peak particle velocity in inches per second (in/sec p.p.v). The general threshold at which human annoyance could occur is notes as 0.1 in/sec p.p.v.

TABLE 4: EFFECTS OF VIBRATION ON PEOPLE AND BUILDINGS

PEAK PARTICLE VELOCITY MM/SECOND	PEAK PARTICLE VELOCITY IN/SECOND	HUMAN REACTION	EFFECT ON BUILDINGS
0.15-0.30	0.006-0.019	Threshold of perception; possibility of intrusion	Vibrations unlikely to cause damage of any type
2.0	0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
2.5	0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of "architectural" damage to normal buildings
5.0	0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations)	Threshold at which there is a risk of "architectural" damage to normal dwelling - houses with plastered walls and ceilings Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize "architectural" damage
10-15	0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage.

SOURCE: CALTRANS. TRANSPORTATION RELATED EARTHBORNE VIBRATIONS. TAV-02-01-R9601 FEBRUARY 20, 2002.

IMPACT 1: EXPOSURE OF PERSONS TO, OR GENERATION OF NOISE LEVELS IN EXCESS OF APPLICABLE STANDARDS OR A SUBSTANTIAL PERMANENT INCREASE IN AMBIENT NOISE LEVELS IN THE PROJECT VICINITY ABOVE LEVELS EXISTING WITHOUT THE PROJECT - TRAFFIC NOISE AT EXISTING RECEPTORS (LESS THAN SIGNIFICANT)

To describe future noise levels due to traffic, the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. Inputs to the model included traffic volumes from the traffic study prepared by Kimley Horn (February 8, 2017. The FHWA model is based upon the Calveno reference noise factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly L_{eq} values for free-flowing traffic conditions. To predict L_{dn} values, it is necessary to determine the day/night distribution of traffic and adjust the traffic volume input data to yield an equivalent hourly traffic volume.

Table 5 shows the noise levels associated with traffic on the local roadway network under the existing and existing plus project traffic conditions. Table 6 shows the noise levels under existing plus background and existing plus background plus project conditions. As indicated by Table 5 and Table 6, the related noise level increases under development of the proposed project are predicted to be no more than 0.2 dB. As described earlier, a 3-dBA change is considered to be a just-perceivable difference. Therefore, this would be a less than significant impact.

TABLE 5: EXISTING VS. EXISTING PLUS PROJECT

ROADWAY	SEGMENT	NOISE LEVELS (CNEL/LDN, DB)			DISTANCE TO PLUS PROJECT TRAFFIC NOISE CONTOURS, FEET[1]		
		NO PROJECT	PLUS PROJECT	CHANGE (DB)	70 DB LDN	65 DB LDN	60 DB LDN
Weekday							
Grant Line Rd.	East of Coral Hollow	60.3	60.3	0.0	18	39	84
Corral Hollow Rd.	North of Grant Line	62.2	62.3	0.1	23	49	106
Corral Hollow Rd.	South of Grant	60.9	60.9	0.0	20	43	92
Saturday							
Grant Line Rd.	East of Coral Hollow	60.2	60.3	0.1	18	39	83
Corral Hollow Rd.	North of Grant Line	62.1	62.3	0.2	23	49	107
Corral Hollow Rd.	South of Grant	61.4	61.4	0.0	22	46	100

TABLE 6: EXISTING PLUS BACKGROUND VS. EXISTING PLUS BACKGROUND PLUS PROJECT

ROADWAY	SEGMENT	NOISE LEVELS (CNEL/LDN, DB)			DISTANCE TO PLUS PROJECT TRAFFIC NOISE CONTOURS, FEET		
		NO PROJECT	PLUS PROJECT	CHANGE (DB)	70 DB LDN	65 DB LDN	60 DB LDN
Weekday							
Grant Line Rd.	East of Coral Hollow	60.8	60.9	0.1	20	42	91
Corral Hollow Rd.	North of Grant Line	62.3	62.4	0.1	23	50	108
Corral Hollow Rd.	South of Grant	61.5	61.5	0.0	22	47	100
Saturday							
Grant Line Rd.	East of Coral Hollow	60.8	60.9	0.1	20	42	91
Corral Hollow Rd.	North of Grant Line	62.3	62.4	0.1	23	50	108
Corral Hollow Rd.	South of Grant	62.0	62.0	0.0	23	50	109

[1] Distances to traffic noise contours are measured in feet from the centerlines of the roadways. Actual distances may vary due to shielding from existing noise barriers or intervening structures. Traffic noise levels may vary depending on actual setback distances and localized shielding.
SOURCE: FHWA-RD-77-108 WITH INPUTS FROM FEHR & PEERS AND J.C. BRENNAN & ASSOCIATES, INC. 2017.

IMPACT 2: POTENTIAL TO EXPOSE PERSONS TO, OR GENERATE NOISE LEVELS IN EXCESS OF APPLICABLE STANDARDS OR TO RESULT IN A SUBSTANTIAL TEMPORARY OR PERIODIC INCREASE IN AMBIENT NOISE LEVELS IN THE PROJECT VICINITY ABOVE LEVELS EXISTING WITHOUT PROJECT - CONSTRUCTION NOISE (LESS THAN SIGNIFICANT)

The new development, installation of utilities, and infrastructure improvements associated with the project will require construction activities. These activities include the use of heavy equipment and impact tools. Table 7 provides a list of the types of equipment which may be associated with construction activities and the associated noise levels.

TABLE 7: CONSTRUCTION EQUIPMENT NOISE

TYPE OF EQUIPMENT	PREDICTED NOISE LEVELS, LMAX DB				DISTANCES TO NOISE CONTOURS (FEET)	
	NOISE LEVEL AT 50'	NOISE LEVEL AT 100'	NOISE LEVEL AT 200'	NOISE LEVEL AT 400'	70 DB LMAX CONTOUR	65 DB LMAX CONTOUR
Backhoe	78	72	66	60	126	223
Compactor	83	77	71	65	223	397
Compressor (air)	78	72	66	60	126	223
Concrete Saw	90	84	78	72	500	889
Dozer	82	76	70	64	199	354
Dump Truck	76	70	64	58	100	177
Excavator	81	75	69	63	177	315
Generator	81	75	69	63	177	315
Jackhammer	89	83	77	71	446	792
Pneumatic Tools	85	79	73	67	281	500

SOURCE: ROADWAY CONSTRUCTION NOISE MODEL USER'S GUIDE. FEDERAL HIGHWAY ADMINISTRATION. FHWA-HEP-05-054. JANUARY 2006. J.C. BRENNAN & ASSOCIATES, INC. 2013.

Activities involved in project construction would typically generate maximum noise levels ranging from 85 to 90 dB at a distance of 50 feet. The nearest residential receptors would be located approximately 200 feet, or more, from the majority of project construction activities. At this distance, maximum noise levels would be in the range of 64-78 dB L_{max}, as shown in Table 7. Existing ambient noise levels measured adjacent to the nearest sensitive receptors were found to be in the range of 77-87 dBA L_{max}, as shown in Table 3. Therefore, construction noise levels are predicted to be within the range of existing ambient noise levels and this would be a less than significant impact.

Impact 3: Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels (Potentially Significant)

The primary vibration-generating activities associated with the proposed project would occur during construction when activities such as grading, utilities placement, and roadway construction occur. Sensitive receptors which could be impacted by construction related vibrations, especially vibratory compactors/rollers, are located approximately 200 feet or further from the project site. At this distance construction vibrations are not predicted to exceed acceptable levels. Additionally, construction activities would be temporary in nature and would likely occur during normal daytime working hours.

Construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural. Table 8 shows the typical vibration levels produced by construction equipment.

Table 8: Vibration Levels for Varying Construction Equipment

Type of Equipment	*Peak Particle Velocity @ 25 feet (inches/second)*	*Peak Particle Velocity @ 50 feet (inches/second)*	*Peak Particle Velocity @ 100 feet (inches/second)*
Large Bulldozer	0.089	0.031	0.011
Loaded Trucks	0.076	0.027	0.010
Small Bulldozer	0.003	0.001	0.000
Auger/drill Rigs	0.089	0.031	0.011
Jackhammer	0.035	0.012	0.004
Vibratory Hammer	0.070	0.025	0.009
Vibratory Compactor/roller	0.210 (<0.200 @ 26')	0.074	0.026

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment Guidelines, May 2006

The Table 8 data indicate that construction vibration levels anticipated for the project are less than the 0.2 in/sec p.p.v. threshold of damage to buildings and less than the 0.1 in/sec threshold of annoyance criteria at distances over 25 feet. Therefore, construction vibrations are not predicted to cause damage to existing buildings or cause annoyance to sensitive receptors. Therefore, this impact would be considered **less than significant.**

IMPACT 4: EXPOSURE OF PERSONS TO, OR GENERATION OF NOISE LEVELS IN EXCESS OF STANDARDS ESTABLISHED IN THE LOCAL GENERAL PLAN OR NOISE ORDINANCE – TRAFFIC NOISE AT NEW RECEPTORS (LESS THAN SIGNIFICANT)

The FHWA traffic noise prediction model was used to predict Cumulative + Project traffic noise levels on the proposed project. Table 9 shows the results of this analysis.

Appendix C provides the complete inputs and results to the FHWA traffic noise prediction model for on-site receptors. It should be noted that the future traffic volume shown for Interstate 205 is based upon the Caltrans 2014 traffic count of 97,000 adjusted to represent an estimated 2040 traffic volume by adding 1% per year increase in traffic.

TABLE 9: CUMULATIVE + PROJECT TRANSPORTATION NOISE LEVELS AT PROPOSED PROJECT

ROADWAY	*RECEPTOR DESCRIPTION*	*APPROXIMATE RESIDENTIAL SETBACK, FEET*[1]	*ADT*	*PREDICTED TRAFFIC NOISE LEVELS, CNEL/LDN*				
				NO WALL	*6' WALL*	*7' WALL*	*8' WALL*	*9' WALL*
Interstate 205	Swimming Pool Area	980	125,640	67 dB	62	61	60	58
Interstate 205	Building Facade	950	125,640	70 dB	N/A	N/A	N/A	N/A
Grant Line Road	Building Facade	150	36,320	66 dB	N/A	N/A	N/A	N/A
Corral Hollow	Building Facade	145	25,900	66 dB	N/A	N/A	N/A	N/A

[1] *SETBACK DISTANCES ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS TO THE CENTER OF RESIDENTIAL BACKYARDS.*
-- MEETS THE CITY OF TRACY EXTERIOR NOISE STANDARD WITHOUT MITIGATION.
SOURCE: FHWA-RD-77-108 WITH INPUTS FROM KIMLEY HORN, CALTRANS, AND J.C. BRENNAN & ASSOCIATES, INC. 2017.

The Table 9 data indicate that a 6-foot tall sound wall would be required for the for the hotel pool area. This wall is predicted to reduce exterior noise levels to 65 dB L_{dn}, or less, which is the City's normally acceptable exterior noise level standard for hotel uses. Figure 4 shows the recommended wall location.

Interior Noise Impacts:

Modern construction typically provides a 25 dB exterior-to-interior noise level reduction with windows closed. Therefore, sensitive receptors exposed to exterior noise of 70 dB L_{dn}, or less, will typically comply with the City of Tracy 45 dB L_{dn} interior noise level standard. Additional noise reduction measures, such as acoustically rated windows are generally required for exterior noise levels exceeding 70 dB L_{dn}.

The proposed project is predicted to be exposed to a maximum exterior noise level of 70 dB L_{dn}. Based upon a 25 dB exterior-to-interior noise level reduction, interior noise levels are predicted to be 45 dB L_{dn}. This interior noise levels would meet the City of Tracy 45 dB L_{dn} interior noise level standard and no interior noise mitigation would be required.

The following mitigation measures will minimize noise impacts resulting from transportation noise impacts on the proposed project site. Implementation of this mitigation measure would ensure consistency with the City's noise standards and would reduce this potentially significant impact to a **less than significant** level.

MITIGATION MEASURES

Mitigation Measure 4-1: *A 6-foot tall sound wall shall be constructed along the northern edge of the outdoor swimming pool area.*

IMPACT 5: POTENTIAL TO EXPOSE OF PERSONS TO, OR GENERATE NOISE LEVELS IN EXCESS OF STANDARDS ESTABLISHED IN THE LOCAL GENERAL PLAN OR NOISE ORDINANCE, OR APPLICABLE STANDARDS OF OTHER AGENCIES OR TO RESULT IN A SUBSTANTIAL PERMANENT INCREASE IN AMBIENT NOISE LEVELS IN THE PROJECT VICINITY ABOVE LEVELS EXISTING WITHOUT THE PROJECT (LESS THAN CUMULATIVELY CONSIDERABLE)

The cumulative context for noise impacts associated with the Proposed Project consists of the existing and future noise sources that could affect the project or surrounding uses. Noise generated by construction would be temporary, and would not add to the permanent noise environment or be considered as part of the cumulative context. The total noise impact of the Proposed Project would be fairly small and would not be a substantial increase to the existing future noise environment.

TRAFFIC

Cumulative noise impacts would occur primarily as a result of increased traffic on local roadways due to the proposed project and other projects within the area. Tables 10 show cumulative traffic noise levels with and without the proposed project.

Under cumulative conditions, there would not be significant increases in noise levels compared to the no project conditions. However, the 60, 65 and 70 dB L_{dn} contours would extend farther under cumulative conditions and potentially impact additional sensitive receptors. As shown, the proposed project would contribute no more than 0.2 dB L_{dn} to noise levels on roadways fronting residential uses along the study area roadways. As described earlier, a 3-dBA change is considered to be a just-perceivable difference. Additionally, the project would not cause new exceedances of the City of Tracy 60 dB CNEL exterior noise level standard. Consequently, this would result in a **less than cumulatively considerable** contribution to cumulative noise levels.

TABLE 10: CUMULATIVE VS. CUMULATIVE PLUS PROJECT

ROADWAY	SEGMENT	NOISE LEVELS (CNEL/LDN, DB)			DISTANCE TO PLUS PROJECT TRAFFIC NOISE CONTOURS, FEET[1]		
		NO PROJECT	PLUS PROJECT	CHANGE (DB)	70 DB LDN	65 DB LDN	60 DB LDN
Weekday							
Grant Line Rd.	East of Coral Hollow	62.1	62.1	0.0	24	51	111
Corral Hollow Rd.	North of Grant Line	65.7	65.7	0.0	39	84	180
Corral Hollow Rd.	South of Grant	62.9	62.9	0.0	27	58	125
Saturday							
Grant Line Rd.	East of Coral Hollow	62.2	62.2	0.0	24	52	112
Corral Hollow Rd.	North of Grant Line	65.8	65.8	0.0	39	85	183
Corral Hollow Rd.	South of Grant	63.3	63.4	0.1	29	62	134

[1] Distances to traffic noise contours are measured in feet from the centerlines of the roadways. Actual distances may vary due to shielding from existing noise barriers or intervening structures. Traffic noise levels may vary depending on actual setback distances and localized shielding.
SOURCE: FHWA-RD-77-108 WITH INPUTS FROM KIMLEY HORN AND J.C. BRENNAN & ASSOCIATES, INC. 2017.

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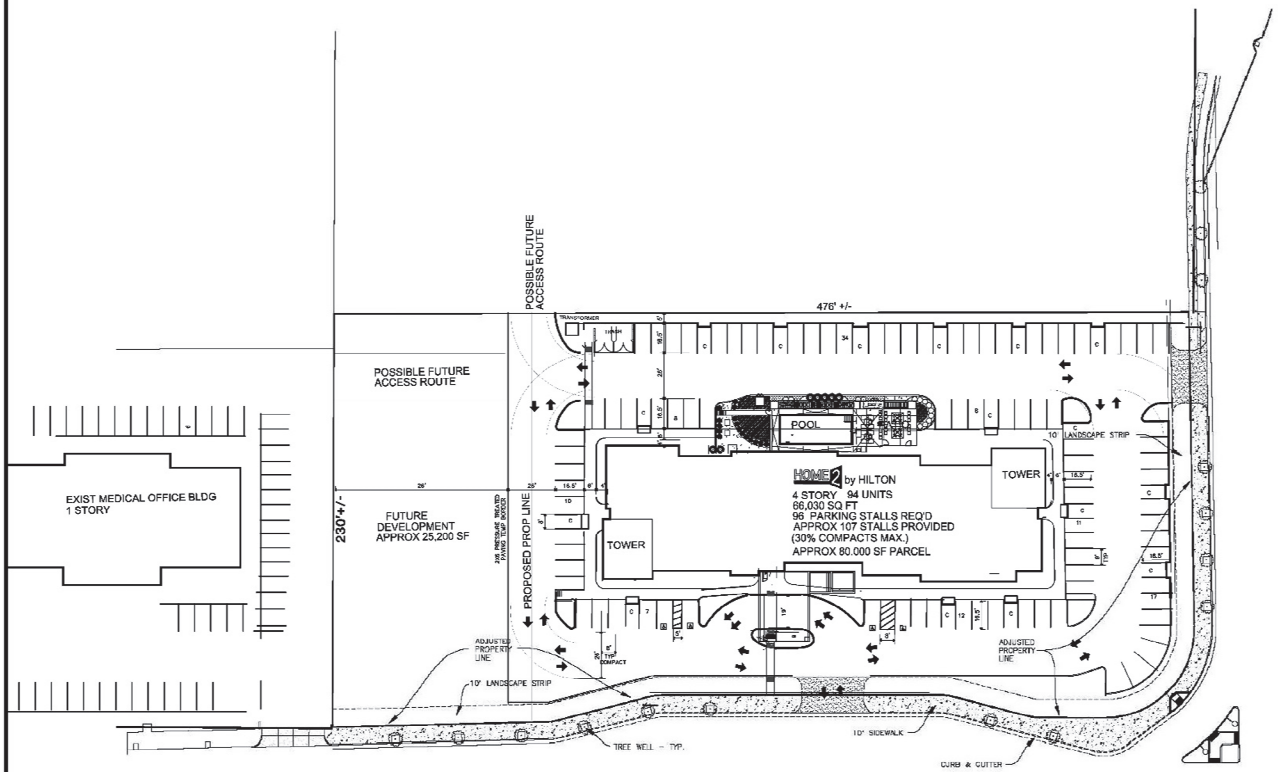

AREA=58,680 SF

N

WEST GRANT LINE ROAD

SITE PLAN

SCALE: 1"=30'

0 15 30 60 100 FEET

VICINITY MAP

SCALE: NONE

SITE DATA

HOTEL:

TYPE VA CONSTRUCTION WITH FIRE SPRINKLERS

BUILDING AREA:	1ST FLR:	16,440	SQ. FT.
	2ND FLR:	16,530	SQ. FT.
	3RD FLR:	16,530	SQ. FT.
	4TH FLR:	16,530	SQ. FT.
	TOTAL:	66,030	SQ. FT.
PORTE-COCHERE		1,050	SQ. FT.
	TOTAL:	67,080	SQ. FT.

PARKING REQ'D. 94 STALLS (1/GUESTROOM + 2MGR)
REQUIRED 94 + 2=96 STALLS

PARKING
75 STANDARD STALLS 9'X18.5' w/2' OVERHANG
4 ADA PARKING STALLS 9X18.5 w/2' OVERHANG
28 COMPACT PARKING STALLS 8X17 w/2' OVERHANG
107 ACTUAL SUPPLIED

SITE STATISTICS

LOT AREA (PROPOSED) 80,000 SQ. FT.
(1.89 ACRES)

PAVED AREA:	36,800	46%
LANDSCAPE & WALK AREA:	22,210	28%
BUILDING COVERAGE:	17,490	22%
POOL ENCLOSURE AREA:	3,500	4%
TOTAL:	80,000	

REVISIONS

1 REVISION __/__/2017

SITE PLAN

SD1

SHEET ____
OF ____

LEE GAGE & ASSOCIATES, INC.
architecture • engineering • planning

PROPOSED:
TRACY HOME2 HOTEL
W GRANT LINE ROAD & N CORRAL HOLLOW ROAD
TRACY, CALIFORNIA

LICENSED ARCHITECT LEE GAGE C-5716 REN. 8-31-18 STATE OF CALIFORNIA

Home2 Suites by Hilton
Figure 1: Site Plan

j.c. brennan & associates
consultants in acoustics

Rev. 02/21/17

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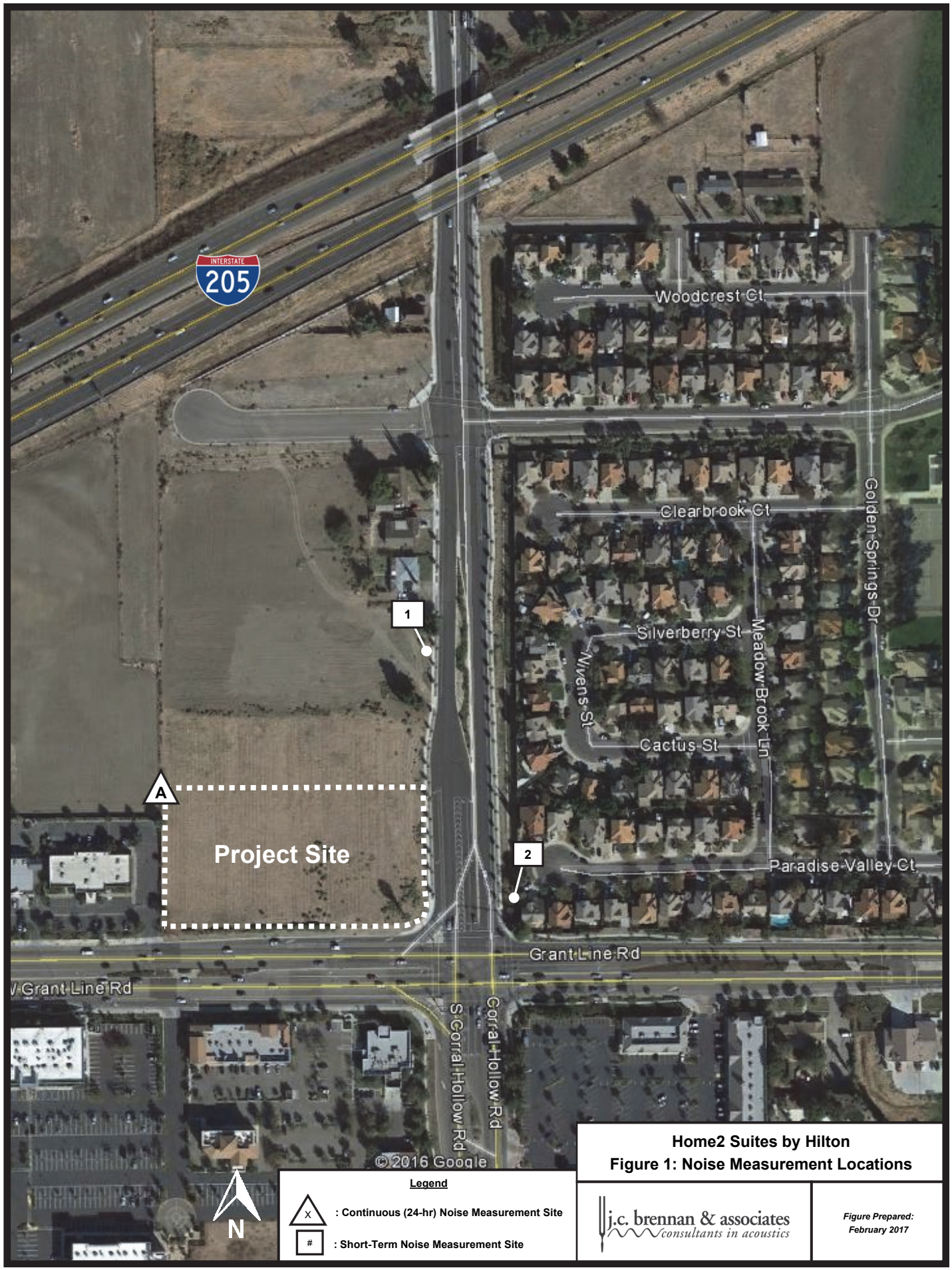

Home2 Suites by Hilton
Figure 1: Noise Measurement Locations

j.c. brennan & associates
consultants in acoustics

Figure Prepared:
February 2017

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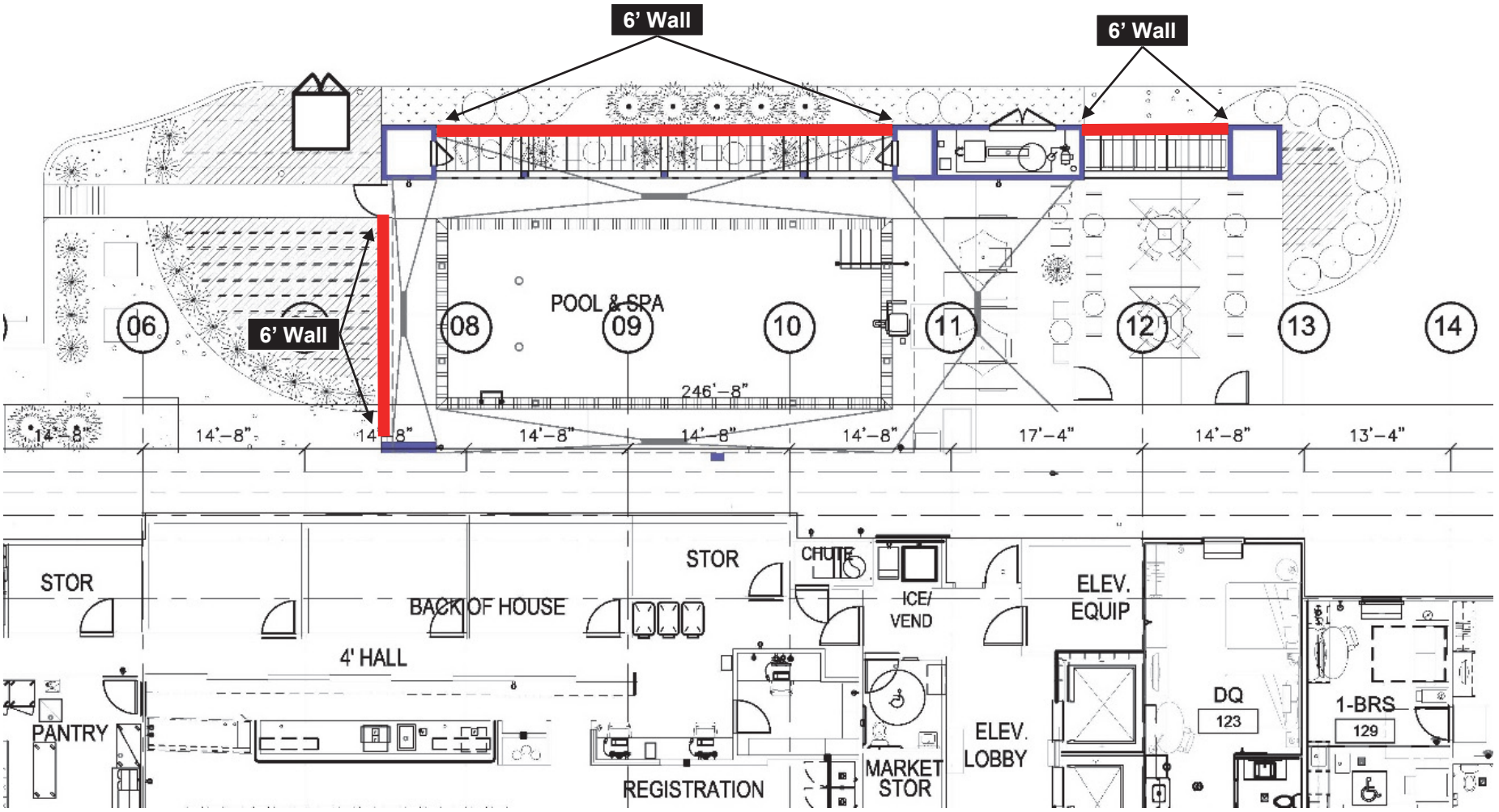

Home2 Suites by Hilton

Figure 4: Recommended Noise Barrier Location

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Rev. 02/22/17

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Appendix A
FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2016-222 Home2 Suites
Description: Existing Traffic Conditions
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	(dB)
	Existing Weekday										
1	Grant Line Road	East of Corral Hollow	18,270	83		17	1.0	0.5	40	80	-5
2	Corral Hollow Road	North of Grant Line	11,450	83		17	1.0	0.5	35	75	0
3	Corral Hollow Road	South of Grant Line	21,220	83		17	1.0	0.5	40	80	-5
	Existing Weekday + Project										
1	Grant Line Road	East of Corral Hollow	18,450	83		17	1.0	0.5	40	80	-5
2	Corral Hollow Road	North of Grant Line	11,770	83		17	1.0	0.5	35	75	0
3	Corral Hollow Road	South of Grant Line	21,390	83		17	1.0	0.5	40	80	-5
	Existing Saturday										
1	Grant Line Road	East of Corral Hollow	18,130	83		17	1.0	0.5	40	80	-5
2	Corral Hollow Road	North of Grant Line	11,410	83		17	1.0	0.5	35	75	0
3	Corral Hollow Road	South of Grant Line	23,850	83		17	1.0	0.5	40	80	-5
	Existing Saturday + Project										
1	Grant Line Road	East of Corral Hollow	18,340	83		17	1.0	0.5	40	80	-5
2	Corral Hollow Road	North of Grant Line	11,800	83		17	1.0	0.5	35	75	0
3	Corral Hollow Road	South of Grant Line	24,050	83		17	1.0	0.5	40	80	-5
	Existing Weekday Plus Background										
1	Grant Line Road	East of Corral Hollow	20,890	83		17	1.0	0.5	40	80	-5
2	Corral Hollow Road	North of Grant Line	11,710	83		17	1.0	0.5	35	75	0
3	Corral Hollow Road	South of Grant Line	24,240	83		17	1.0	0.5	40	80	-5
	Existing Weekday Plus Background + Project										
1	Grant Line Road	East of Corral Hollow	21,040	83		17	1.0	0.5	40	80	-5
2	Corral Hollow Road	North of Grant Line	11,990	83		17	1.0	0.5	35	75	0
3	Corral Hollow Road	South of Grant Line	24,380	83		17	1.0	0.5	40	80	-5
	Existing Saturday Plus Background										
1	Grant Line Road	East of Corral Hollow	20,880	83		17	1.0	0.5	40	80	-5
2	Corral Hollow Road	North of Grant Line	11,700	83		17	1.0	0.5	35	75	0
3	Corral Hollow Road	South of Grant Line	27,130	83		17	1.0	0.5	40	80	-5
	Existing Saturday Plus Background + Project										
1	Grant Line Road	East of Corral Hollow	21,070	83		17	1.0	0.5	40	80	-5
2	Corral Hollow Road	North of Grant Line	12,040	83		17	1.0	0.5	35	75	0
3	Corral Hollow Road	South of Grant Line	27,310	83		17	1.0	0.5	40	80	-5

Appendix A

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

Predicted Levels

Project #: 2016-222 Home2 Suites
Description: Existing Traffic Conditions
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
	Existing Weekday					
1	Grant Line Road	East of Corral Hollow	59.5	48.5	50.3	60.3
2	Corral Hollow Road	North of Grant Line	61.2	50.9	53.1	62.2
3	Corral Hollow Road	South of Grant Line	60.1	49.1	50.9	60.9
	Existing Weekday + Project					
1	Grant Line Road	East of Corral Hollow	59.5	48.5	50.3	60.3
2	Corral Hollow Road	North of Grant Line	61.3	51.1	53.2	62.3
3	Corral Hollow Road	South of Grant Line	60.1	49.1	51.0	60.9
	Existing Saturday					
1	Grant Line Road	East of Corral Hollow	59.4	48.4	50.2	60.2
2	Corral Hollow Road	North of Grant Line	61.2	50.9	53.1	62.1
3	Corral Hollow Road	South of Grant Line	60.6	49.6	51.4	61.4
	Existing Saturday + Project					
1	Grant Line Road	East of Corral Hollow	59.5	48.5	50.3	60.3
2	Corral Hollow Road	North of Grant Line	61.3	51.1	53.3	62.3
3	Corral Hollow Road	South of Grant Line	60.7	49.6	51.5	61.4
	Existing Weekday Plus Background					
1	Grant Line Road	East of Corral Hollow	60.0	49.0	50.9	60.8
2	Corral Hollow Road	North of Grant Line	61.3	51.0	53.2	62.3
3	Corral Hollow Road	South of Grant Line	60.7	49.7	51.5	61.5
	Existing Weekday Plus Background + Proje					
1	Grant Line Road	East of Corral Hollow	60.1	49.1	50.9	60.9
2	Corral Hollow Road	North of Grant Line	61.4	51.1	53.3	62.4
3	Corral Hollow Road	South of Grant Line	60.7	49.7	51.5	61.5
	Existing Saturday Plus Background					
1	Grant Line Road	East of Corral Hollow	60.0	49.0	50.8	60.8
2	Corral Hollow Road	North of Grant Line	61.3	51.0	53.2	62.3
3	Corral Hollow Road	South of Grant Line	61.2	50.2	52.0	62.0
	Existing Saturday Plus Background + Proje					
1	Grant Line Road	East of Corral Hollow	60.1	49.1	50.9	60.9
2	Corral Hollow Road	North of Grant Line	61.4	51.2	53.3	62.4
3	Corral Hollow Road	South of Grant Line	61.2	50.2	52.0	62.0

Appendix A

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

Noise Contour Output

Project #: 2016-154 Oakwood Landing EIR
Description: Existing Traffic Conditions
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Distances to Traffic Noise Contours 75	70	65	60	55
	Existing Weekday						
1	Grant Line Road	East of Corral Hollow	8	18	39	83	179
2	Corral Hollow Road	North of Grant Line	10	23	48	104	225
3	Corral Hollow Road	South of Grant Line	9	20	43	92	198
	Existing Weekday + Project						
1	Grant Line Road	East of Corral Hollow	8	18	39	84	180
2	Corral Hollow Road	North of Grant Line	11	23	49	106	229
3	Corral Hollow Road	South of Grant Line	9	20	43	92	199
	Existing Saturday						
1	Grant Line Road	East of Corral Hollow	8	18	38	83	178
2	Corral Hollow Road	North of Grant Line	10	22	48	104	225
3	Corral Hollow Road	South of Grant Line	10	21	46	99	214
	Existing Saturday + Project						
1	Grant Line Road	East of Corral Hollow	8	18	39	83	180
2	Corral Hollow Road	North of Grant Line	11	23	49	107	230
3	Corral Hollow Road	South of Grant Line	10	22	46	100	215
	Existing Weekday Plus Background						
1	Grant Line Road	East of Corral Hollow	9	20	42	91	196
2	Corral Hollow Road	North of Grant Line	11	23	49	106	228
3	Corral Hollow Road	South of Grant Line	10	22	47	100	216
	Existing Weekday Plus Background + Proje						
1	Grant Line Road	East of Corral Hollow	9	20	42	91	197
2	Corral Hollow Road	North of Grant Line	11	23	50	108	232
3	Corral Hollow Road	South of Grant Line	10	22	47	101	217
	Existing Saturday Plus Background						
1	Grant Line Road	East of Corral Hollow	9	20	42	91	196
2	Corral Hollow Road	North of Grant Line	11	23	49	106	228
3	Corral Hollow Road	South of Grant Line	11	23	50	108	233
	Existing Saturday Plus Background + Proje						
1	Grant Line Road	East of Corral Hollow	9	20	42	91	197
2	Corral Hollow Road	North of Grant Line	11	23	50	108	233
3	Corral Hollow Road	South of Grant Line	11	23	50	109	234

Appendix A
FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2016-222 Home2 Suites
Description: Cumulative Traffic Conditions
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	(dB)
	Cumulative Weekday										
1	Grant Line Road	East of Corral Hollow	27,960	83		17	1.0	0.5	40	80	-5
2	Corral Hollow Road	North of Grant Line	25,620	83		17	1.0	0.5	35	75	0
3	Corral Hollow Road	South of Grant Line	33,560	83		17	1.0	0.5	40	80	-5
	Cumulative Weekday + Project										
1	Grant Line Road	East of Corral Hollow	28,110	83		17	1.0	0.5	40	80	-5
2	Corral Hollow Road	North of Grant Line	25,900	83		17	1.0	0.5	35	75	0
3	Corral Hollow Road	South of Grant Line	33,700	83		17	1.0	0.5	40	80	-5
	Cumulative Saturday										
1	Grant Line Road	East of Corral Hollow	28,400	83		17	1.0	0.5	40	80	-5
2	Corral Hollow Road	North of Grant Line	26,250	83		17	1.0	0.5	35	75	0
3	Corral Hollow Road	South of Grant Line	37,090	83		17	1.0	0.5	40	80	-5
	Cumulative Saturday + Project										
1	Grant Line Road	East of Corral Hollow	28,590	83		17	1.0	0.5	40	80	-5
2	Corral Hollow Road	North of Grant Line	26,590	83		17	1.0	0.5	35	75	0
3	Corral Hollow Road	South of Grant Line	37,270	83		17	1.0	0.5	40	80	-5

Appendix A

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

Predicted Levels

Project #: 2016-222 Home2 Suites
Description: Cumulative Traffic Conditions
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
	Cumulative Weekday					
1	Grant Line Road	East of Corral Hollow	61.3	50.3	52.1	62.1
2	Corral Hollow Road	North of Grant Line	64.7	54.4	56.6	65.7
3	Corral Hollow Road	South of Grant Line	62.1	51.1	52.9	62.9
	Cumulative Weekday + Project					
1	Grant Line Road	East of Corral Hollow	61.3	50.3	52.1	62.1
2	Corral Hollow Road	North of Grant Line	64.7	54.5	56.7	65.7
3	Corral Hollow Road	South of Grant Line	62.1	51.1	52.9	62.9
	Cumulative Saturday					
1	Grant Line Road	East of Corral Hollow	61.4	50.4	52.2	62.2
2	Corral Hollow Road	North of Grant Line	64.8	54.5	56.7	65.8
3	Corral Hollow Road	South of Grant Line	62.5	51.5	53.3	63.3
	Cumulative Saturday + Project					
1	Grant Line Road	East of Corral Hollow	61.4	50.4	52.2	62.2
2	Corral Hollow Road	North of Grant Line	64.8	54.6	56.8	65.8
3	Corral Hollow Road	South of Grant Line	62.6	51.6	53.4	63.4

Appendix A

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

Noise Contour Output

Project #: 2016-154 Oakwood Landing EIR
Description: Cumulative Traffic Conditions
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	-------- Distances to Traffic Noise Contours -------- 75	70	65	60	55
	Cumulative Weekday						
1	Grant Line Road	East of Corral Hollow	11	24	51	110	238
2	Corral Hollow Road	North of Grant Line	18	39	83	179	385
3	Corral Hollow Road	South of Grant Line	12	27	58	125	269
	Cumulative Weekday + Project						
1	Grant Line Road	East of Corral Hollow	11	24	51	111	239
2	Corral Hollow Road	North of Grant Line	18	39	84	180	388
3	Corral Hollow Road	South of Grant Line	13	27	58	125	270
	Cumulative Saturday						
1	Grant Line Road	East of Corral Hollow	11	24	52	112	241
2	Corral Hollow Road	North of Grant Line	18	39	84	182	391
3	Corral Hollow Road	South of Grant Line	13	29	62	133	287
	Cumulative Saturday + Project						
1	Grant Line Road	East of Corral Hollow	11	24	52	112	242
2	Corral Hollow Road	North of Grant Line	18	39	85	183	395
3	Corral Hollow Road	South of Grant Line	13	29	62	134	288

Appendix B
Home2 Suites by Hilton
24hr Continuous Noise Monitoring - Site A
January 31st - February 1st, 2017

Hour	Leq	Lmax	L50	L90
12:00:00	62	72	61	59
13:00:00	63	70	63	61
14:00:00	62	67	62	60
15:00:00	62	72	62	59
16:00:00	64	70	63	62
17:00:00	62	70	61	59
18:00:00	61	67	60	59
19:00:00	61	68	61	59
20:00:00	62	66	62	60
21:00:00	62	69	62	60
22:00:00	62	70	61	59
23:00:00	61	69	61	59
0:00:00	60	77	59	56
1:00:00	57	67	57	55
2:00:00	57	66	57	55
3:00:00	61	65	61	58
4:00:00	62	69	61	60
5:00:00	62	72	61	60
6:00:00	63	69	63	61
7:00:00	64	68	63	62
8:00:00	63	67	63	61
9:00:00	60	67	59	56
10:00:00	62	69	62	59
11:00:00	60	67	60	57

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	64	60	62	63	57	61
Lmax (Maximum)	72	66	69	77	65	69
L50 (Median)	63	59	62	63	57	60
L90 (Background)	62	56	60	61	55	58

Computed Ldn, dB	67
% Daytime Energy	69%
% Nighttime Energy	31%

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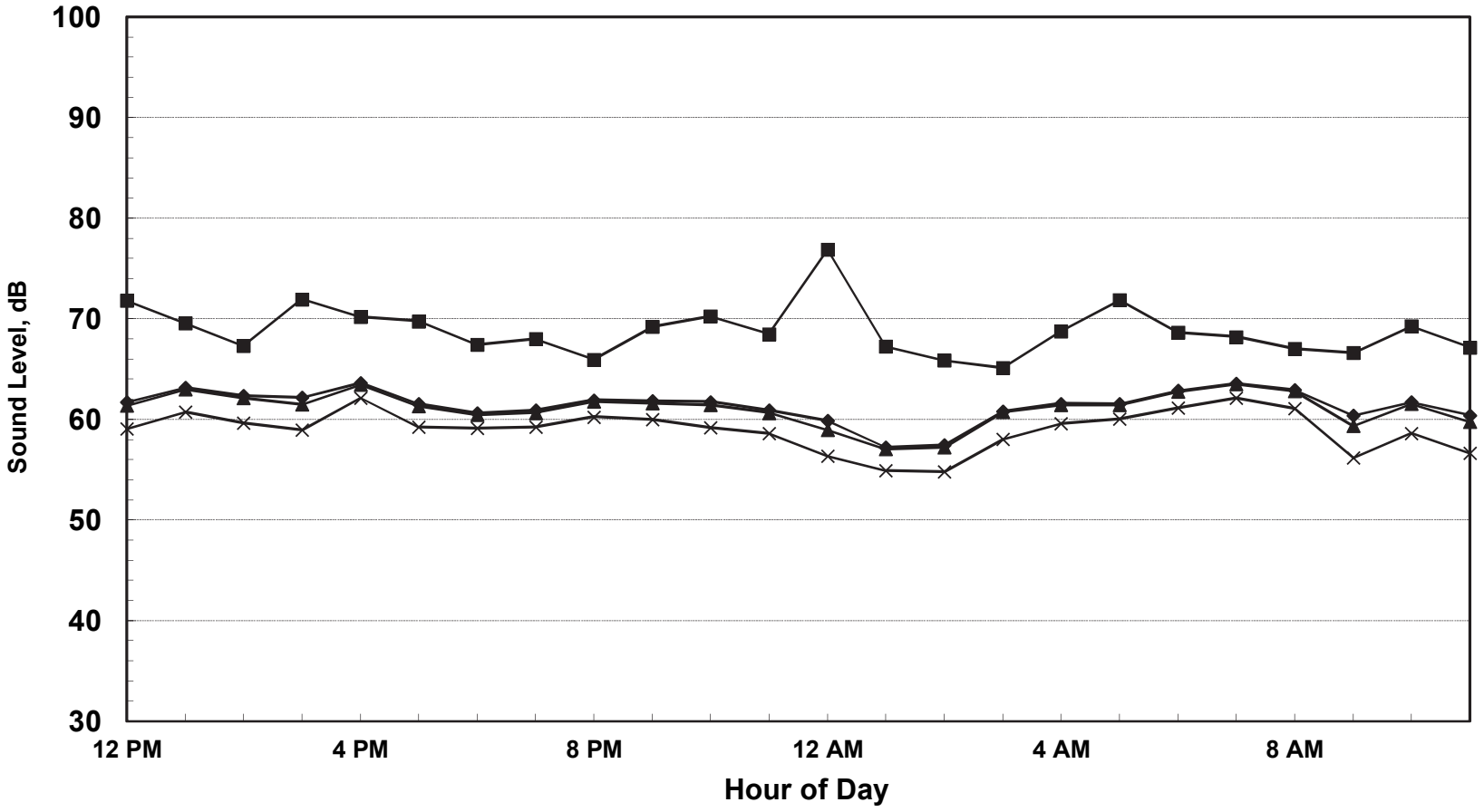
Appendix B

Home2 Suites by Hilton

24hr Continuous Noise Monitoring - Site A

January 31st - February 1st, 2017



Ldn = 67 dB

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Appendix C

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

Data Input Sheet

Project #: 2016-222 Home2 Suites
Description: Future Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	I-205	Project Site - Swimming Pool	125,640	69		31	3	8	65	980	
2	I-205	Project Site - Building Facades	125,640	69		31	3	8	65	950	3
2	Grant Line Road	Project Site - Building Facades	36,320	83		17	1	0.5	35	150	3
3	Corral Hollow Road	Project Site - Building Facades	25,900	83		17	1	0.5	40	145	3

Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project #: 2016-222 Home2 Suites
Description: Future Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	I-205	Project Site - Swimming Pool	63.9	55.3	63.1	67
2	I-205	Project Site - Building Facades	67.1	58.5	66.3	70
2	Grant Line Road	Project Site - Building Facades	64.7	54.4	56.6	66
3	Corral Hollow Road	Project Site - Building Facades	65.1	54.1	55.9	66

Appendix C

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2016-222 Home2 Suites
Description Future Traffic
Roadway Name: I-205
Location(s): 1

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 64
Medium Truck L_{dn}, dB: 55
Heavy Truck L_{dn}, dB: 63

Site Geometry:

Receiver Description: Project Site - Swimming Pool
Centerline to Barrier Distance (C_1): 965
Barrier to Receiver Distance (C_2): 15
Automobile Elevation: 32
Medium Truck Elevation: 34
Heavy Truck Elevation: 40
Pad/Ground Elevation at Receiver: 22
Receiver Elevation[1]: 27
Base of Barrier Elevation: 22
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to… Autos?	Medium Trucks?	Heavy Trucks?
28	6	59	50	58	**62**	Yes	Yes	Yes
29	7	58	49	57	**61**	Yes	Yes	Yes
30	8	57	48	56	**60**	Yes	Yes	Yes
31	9	55	47	55	**58**	Yes	Yes	Yes
32	10	54	46	54	**57**	Yes	Yes	Yes
33	11	53	45	53	**56**	Yes	Yes	Yes
34	12	53	44	52	**56**	Yes	Yes	Yes
35	13	52	43	51	**55**	Yes	Yes	Yes
36	14	51	42	50	**54**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)