4.11 NOISE AND VIBRATION

4.11.1 INTRODUCTION

The Noise and Vibration section of the EIR discusses the existing noise environment in the immediate project vicinity and identifies potential noise-related impacts and mitigation measures associated with the proposed project. Specifically, this section analyzes potential construction and operational noise levels attributable to the proposed project and the resultant impacts of these noise levels upon any surrounding sensitive receptors. In addition, this section assesses existing and future anticipated traffic noise levels along roadways surrounding the project site, as well as train noise along the nearby Union Pacific Railroad (UPRR) tracks, and the potential effects of such off-site traffic and train noise upon any sensitive outdoor areas within the proposed project. Groundborne vibration from construction equipment sources is also evaluated to determine whether on-site vibratory construction equipment could result in adverse effects to nearby structures. Information presented in this section is primarily drawn from the *Davis General Plan*[1] and the *Environmental Noise Assessment* prepared in the form of this section specifically for the proposed project by j.c. brennan & associates, Inc. (see Appendix I for technical calculations).[2]

4.11.2 EXISTING ENVIRONMENTAL SETTING

The Existing Environmental Setting section provides background information on noise and vibration, a discussion of acoustical terminology and the effects of noise on people, existing sensitive receptors in the project vicinity, existing sources and noise levels in the project vicinity, and groundborne vibration.

Acoustical Terminology

Acoustics is the science of sound. Sound is a mechanical energy of vibration transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough, 20 times per second, 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, called 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.

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1 City of Davis. *Davis General Plan.* Adopted May 2001. Amended through January 2007.
2 j.c. brennan & associates, Inc. March 16, 2015.

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 (dB) scale uses the hearing threshold (20 micropascals or vibrations per second), 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. A-weighting is the most commonly used of a family of curves defined in the International Electrotechnical Commission (IEC) standard 61672:2003 and various national standards relating to the measurement of sound pressure level. A-weighting is applied to instrument-measured sound levels in an effort to account for the relative loudness perceived by the human ear, as the ear is less sensitive to low frequencies. A-weighting is employed by arithmetically adding a table of values, listed by octave or third-octave bands, to the measured sound pressure levels in dB. The resulting octave band measurements are usually added (logarithmic method) to provide a single A-weighted value describing the sound; the units are written as dBA. A strong correlation exists between A-weighted sound levels and the way the human ear perceives sound. Accordingly, 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 noise 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 PM to 7:00 AM) 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, L_{dn} tends to disguise short-term variations in the noise environment.

Table 4.11-1 provides a list of several examples of the noise levels associated with common activities.

Table 4.11-1 Typical Noise Levels		
Common Outdoor Activities	**Noise Level (dBA)**	**Common Indoor Activities**
	--110--	Rock Band
Jet Fly-over at 300 meters (1,000 feet)	--100--	
Gas Lawn Mower at 1 meter (3 feet)	--90--	
Diesel Truck at 15 meters (50 feet), at 80 kilometers/hour (50 miles/hour)	--80--	Food Blender at 1 meter (3 feet) Garbage Disposal at 1 meter (3 feet)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 meters (100 feet)	--70--	Vacuum Cleaner at 3 meter (10 feet)
Commercial Area Heavy Traffic at 90 meters (300 feet)	--60--	Normal Speech at 1 meter (3 feet)
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. November, 2009.		

Acoustic Addition

Because of the logarithmic nature of the decibel scale, provided two sources of noise differ in intensity by at least 10 dB, their noise would not be additive. Two noise levels differing by 10 dB, which are added together, essentially equal the higher of the two noise levels.[3]

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; or
- Physiological effects such as hearing loss or sudden startling.

[3] Because the decibel scale is logarithmic, decibels must be converted into energy before undergoing mathematical conversion, so the formula for adding two sources of noise is as follows:
$L_{sum} = 10 * \text{Log}_{10} (10 \wedge {}^{(L_1 / 10)} + 10 \wedge {}^{(L_2 / 10)})$
Which for theoretical values of 60 and 70 for L_1 and L_2, respectively, computes as follows:
$L_{sum} = 10 * \text{Log}_{10} (10 \wedge {}^{(70 / 10)} + 10 \wedge {}^{(60 / 10)})$
Which reduces to:
L_{sum} = 70.41 dB or 70 dB after rounding.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. A completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction does not exist. 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 the new noise environment compares to the existing environment to which one has adapted (i.e., the ambient noise level). In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise would be judged by those hearing the noise.

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

- Except in carefully controlled laboratory experiments, a change of 1.0 dB cannot be perceived;
- Outside of the laboratory, a 3.0 dB change is considered a barely perceivable difference;
- A change in level of at least 5.0 dB is required before any noticeable change in human response would be expected; and
- A 10 dB change is subjectively heard as approximately a doubling in loudness, and would typically cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately six 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 Sensitive Receptors

Certain land uses are more sensitive to ambient noise levels than others due to the amount of noise exposure (in terms of both exposure time and shielding from noise sources) and the type of activities typically involved. Residences, schools, libraries, churches, hospitals, nursing homes, auditoriums, parks, and outdoor recreation areas are generally more sensitive to noise than are commercial and industrial land uses. Accordingly, such land uses are referred to as sensitive receptors.

Sensitive receptors, as so defined above, are not located immediately adjacent to the proposed project site. West of the project site, across Mace Boulevard, a sensitive receptor includes the University Covenant Church. The church is located approximately 150 feet west of the project site. The Seville and Alhambra multi-family residential apartments are located further to the west, approximately 650 to 700 feet from the project site. The nearest rural residence is located approximately 0.6-mile northeast from the project site, and approximately 60 feet from the proposed 8-inch sewer line connection (north route).

Existing Ambient Noise Levels

To quantify the existing ambient noise environment in the project vicinity, short-term ambient noise level measurements and continuous (24-hour) noise level measurements were conducted at three locations on the project site and within the vicinity in January 2014, when schools, including the University of California, Davis (UC Davis), were in session (see Figure 4.11-1). The ambient noise levels measured are presented in Table 4.11-2. The maximum value (L_{max}) represents the highest noise level measured during an interval. The average value (L_{eq}) represents the energy average of all of the noise measured during an interval. The median value (L_{50}) represents the sound level exceeded 50 percent of the time during an interval.

Table 4.11-2
Summary of Existing Background Noise Measurement Data

Site	Date	L_{dn}	Average Measured Hourly Noise Levels (dB)					
			Daytime (7 AM – 10 PM) Low-High (Average)			Nighttime (10 PM – 7 AM) Low-High (Average)		
			L_{eq}	L_{50}	L_{max}	L_{eq}	L_{50}	L_{max}
Continuous (24-Hour) Noise Level Measurements								
A	January 7 to 8, 2015	71	64	56	84	65	56	82
Short-Term Noise Level Measurements						**Notes**		
1	January 7, 2015 – 12:07 PM	N/A	46	45	52	I-80 traffic, CR 105 contributing to background		
2	January 7, 2015 – 12:25 PM	N/A	42	42	56	I-80 traffic, CR 105 contributing to background		
3	January 7, 2015 – 12:44 PM	N/A	48	43	66	Mace Blvd traffic, I-80 contributing to background		
4	January 7, 2015 – 12:58 PM	N/A	51	50	60	Mace Blvd traffic, I-80 contributing to background		
5	January 7, 2015 – 1:20 PM	N/A	63	60	74	Mace Blvd. and 2nd St. traffic, I-80 contributing to background		
6	February 14, 2015 – 10:22 AM	N/A	59	50	70	Mace Blvd. and Alhambra Dr. traffic. Landscaper noise.		
7	February 14, 2015 – 10:36 AM	N/A	61	60	70	Mace Blvd. traffic		

Note: I-80 = Interstate 80; CR = County Road

Source: j.c. brennan & associates, Inc., March 16, 2015.

Measured ambient noise levels at Site A are fairly typical of locations adjacent to a busy freeway and railroad line. Nighttime noise levels remained fairly high due to nighttime freeway and rail activity. Noise levels at Sites 1 to 4 were fairly low and typical of rural areas removed from busy roadways. Noise levels for Sites 5 to 7 were fairly typical for a suburban environment which includes noise exposure from arterial roadways and neighborhood activity, such as landscaping.

Figure 4.11-1
Noise Measurement Locations

Source: j.c. brennan & associates, Inc., March 16, 2015.

Existing Roadway Noise Levels

To predict existing noise levels due to traffic, j.c. brennan & associates used the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA RD-77-108). Traffic volumes for existing conditions were obtained from the traffic study prepared for the project (Fehr & Peers).

Truck percentages and vehicle speeds on the local area roadways were estimated from field observations.

Traffic noise levels are predicted at the sensitive receptors located at the closest typical setback distance along each project-area roadway segment. 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 project's 'technical noise expert, j.c. brennan & associates, believes that this traffic noise analysis is representative of the majority of sensitive receptors located closest to the project-area roadway segments analyzed.

Land uses adjacent to some of the project-area roadways consist primarily of commercial and retail uses, which are generally not considered sensitive to traffic noise.

Table 4.11-3 presents the existing traffic noise levels in terms of L_{dn} at closest sensitive receptors along each roadway segment, as well as the distances to existing traffic noise contours. Appendix I to this EIR provides details regarding the FHWA modeling, including the complete inputs and results.

Railroad Noise Levels

Railroad activity in the project vicinity occurs on the UPRR line, which is located approximately 150 feet south of the proposed project site, parallel to Interstate 80. The line is currently used for both freight and passenger train service (including the Amtrak Capitol Corridor, California Zephyr, and Coastal Starlight[4]). However, Amtrak events are brief and do not substantially contribute to daily ambient noise levels when compared to freight train events. Therefore, this analysis focuses primarily on freight operations.

In order to quantify noise exposure from existing train operations, a continuous (24-hour) noise level measurement survey was conducted adjacent the railroad line. The purpose of the noise level measurements was to determine the typical Sound Exposure Level (SEL) for railroad line operations, while accounting for the effects of travel speed, warning horns, and other factors which may affect noise generation. SEL is defined under the Method of Analysis section of this section. In addition, the noise level measurement equipment was programmed to identify individual train events, so that the typical number of train operations could be determined.

[4] The Great American Stations. *Davis, CA (DAV).* Accessed April 21, 2015. Available at: http://www.greatamericanstations.com/Stations/DAV.

Table 4.11-3
Existing Traffic Noise Levels and Distances to Contours

Roadway	Segment	Exterior Traffic Noise Level (dB L_{dn}) at Nearest Sensitive Receptor	Distance (feet) to Traffic Noise Contours (L_{dn})[1]		
			70 dB	65 dB	60 dB
5th Street	West of L Street	63.4	18	39	85
5th Street	L St. to Pole Line Rd.	61.0	18	38	81
5th Street	East of Pole Line Rd.	60.7	18	39	83
Alhambra Dr.	South of E Covell Blvd.	56.5	8	16	35
Alhambra Dr.	West of Mace Blvd.	59.0	11	24	51
Cantrill Dr.	North of 2nd Street	54.9	6	13	27
Chiles Rd.	North of E Covell Blvd.	62.5	16	34	73
E Covell Blvd.	West of F Street	64.9	32	69	149
E Covell Blvd.	F St. to J Street	63.0	34	73	158
E Covell Blvd.	J St. to L Street	57.2	25	53	114
E Covell Blvd.	L St. to Pole Line Rd.	62.7	32	70	150
E Covell Blvd.	Pole Line Rd. to Birch Ln.	63.3	27	58	125
E Covell Blvd.	Birch Ln. to Baywood Ln.	63.3	27	58	125
E Covell Blvd.	Baywood Ln. to Manzanita Ln.	63.2	26	57	123
E Covell Blvd.	Manzanita Ln. to Wright Blvd.	63.2	27	57	123
E Covell Blvd.	Wright Blvd. to Monarch Ln.	63.4	27	58	126
E Covell Blvd.	Monarch Ln. to Alhambra Dr.	64.8	34	73	156
E Covell Blvd.	Alhambra Dr. to Harper Jr. HS	64.1	31	66	142
E Covell Blvd.	West of Research Park Dr.	62.1	30	64	137
E Covell Blvd.	Research Park Dr. to Drew Cir.	62.3	23	50	107
E Covell Blvd.	Drew Cir. to Valdora Street	62.2	21	45	97
E Covell Blvd.	Valdora St. to Lillard Dr.	63.4	20	43	92
E Covell Blvd.	Lillard Dr. to Research Park Dr.	60.2	14	31	67
E Covell Blvd.	Research Park Dr. to Drummond Ave.	64.0	20	43	93
E Covell Blvd.	Drummond Ave. to Mace Blvd.	57.9	8	17	36
E Covell Blvd.	East of Mace Blvd.	56.7	8	17	36
Danbury Street	South of Lillard Dr.	57.2	7	15	32
Drexel Drive	West of L Street	54.6	5	10	22
Drexel Drive	L St. to Pole Line Rd.	50.6	3	6	12
Drummond Ave.	Lillard to E Covell Blvd.	56.1	6	13	27
F Street	North of E Covell Blvd.	62.2	15	32	70
F Street	South of E Covell Blvd.	60.2	13	29	62
I-80	East of Mace Blvd.	70.8	534	1,149	2,476
J Street	South of E Covell Blvd.	57.5	7	16	34
L Street	E Covell Blvd. to Drexel Dr.	57.3	7	15	33
L Street	South of Drexel Dr.	57.2	7	15	32
L Street	North of 5th Street	59.3	10	21	45
L Street	5th St. to 3rd Street	60.3	11	24	52
Lillard Dr.	E Covell Blvd. to Danbury Street	59.2	11	25	53
Lillard Dr.	Danbury St. to Drummond Ave.	56.5	8	16	35
Lillard Dr.	East of Drummond Ave.	50.8	3	7	15
Loyola Dr.	East of Pole Line Rd.	56.6	6	14	30

(Continued on next page)

Table 4.11-3
Existing Traffic Noise Levels and Distances to Contours

Roadway	Segment	Exterior Traffic Noise Level (dB L_{dn}) at Nearest Sensitive Receptor	Distance (feet) to Traffic Noise Contours (L_{dn})[1]		
			70 dB	65 dB	60 dB
Mace Blvd.	Harper Jr. HS to Alhambra Dr.	50.5	30	65	141
Mace Blvd.	Alhambra Dr. to 2nd Street	62.7	38	81	175
Mace Blvd.	Chiles Rd. to E Covell Blvd.	54.0	28	60	130
Mace Blvd.	E Covell Blvd. to El Macero Dr.	61.0	16	35	76
Mace Blvd.	South of El Macero Dr.	59.3	13	27	59
Pena Dr.	North of 2nd Street	56.6	7	15	33
Pole Line Rd.	North of E Covell Blvd.	64.2	31	67	143
Pole Line Rd.	E Covell Blvd. to Claremont Dr.	58.7	13	29	62
Pole Line Rd.	Claremont Dr. to Loyola Dr.	61.6	14	30	64
Pole Line Rd.	South of Loyola Dr.	61.2	13	28	60
Pole Line Rd.	North of 5th Street	62.3	15	33	71
Pole Line Rd.	South of 5th Street	63.5	18	40	86
Research Park	North of E Covell Blvd.	55.7	8	18	39
3rd Street	West of L Street	58.6	9	19	40

Notes:
[1] Distances to traffic noise contours are measured in feet from the centerlines of the roadways.
[2] I-80 = Interstate 80; CR = County Road

Source: j.c. brennan & associates, Inc., March 16, 2015.

The location of the continuous noise monitoring site is shown on Figure 4.11-1. Table 4.11-4 shows a summary of the continuous noise measurement results. Based upon the noise level data, number of operations and methods of calculation, described in the Method of Analysis section of this section, the L_{dn} value for railroad line operations has been calculated, and the distances to the L_{dn} noise level contours are shown in Table 4.11-5.

Table 4.11-4
Railroad Noise Measurement Results

Measurement Location	Railroad Track	Grade Crossing/ Warning Horn	Freight Train Events Per 24-Hour Period	Distance to Centerline	SEL
LT-A	UPRR	No	15	150 feet	99 dB

Source: j.c. brennan & associates, Inc., March 16, 2015.

Table 4.11-5
Approximate Distances to the Railroad Noise Contours

Exterior Railroad Noise Level at Measurement Site (L_{dn})	Distance to L_{dn} Contour		
	60 dB	65 dB	70 dB
UPRR Line			
69 dB @ 150 feet	626 feet	291 feet	135 feet

Source: j.c. brennan & associates, Inc., March 16, 2015.

Vibration

While vibration is similar to noise, both involving a source, a transmission path, and a receiver, vibration differs from noise because 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 depends 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 Davis does not have specific policies pertaining to vibration levels. However, vibration levels associated with construction activities and project operations are addressed as potential vibration 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 4.11-6 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). One-half this minimum threshold or 0.1 in/sec p.p.v. is considered a safe criterion that would protect against architectural or structural damage, as indicated in Table 4.11-6. The general threshold at which human annoyance could occur is noted as 0.1 in/sec p.p.v.

Table 4.11-6
Effects of Vibration on People and Buildings

Peak Particle Velocity		Human Reaction	Effect on Buildings
mm/sec	in/sec		
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.

4.11.3 REGULATORY CONTEXT

In order to limit exposure to physically and/or psychologically damaging noise levels, the State of California, various county governments, and most municipalities in the State have established standards and ordinances to control noise. The following provides a general overview of the existing State and local regulations that are relevant to the proposed project.

State Regulations

The following are the State environmental laws and policies relevant to noise.

California State Building Codes

The State Building Code, Title 24, Part 2 of the State of California Code of Regulations, establishes uniform minimum noise insulation performance standards to protect persons within new buildings which house people, including hotels, motels, dormitories, apartment houses, and dwellings other than single-family dwellings. Title 24 mandates that interior noise levels attributable to exterior sources shall not exceed 45 dB L_{dn} or CNEL in any habitable room. Title 24 also mandates that for structures containing noise-sensitive uses to be located where the L_{dn} or CNEL exceeds 60 dB, an acoustical analysis must be prepared to identify mechanisms for limiting exterior noise to the prescribed allowable interior levels. If the interior allowable noise levels are met by requiring that windows be kept closed, the design for the structure must also specify a ventilation or air conditioning system to provide a habitable interior environment.

Local Regulations

The following are the local environmental policies relevant to noise.

Yolo County General Plan

The following applicable goals, policies, and standards are taken from Health and Safety Element of the Yolo County General Plan.

Goal HS-7 Protect people from the harmful effects of excessive noise.

Policy HS-7.1 Ensure that existing and planned land uses are compatible with the current and projected noise environment. However, urban development generally experiences greater ambient (background) noise than rural areas. Increased density, as supported by the County in this General Plan, generally results in even greater ambient noise levels. It is the County's intent to meet specified indoor noise thresholds, and to create peaceful backyard living spaces where possible, but particular ambient outdoor thresholds may not always be achievable. Where residential growth is allowed pursuant to this general plan, these greater noise

levels are acknowledged and accepted, notwithstanding the guidelines in Figure HS-7.

Policy HS-7.3 Protect important agricultural, commercial, industrial, and transportation uses from encroachment by land use sensitive to noise and air quality impacts.

Policy HS-7.4 For proposed new discretionary development, where it is not possible to reduce noise levels in outdoor activity areas to 60 dB CNEL or less using practical application of the best-available noise reduction measures, greater exterior noise levels may be allowed, provided that all available reasonable and feasible exterior noise level reduction measures have been implemented.

Policy HS-7.5 Minimize the impact of noise from transportation sources including roads, rail lines, and airports on nearby sensitive land uses.

Policy HS-7.6 Support improvements to at-grade crossings to eliminate the need for train whistle blasts in, near, or through communities.

Policy HS-7.8 Encourage local businesses to reduce vehicle and equipment noise through fleet and equipment modernization or retrofits, use of alternative fuel vehicles and installation of mufflers or other noise reducing equipment.

City of Davis General Plan

The Davis General Plan goals and policies relating to noise and vibration that are applicable to the proposed project are presented at the end of the section in Table 4.11-12.

City of Davis Noise Ordinance

Section 24 of the City of Davis Municipal Code establishes a maximum noise level standard of 55 dB during the hours of 7:00 AM to 9:00 PM, and 50 dB during the hours of 9:00 PM to 7:00 AM. The ordinance defines maximum noise level as the "maximum continuous sound level or repetitive peak level produced by a sound source or group of sources." For the purposes of this analysis, j.c. brennan & associates, Inc. interprets this definition to be equivalent to the average noise level descriptor, L_{eq}. The Municipal Code makes exemptions for certain typical activities which may occur within the City. The exemptions are listed in Article 24.02.040, Special Provisions, and are summarized below:

a) Normal operation of power tools for non-commercial purposes are typically exempted between the hours of 8 AM and 8 PM unless the operation unreasonably disturbs the peace and quiet of any neighborhood.
b) Construction or landscape operations would be exempt during the hours of 7 AM to 7 PM Mondays through Fridays and between the hours of 8 AM to 8 PM Saturdays and Sundays assuming that the operations are authorized by valid city permit or business license, or carried out by employees or contractors of the city and one of the following conditions apply:
    (1) No individual piece of equipment shall produce a noise level exceeding eighty-three dBA at a distance of twenty-five feet. If the device is housed within a structure on the property, the measurement shall be made outside the structure at a distance as close to twenty feet from the equipment as possible.
    (2) The noise level at any point outside of the property plane of the project shall not exceed eighty-six dBA.
    (3) The provisions of subdivisions (1) and (2) of this subsection shall not be applicable to impact tools and equipment; provided, that such impact tools and equipment shall have intake and exhaust mufflers recommended by manufacturers thereof and approved by the director of public works as best accomplishing maximum noise attenuation, and that pavement breakers and jackhammers shall also be equipped with acoustically attenuating shields or shrouds recommended by the manufacturers thereof and approved by the director of public works as best accomplishing maximum noise attenuation. In the absence of manufacturer's recommendations, the director of public works may prescribe such means of accomplishing maximum noise attenuation as he or she may determine to be in the public interest.
        Construction projects located more than two hundred feet from existing homes may request a special use permit to begin work at 6:00 AM on weekdays from June 15th until September 1st. No percussion type tools (such as ramsets or jackhammers) can be used before 7:00 AM. The permit shall be revoked if any noise complaint is received by the police department.
    (4) No individual powered blower shall produce a noise level exceeding seventy dBA measured at a distance of fifty feet.
    (5) No powered blower shall be operated within one hundred feet radius of another powered blower simultaneously.
    (6) On single-family residential property, the seventy dBA at fifty feet restriction shall not apply if operated for less than ten minutes per occurrence.
c) The City Code also exempts air conditioners, pool pumps, and similar equipment from the noise regulations, provided that they are in good working order.
d) Work related to public health and safety is exempt from the noise requirements.
e) Safety devices are exempt from the noise requirements.
f) Emergencies are exempt from the noise requirements.

In addition, Section 24 of the City of Davis Municipal Code establishes the noise violations which can be issued by the Davis Police Department. A Sound (Noise) Permit from the Police Department is required for the following uses:

- Amplified sound at any indoor or outdoor event and more than 100 people will attend; and
- Install, use or operate within the City a loudspeaker or other amplifying equipment in a fixed or moveable position or mounted upon any sound truck for purposes of giving instruction, directions, talks, addresses, lectures or transmitting music to any persons upon a street, alley, sidewalk, park, place or other outdoor property.

The Sound (Noise) Permit outlines the noise limits allowable under the permit as well as the requirements for a noise permit.

4.11.4 IMPACTS AND MITIGATION MEASURES

This section describes the standards of significance and methodology utilized to analyze and determine the proposed project's potential impacts related to noise and vibration.

Standards of Significance

Consistent with Appendix G of the CEQA Guidelines, the City's General Plan, and professional judgment, a significant impact would occur if the proposed project would result in the following:

- 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 permanent 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 a n 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;
- For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels; or
- Conflict, or create an inconsistency, with any applicable plan, policy, or regulation adopted for the purpose of avoiding or mitigating environmental effects related to noise and vibration.

The first three thresholds listed above, taken from Appendix G of the CEQA Guidelines, are hereby defined more specifically for the City of Davis based upon General Plan and Noise Ordinance requirements, as well as previous EIRs prepared and certified by the Davis City Council:

- *Exposure of persons to or generation of noise levels in excess of general plan standards or noise ordinance*

Specifically, 60 to 70 dB L_{dn} for transportation noise sources at existing residential uses, 60 to 75 dB L_{dn} for the proposed hotel use, and 65 to 75 dB L_{dn} for proposed office, business commercial, and professional uses. For non-transportation noise sources, the standards of the *City of Davis Municipal Code* Section 24 apply. See Tables 4.11-7 and 4.11-8 below.

Table 4.11-7
Standards for Exterior Noise Exposure

Land Use Category	Community Noise Exposure L_{dn} or CNEL, dBA			
	Normally Acceptable	**Conditionally Acceptable**	**Unacceptable**	**Clearly Unacceptable**
Residential	Under 60	60 to 70*	70 to 75	Above 75
Transient Lodging - Motels, Hotels	Under 60	65 to 75	75 to 80	Above 80
Schools, Libraries, Churches, Hospitals, Nursing Homes	Under 60	60 to 70	70 to 80	Above 80
Auditoriums, Concert Halls, Amphitheaters	Under 50	50 to 70	N/A	Above 70
Sports Arenas, Outdoor Spectator Sports	N/A	Under 75	N/A	Above 75
Playgrounds, Neighborhood Parks	Under 70	N/A	70 to 75	Above 75
Golf Courses, Riding Stables, Water Recreation, Cemeteries	Under 70	N/A	70 to 80	Above 80
Office Buildings, Business Commercial and Professional	Under 65	65 to 75	Above 75	N/A
Industrial, Manufacturing, Utilities, Agriculture	Under 65	70 to 80	Above 80	N/A

Notes:
Normally Acceptable: Specified land use is satisfactory based upon the assumption that any buildings involved are of normal conventional construction, without special noise insulation requirements.
Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is conducted, and needed noise attenuation features are included in the construction or development.
*Normally Unacceptable***:** New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be conducted and needed noise attenuation features shall be included in the construction or development.
Clearly Unacceptable: New construction or development shall not be undertaken.
N/A: Not applicable
* The City Council shall have discretion within the "conditionally acceptable" range for residential use to allow levels in outdoor spaces to go up to 65 dBA if cost effective or aesthetically acceptable measures are not available to reduce noise levels in outdoor spaces to the "normally acceptable" levels. Outdoor spaces which are designed for visual use only (for example, streetside landscaping in an apartment project), rather than outdoor use space may be considered acceptable up to 70 dBA.

Source: City of Davis. Davis General Plan. Table 19. Adopted May 2001. Amended through January 2007.

Table 4.11-8 Standards for Interior Noise Levels	
Use	**Noise Level (dBA)**
Residences, schools through grade 12, hospitals and churches	45
Offices	55
Source: City of Davis. Davis General Plan. Table 20. Adopted May 2001. Amended through January 2007.	

- *Exposure of persons to or generation of excessive groundborne vibration*

  A limit of 0.1 in/sec p.p.v. is considered a safe criterion that would protect against architectural or structural damage.

- *A substantial permanent increase in ambient noise levels in the project vicinity above levels without the project*

  The Federal Interagency Committee on Noise (FICON) criteria is utilized for this threshold (see Table 4.11-9)

Table 4.11-9 Significance of Changes in Noise Exposure	
Ambient Noise Level Without Project, Ldn	**Increase Required for Significant Impact**
< 60 dB	+ 5.0 dB or more
60 to 65 dB	+ 3.0 dB or more
> 65 dB	+ 1.5 dB or more
< 60 dB	+ 5.0 dB or more
FICON provides guidance in the assessment of changes in ambient noise levels resulting from aircraft operations. The recommendations are based upon studies that relate aircraft noise levels to the percentage of persons highly annoyed by the noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, it has been widely accepted that they are applicable to all sources of noise described in terms of cumulative noise exposure metrics such as the L_{dn}. *Source: Federal Interagency Committee on Noise (FICON).*	

Issues Not Discussed Further

Airports do not exist within two miles of the proposed project site. The UC Davis University Airport is located approximately 5.3 miles southwest of the project site and the Medlock Field airport is located approximately 4.3 miles northwest of the project site. Therefore, this issue is not addressed further.

Method of Analysis

Below are descriptions of the methodologies utilized to determine traffic noise, train noise, operational noise, as well as construction noise and vibration impacts. Further modeling details and calculations are provided in Appendix I to this EIR. The results of the noise and vibration impact analyses were compared to the standards of significance discussed above in order to determine the associated level of impact.

The impact analysis will evaluate potential noise impacts associated with the 212-acre MRIC site, the subject site of the applicant's innovation center project, as well as the 16.58-acre Mace Triangle site, which the City of Davis is including within the overall project boundaries for purposes of annexation. This EIR has assumed that the Mace Triangle, with the exception of the existing Park-and-Ride lot, could be developed at a later date, subject to approval of additional discretionary entitlements. Therefore, the undeveloped portion of the Mace Triangle is proposed for development, but not as a part of the MRIC. The potential for impacts associated with development of 71,056 square feet of the Mace Triangle is considered in this EIR.

Traffic Noise

To describe future noise levels due to traffic, the FHWA model was used. Direct inputs to the model included traffic volumes provided by Fehr & Peers. The FHWA model is based upon the 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}/CNEL values, determination of the day/night distribution of traffic and adjustment of the traffic volume input data is necessary to yield an equivalent hourly traffic volume.

The Existing Plus Project conditions were utilized to determine the project-level impacts associated with traffic-related noise levels. The Cumulative No Project scenario for the proposed project includes the growth anticipated in the Sacramento Area Council of Governments (SACOG) Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) as well as the Davis Innovation Center (Davis IC), Mace Triangle, and Nishi development projects.

Any noise attenuation features would need to be designed sufficient to reduce the maximum noise levels anticipated to reasonable levels. Because the maximum noise levels would occur during the Cumulative Plus Project condition, noise attenuation features would need to be designed sufficient to reduce unacceptable noise levels under Cumulative Plus Project conditions as well as Existing Plus Project conditions.

Off-site traffic noise increase threshold test

The test of significance for increases in off-site traffic noise is two-fold. First, traffic noise levels are reviewed to see if the project's contribution to traffic noise would exceed the FICON levels identified in Table 4.11-9. If the project's increase in traffic noise levels along surrounding roadways would exceed the FICON criteria shown in Table 4.11-9, the proposed project would be considered to have a significant noise impact along that roadway segment.

The second part of the significance test would be applied if the project does not result in the traffic noise level increases shown in Table 4.11-9 (i.e., the project does not exceed the FICON criteria). In this case, each roadway segment is assessed to determine whether the project's traffic noise contribution would cause any receptors along the roadway to be exposed to exterior noise levels exceeding the City's General Plan Noise Element standards. Specifically, Noise Element Policy 1.1-c requires the following:

> New development and changes in use shall generally be allowed only if they will not adversely impact attainment within the community of the exterior and interior noise standards shown in Table 19 [Table 4.11-7] and Table 20 [Table 4.11-8] Cumulative and project specific impacts by new development on existing residential land uses shall be mitigated consistent with the standards in Table 19 [Table 4.11-7] and Table 20 [Table 4.11-8].

For residential uses, Table 19 [Table 4.11-7] establishes a Normally Acceptable exterior noise level standard of 60 dB L_{dn}. Therefore, if an existing residential receptor is exposed to existing noise levels of less than 60 dB L_{dn}, any project-related traffic noise level increase that causes noise levels to exceed 60 dB L_{dn} would be considered significant. If an existing receptor is exposed to conditionally acceptable exterior noise levels (60 to 70 dB) the FICON criteria shown in Table 4.11-9 would be used as the test of significance.

Operational Noise

Operational noise sources generated from the proposed project could potentially affect the noise-sensitive receptors located in the project vicinity. Specifically, parking lot activities, Heating, Ventilation, and Air-Conditioning (HVAC) units, and outdoor events at the Oval park are noise sources that could exceed the City of Davis's exterior noise level standards.

Construction Noise and Vibration

Construction noise and vibration was analyzed using data compiled for various pieces of construction equipment at a representative distance of 50 feet. The range of noise levels that could occur with project construction are also calculated at each of the nearest sensitive receptors, including receptors located adjacent to off-site sewer improvements. Construction activities are discussed relative to the applicable City of Davis noise policies.

Project-Specific Impacts and Mitigation Measures

The following discussion of potential noise and vibration impacts is based on the implementation of the proposed project in comparison with the standards of significance identified above. The discussions and mitigation measures presented below apply to both the MRIC and the Mace Triangle unless otherwise stated.

4.11-1 A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without project. Based on the analysis below, the impact is *less than significant.*

MRIC

During the construction of the proposed project, including roads, water and sewer lines, and related infrastructure, noise from construction activities would temporarily add to the noise environment in the project vicinity. As shown in Table 4.11-10, activities involved in construction would generate maximum noise levels ranging from 76 to 90 dB at a distance of 50 feet.

It should be noted that buildout of the MRIC will be phased over a period of time that will be driven by market forces. It is reasonable to assume, based upon studies conducted to date,[5] that the project may be built out by 2035. The MRIC project applicant has submitted a conceptual phasing plan (see Figure 3-19 of the Project Description chapter of this EIR), showing four project phases. Phase 1 is anticipated to consist of approximately 48 acres in the southern portion of the MRIC site. Phase 1 is estimated to contain approximately 540,000 square feet (sf), which will include 400,000 sf of research/manufacturing space to accommodate the expansion needs of Schilling Robotics, and 140,000 sf of research/office/research and development (R&D) which may incorporate ground floor ancillary retail of up to 40,000 sf. Two access points will be provided for Phase 1: (1) a new intersection at Mace Boulevard and Alhambra Boulevard, and (2) a new southern access point, which will connect to CR 32A, east of the existing Park-and-Ride lot driveway.

Table 4.11-10
Construction Equipment Noise

Type of Equipment	Maximum Level (dB) at 50 feet
Auger Drill Rig	84
Backhoe	78
Compactor	83
Compressor (air)	78
Concrete Saw	90
Dozer	82
Dump Truck	76
Excavator	81
Generator	81
Jackhammer	89
Pneumatic Tools	85

Source: Roadway Construction Noise Model User's Guide. Federal Highway Administration. FHWA-HEP-05-054. January 2006.

Phase 2 is anticipated to comprise approximately 29 acres, south of the Mace Drainage Channel. Total building square footage for this phase is projected to be 700,000 sf, including the proposed hotel/conference center, various research/office/R&D centered around the Oval park, and ancillary retail. An additional 700,000 sf of building space is projected for Phase 3, including research/office/R&D and manufacturing uses. Phase 4 consists of the northerly 82 acres of the MRIC site and is projected to include approximately 714,000 sf of manufacturing and research/office/R&D uses.

Activities involved in project construction would typically generate maximum noise levels ranging from 85 to 90 dB at a distance of 50 feet. The University Covenant Church is located approximately 150 feet west of the project site. Assuming a worst-case scenario where construction activity were to occur at this distance, maximum construction noise levels would be 75 to 80 dB L_{max}. However, the majority of

[5] BAE Urban Economics. *City of Davis Economic Evaluation of Innovation Park Proposals*. December 19, 2014.

construction activity on the MRIC site would occur at distances much greater than 150 feet. Construction activity occurring in the center of the MRIC site would be located approximately 1,500 feet from the church. At this distance construction noise levels would be approximately 55 to 60 dB L_{max}. Additionally, outdoor use areas at the church are located on the west side of the church building. Therefore, the additional distance and building shielding would provide an additional 5 dB of noise reduction to these outdoor use areas. Therefore, noise levels at outdoor use areas would be approximately 50 to 55 dB.

The nearest residential receptors would be located 650 feet or more from on-site construction activities. At this distance, construction related activities are predicted to generate maximum noise levels ranging between 63 to 68 dB L_{max}.

Off-site construction of sewer lines (northerly sewer alternative) could occur within approximately 60 to 80 feet of the existing rural residential receptor located north of the MRIC site. At this distance, temporary construction-related activities are predicted to generate maximum noise levels ranging between 81 to 86 dB L_{max}.

On-site construction activity after the first phase of development may occur near to occupied buildings or developed open spaces on the MRIC site.

Mace Triangle

Development of the Mace Triangle is not proposed as part of the MRIC. However, future development of the Mace Triangle would temporarily add to the noise environment in the project vicinity. As shown in Table 4.11-10, activities involved in construction would generate maximum noise levels ranging from 76 to 90 dB at a distance of 50 feet.

The nearest residential receptors would be located 700 feet or more from construction activities on the Mace Triangle. At this distance, construction related activities are predicted to generate maximum noise levels ranging between 57 to 62 dB L_{max}.

Compliance with Existing Law

Section 24 of the City of Davis Municipal Code establishes a maximum noise level standard of 55 dB during the hours of 7:00 AM to 9:00 PM, and 50 dB during the hours of 9:00 PM to 7:00 AM. The Municipal Code makes exemptions for certain typical activities which may occur within the City. The exemptions are listed in Article 24.02.040, Special Provisions, and are summarized below:

a) Normal operation of power tools for non-commercial purposes are typically exempted between the hours of 8 AM and 8 PM unless the operation unreasonably disturbs the peace and quiet of any neighborhood.
b) Construction or landscape operations would be exempt during the hours of 7 AM to 7 PM Mondays through Fridays and between the hours of 8 AM to 8 PM Saturdays and Sundays assuming that the operations are authorized by valid city permit or business license, or carried out by employees or contractors of the city

and one of the following conditions apply:

(1) No individual piece of equipment shall produce a noise level exceeding eighty-three dBA at a distance of twenty-five feet. If the device is housed within a structure on the property, the measurement shall be made outside the structure at a distance as close to twenty feet from the equipment as possible.

(2) The noise level at any point outside of the property plane of the project shall not exceed eighty-six dBA.

(3) The provisions of subdivisions (1) and (2) of this subsection shall not be applicable to impact tools and equipment; provided, that such impact tools and equipment shall have intake and exhaust mufflers recommended by manufacturers thereof and approved by the director of public works as best accomplishing maximum noise attenuation, and that pavement breakers and jackhammers shall also be equipped with acoustically attenuating shields or shrouds recommended by the manufacturers thereof and approved by the director of public works as best accomplishing maximum noise attenuation. In the absence of manufacturer's recommendations, the director of public works may prescribe such means of accomplishing maximum noise attenuation as he or she may determine to be in the public interest.

Construction projects located more than two hundred feet from existing homes may request a special use permit to begin work at 6:00 AM on weekdays from June 15th until September 1st. No percussion type tools (such as ramsets or jackhammers) can be used before 7:00 AM. The permit shall be revoked if any noise complaint is received by the police department.

(4) No individual powered blower shall produce a noise level exceeding seventy dBA measured at a distance of fifty feet.

(5) No powered blower shall be operated within one hundred feet radius of another powered blower simultaneously.

(6) On single-family residential property, the seventy dBA at fifty feet restriction shall not apply if operated for less than ten minutes per occurrence.

c) The City Code also exempts air conditioners, pool pumps, and similar equipment from the noise regulations, provided that they are in good working order.
d) Work related to public health and safety is exempt from the noise requirements.
e) Safety devices are exempt from the noise requirements.
f) Emergencies are exempt from the noise requirements.

Given the requirement for the proposed project to comply with existing law, the proposed project's construction noise impacts would be less-than-significant.

Conclusion

Construction would result in periods of elevated ambient noise levels and the potential for annoyance. However, the City of Davis Noise Ordinance establishes allowable hours of operation and noise limits for construction activities. Because construction activities are required to comply with the City's Noise Ordinance, phased construction of the proposed project would result in a ***less-than-significant*** impact.

Mitigation Measure(s)
None required.

4.11-2 Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels. Based on the analysis below, the impact is *less than significant.*

MRIC

The primary vibration-generating activities associated with the MRIC would occur during construction when activities such as grading, utilities placement, and parking lot construction occur. Sensitive receptors which could be impacted by construction related vibrations, especially vibratory compactors/rollers, are located approximately 150 to 650 feet, or further, from the MRIC site. Off-site sewer improvements could be as close as 60-80 feet from an existing residential use (northerly sewer alternative). At the aforementioned distances, 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 4.11-11 shows the typical vibration levels produced by construction equipment.

Table 4.11-11
Vibration Levels for Various Construction Equipment

Type of Equipment	Peak Particle Velocity @ 25 feet	Type of Equipment	Peak Particle Velocity @ 25 feet
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	0.074	0.026

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

The Table 4.11-11 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 of 50 feet. Therefore, construction vibrations are not predicted to cause damage to existing buildings or cause annoyance to sensitive receptors.

Mace Triangle

Development of the Mace Triangle is not proposed as part of the MRIC. The City of Davis has included the Mace Triangle within the overall project boundaries to allow the continuation of existing uses, while recognizing, and evaluating in the EIR, the potential for additional urban development on the Ikedas parcel and adjacent agricultural parcel. However, future development of the Mace Triangle would temporarily generate construction vibration in the Mace Triangle vicinity. As shown in Table 4.11-11, anticipated construction vibration levels 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 of 50 feet. Therefore, future construction vibrations associated with the Mace Triangle are not predicted to cause damage to existing buildings or cause annoyance to sensitive receptors.

Conclusion

Because construction vibrations are not predicted to cause damage to existing buildings or cause annoyance to sensitive receptors, implementation of the proposed project would not expose persons to or generate excessive ground borne vibration or ground borne noise levels. Therefore, potential impacts related to construction vibration would be considered ***less than significant***.

Mitigation Measure(s)
None required.

4.11-3 Transportation noise impacts to existing sensitive receptors in the project vicinity. Based on the analysis below, the impact is *less than significant.*

Vehicle trips associated with operation of the proposed project would result in changes to traffic on the existing roadway network within the project vicinity. As a result, project buildout would cause an increase in traffic noise levels on local roadways. To assess noise impacts due to project-related traffic increases on the existing local roadway network, noise levels have been calculated for both the Existing and Existing Plus Project traffic conditions.

With respect to the first part of the test of significance, Table 4.11-12 demonstrates that the FICON criteria would not be exceeded as a result of project traffic. As shown in Table 4.11-12, the largest increase in transportation noise levels from the proposed project would be 3.1 dB on Lillard Drive, east of Drummond Avenue.

Table 4.11-12
Existing and Existing Plus Project Traffic Noise Levels

Roadway	Segment	Noise Levels (L_{dn}, dB) at Outdoor Activity Areas of Nearest Sensitive Receptors					Distance to Existing + Project Traffic Noise		
		Existing	Existing + Project	Change	Significance Criteria[1]	Significant? (Y/N)	70 dB L_{dn}	65 dB L_{dn}	60 dB L_{dn}
5th St.	West of L St.	63.4	63.3	-0.1	+3 dB	No	18	38	83
5th St.	L St. to Pole Line Rd.	61.0	61.0	0.0	+3 dB	No	18	38	81
5th St.	East of Pole Line Rd.	60.7	60.6	-0.1	+3 dB	No	18	38	82
Alhambra Dr.	South of E Covell Blvd.	56.5	57.1	0.6	+5 dB or > 60 dB	No	8	18	38
Alhambra Dr.	West of Mace Blvd.	59.0	58.9	-0.1	+5 dB or > 60 dB	No	11	24	51
Cantrill Dr.	North of 2nd St.	54.9	55.6	0.7	+5 dB or > 60 dB	No	7	14	31
Chiles Rd.	North of E Covell Blvd.	62.5	62.8	0.3	+3 dB	No	17	36	77
E Covell Blvd.	West of F St.	64.9	65.8	0.9	+3 dB	No	37	79	169
E Covell Blvd.	F St. to J St.	63.0	63.4	0.4	+3 dB	No	37	79	169
E Covell Blvd.	J St. to L St.	57.2	59.6	2.4	+5 dB or > 60 dB	No	35	76	164
E Covell Blvd.	L St. to Pole Line Rd.	62.7	63.2	0.5	+3 dB	No	35	76	164
E Covell Blvd.	Pole Line Rd. to Birch Ln.	63.3	63.8	0.5	+3 dB	No	29	63	135
E Covell Blvd.	Birch Ln. to Baywood Ln.	63.3	63.9	0.6	+3 dB	No	29	63	136
E Covell Blvd.	Baywood Ln. to Manzanita Ln.	63.2	63.8	0.6	+3 dB	No	29	62	134
E Covell Blvd.	Manzanita Ln. to Wright Blvd.	63.2	63.7	0.5	+3 dB	No	29	62	133
E Covell Blvd.	Wright Blvd. to Monarch Ln.	63.4	64.4	1.0	+3 dB	No	32	68	147
E Covell Blvd.	Monarch Ln. to Alhambra Dr.	64.8	65.4	0.6	+3 dB	No	37	80	173
E Covell Blvd.	Alhambra Dr. to Harper Jr. HS	64.1	64.9	0.8	+3 dB	No	34	74	160
E Covell Blvd.	West of Research Park Dr.	62.1	62.6	0.5	+3 dB	No	32	69	148
E Covell Blvd.	Research Park Dr. to Drew Cir.	62.3	62.8	0.5	+3 dB	No	25	53	115
E Covell Blvd.	Drew Cir. to Valdora St.	62.2	62.4	0.2	+3 dB	No	22	47	101
E Covell Blvd.	Valdora St. to Lillard Dr.	63.4	63.2	-0.2	+3 dB	No	19	42	90
E Covell Blvd.	Lillard Dr. to Research Park Dr.	60.2	60.4	0.2	+3 dB	No	15	32	70

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Table 4.11-12
Existing and Existing Plus Project Traffic Noise Levels

Roadway	Segment	Noise Levels (L_{dn}, dB) at Outdoor Activity Areas of Nearest Sensitive Receptors					Distance to Existing + Project Traffic Noise		
		Existing	Existing + Project	Change	Significance Criteria[1]	Significant? (Y/N)	70 dB L_{dn}	65 dB L_{dn}	60 dB L_{dn}
E Covell Blvd.	Research Park Dr. to Drummond Ave.	64.0	63.5	-0.5	+3 dB	No	19	40	86
E Covell Blvd.	Drummond Ave. to Mace Blvd.	57.9	57.4	-0.5	+5 dB or > 60 dB	No	7	16	33
E Covell Blvd.	East of Mace Blvd.	56.7	56.6	-0.1	+5 dB or > 60 dB	No	8	16	36
Danbury Street	South of Lillard Dr.	57.2	57.4	0.2	+5 dB or > 60 dB	No	7	16	34
Drexel Drive	West of L St.	54.6	54.1	-0.5	+5 dB or > 60 dB	No	4	9	20
Drexel Drive	L St. to Pole Line Rd.	50.6	52.8	2.2	+5 dB or > 60 dB	No	4	8	16
Drummond Ave.	Lillard to E Covell Blvd.	56.1	57.3	1.2	+5 dB or > 60 dB	No	7	15	33
F St.	North of E Covell Blvd.	62.2	62.2	0.0	+3 dB	No	15	33	70
F St.	South of E Covell Blvd.	60.2	59.8	-0.4	+3 dB	No	13	27	59
I-80	East of Mace Blvd.	70.8	71.2	0.4	+1.5 dB	No	573	1234	2659
J St.	South of E Covell Blvd.	57.5	57.4	-0.1	+5 dB or > 60 dB	No	7	16	34
L St.	E Covell Blvd. to Drexel Dr.	57.3	57.0	-0.3	+5 dB or > 60 dB	No	7	15	32
L St.	South of Drexel Dr.	57.2	58.4	1.2	+5 dB or > 60 dB	No	8	18	39
L St.	North of 5th St.	59.3	59.2	-0.1	+5 dB or > 60 dB	No	10	21	44
L St.	5th St. to 3rd St.	60.3	60.3	0.0	+3 dB	No	11	24	52
Lillard Dr.	E Covell Blvd. to Danbury St.	59.2	59.8	0.6	+5 dB or > 60 dB	No	13	27	58
Lillard Dr.	Danbury St. to Drummond Ave.	56.5	57.9	1.4	+5 dB or > 60 dB	No	9	20	43
Lillard Dr.	East of Drummond Ave.	50.8	53.9	3.1	+5 dB or > 60 dB	No	5	11	23
Loyola Dr.	East of Pole Line Rd.	56.6	57.5	0.9	+5 dB or > 60 dB	No	7	16	34
Mace Blvd.	Harper Jr. HS to Alhambra Dr.	50.5	50.5	0.0	+5 dB or > 60 dB	No	30	65	141
Mace Blvd.	Alhambra Dr. to 2nd St.	62.7	63.9	1.2	+3 dB	No	45	97	209
Mace Blvd.	Chiles Rd. to E Covell Blvd.	54.0	54.3	0.3	+5 dB or > 60 dB	No	29	63	135
Mace Blvd.	E Covell Blvd. to El Macero Dr.	61.0	61.1	0.1	+3 dB	No	17	36	77

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Table 4.11-12
Existing and Existing Plus Project Traffic Noise Levels

Roadway	Segment	Noise Levels (L_{dn}, dB) at Outdoor Activity Areas of Nearest Sensitive Receptors					Distance to Existing + Project Traffic Noise[2]		
		Existing	Existing + Project	Change	Significance Criteria[1]	Significant? (Y/N)	70 dB L_{dn}	65 dB L_{dn}	60 dB L_{dn}
Mace Blvd.	South of El Macero Dr.	59.3	59.1	-0.2	+5 dB	No	12	26	57
Pena Dr.	North of 2nd St.	56.6	56.7	0.1	+5 dB	No	7	15	33
Pole Line Rd.	North of E Covell Blvd.	64.2	64.4	0.2	+3 dB	No	32	68	146
Pole Line Rd.	E Covell Blvd. to Claremont Dr.	58.7	58.9	0.2	+5 dB or > 60 dB	No	14	29	63
Pole Line Rd.	Claremont Dr. to Loyola Dr.	61.6	61.5	-0.1	+3 dB	No	14	29	63
Pole Line Rd.	South of Loyola Dr.	61.2	61.4	0.2	+3 dB	No	13	29	62
Pole Line Rd.	North of 5th St.	62.3	62.6	0.3	+3 dB	No	16	34	74
Pole Line Rd.	South of 5th St.	63.5	63.7	0.2	+3 dB	No	19	41	88
Research Park	North of E Covell Blvd.	55.7	57.8	2.1	+5 dB or > 60 dB	No	12	25	53
3rd St.	West of L St.	58.6	58.4	-0.2	+5 dB or > 60 dB	No	8	18	39

Notes:
[1] Where existing noise levels are less than 60 dB an increase of 5 dB would be a significant increase. Additionally, any increase causing noise levels to exceed the City's Normally Acceptable 60 dB L_{dn} noise level standard at an existing outdoor activity area of a residential use would also be significant. Where existing noise levels exceed 60 dB but are less than 65 dB, an increase of 3 dB or more would be significant. Where existing noise levels exceed 65 dB, an increase of 1.5 dB or more would be significant.
[2] Distances to traffic noise contours are measured in feet from the centerlines of the roadways.

Source: j.c. brennan & associates, Inc., March 16, 2015.

The project-related increases in transportation noise levels would be less than the FICON criteria outlined in Table 4.11-9 above. As shown in the table, some noise-sensitive receptors located along the project-area roadways are currently exposed to exterior traffic noise levels exceeding the City of Davis 60 dB L_{dn} exterior noise level standard for residential uses. These receptors would continue to experience elevated exterior noise levels with implementation of the proposed project; however, the proposed project's contribution to traffic noise increases is predicted to be 3.1 dB, or less. For example, sensitive receptors located adjacent to Covell Boulevard from Pole Line Road to Birch Lane currently experience an exterior noise level of approximately 63.3 dB L_{dn}. This exceeds the City's Normally Acceptable exterior noise level standard of 60 dB L_{dn}. Under Existing Plus Project conditions, exterior traffic noise levels are predicted to be approximately 63.8 dB L_{dn}. This would still exceed the City's Normally Acceptable exterior noise level standard of 60 dB L_{dn}. However, the project's contribution 0.5 dB would not exceed the FICON criteria of 3.0 dB where existing noise levels are between 60 and 65 dB. Therefore, this would be a less than significant impact at this particular location.

With respect to the second part of the test of significance, Table 4.11-12 demonstrates that the proposed project is not predicted to cause increases in existing traffic noise levels which would trigger a new exceedance of the City of Davis' 60 dB L_{dn} exterior noise level standard at sensitive receptor locations.

Therefore, traffic-related noise increases attributable to project vehicles would result in ***less than significant*** impacts to existing sensitive receptors along nearby roadways.

Mitigation Measure(s)
None required.

4.11-4 Transportation noise impacts to new sensitive receptors in the project vicinity. Based on the analysis below and with the implementation of mitigation, the impact is *less than significant.*

Development of the proposed project would introduce new sensitive receptors to the area. The primary sensitive receptor location would be associated with the proposed MRIC hotel use. Generally the types of uses associated with the proposed project (offices, laboratories, light manufacturing, commercial, retail, etc.) are not considered to be sensitive to noise. However, the project includes various green space outdoor use areas. Therefore, this analysis also examines transportation noise levels at these outdoor areas. These new sensitive receptors could be exposed to potentially substantial exterior or interior noise levels associated with nearby transportation noise, including traffic and UPRR activity.

MRIC

Exterior Noise Levels

Existing Plus Project traffic noise levels were predicted at the proposed outdoor use areas associated with the project. Table 4.11-13 shows the predicted traffic noise levels at the proposed uses that may be impacted by noise from Mace Boulevard, Interstate 80, and UPRR activity.

Table 4.11-13
Transportation Noise Levels at Proposed Uses

Receptor Description	Noise Source and Predicted Noise Level (Ldn)				Standard	Impact? (Y/N)
	Interstate 80	Mace Blvd.	UPRR	Total		
Existing Plus Project						
Hotel	60 dB	62 dB	57 dB	65 dB	65 to 75 dB	No
North-South Commons	62 dB	52 dB	59 dB	65 dB	65 to 75 dB	No
The Oval	56 dB	56 dB	52 dB	60 dB	65 to 75 dB	No
East-West Commons	57 dB	56 dB	53 dB	61 dB	65 to 75 dB	No
Courtyard Plaza	59 dB	51 dB	55 dB	62 dB	65 to 75 dB	No

Source: j.c. brennan & associates, Inc., March 16, 2015.

The southern boundary of the proposed MRIC site is located approximately 130 feet, or further, from the UPRR line. Based on data in Table 4.11-5, the UPRR line was estimated to generate an exterior noise level of 69 dBA L_{dn} at a distance of 150 feet. Accordingly, railroad noise levels at the project site were predicted as presented in Table 4.11-13. As shown in the table, transportation noise levels are predicted to comply with the City of Davis exterior noise level standards for the proposed MRIC uses.

Interior Noise Levels

Based upon the Table 4.11-13 data, exterior noise levels are predicted to be 65 dB L_{dn}, or less at each of the proposed MRIC use areas. Typical construction measures provide a 25 dB exterior-to-interior noise level reduction. Therefore, interior noise levels are predicted to be less than 40 dB L_{dn} for all proposed MRIC uses. This would comply with the City's 45 dB L_{dn} standard for residential type uses (hotel) and 55 dB L_{dn} standard for office uses.

Mace Triangle

Based upon the General Commercial land use designation proposed for the Ikedas parcel and the easternmost agricultural parcel, the City has identified a future development potential for these parcels, consisting of approximately 45,901 square feet of research/office/R&D, and 25,155 square feet of ancillary retail. Because of the uncertainty of these uses, in terms of site placement and specific tenants, an acoustical study will need to be submitted in conjunction with a development plan application for this site.

Conclusion

As discussed above, the exterior noise levels expected of the MRIC would comply with the City's exterior noise level standards. However, future development of the Mace Triangle, depending upon the building location and tenant type, could expose new sensitive receptors to excessive transportation noise levels. With implementation of the following mitigation measure, traffic-related noise impacts to new sensitive receptors would be considered ***less than significant***.

Mitigation Measure(s)

MRIC – none

Mace Triangle

4.11-4 *In conjunction with the submittal of a final planned development and/or tentative map for the Mace Triangle, the applicant shall submit an acoustical analysis to the Department of Community Development and Sustainability. The acoustical analysis shall measure existing noise levels in the vicinity of the Mace Triangle site, as well as model the predicted noise levels for the scenarios determined to be appropriate by the certified noise consultant and the City of Davis Department of Community Development and Sustainability. The existing and predicted future exterior and interior noise levels shall account for any noise sources in the area, potentially including roadway, railway, and nearby outdoor uses. The acoustical analysis shall identify and classify the proposed uses in order to determine the appropriate noise level standards. If any uses identified in Table 19 of the General Plan Noise Chapter are proposed on-site, the acoustical analysis shall evaluate whether predicted transportation noise levels (traffic and train) would exceed the City of Davis' exterior and interior noise level criteria at such use areas. If the City's noise level criteria would be exceeded, the acoustical analysis shall include a detailed list of any noise attenuation measures needed for the proposed uses to comply with the City's exterior and interior noise level standards, for review and approval by the Department of Community Development and Sustainability.*

4.11-5 Operational noise. Based on the analysis below, the impact is *less-than-significant.*

Operational noise sources generated from the implementation of the proposed project in addition to the existing ambient noise could potentially affect the noise-sensitive receptors located in the project vicinity. Specifically, parking lot activities, HVAC units, and outdoor events at the Oval park are noise sources that could exceed the City of Davis's exterior noise level standards.

MRIC

Potential sources of operational noise resulting from development of the MRIC include commercial and office land uses, mechanical equipment, parking lots, and the Oval park.

Commercial and Office Land Uses

Commercial and office land use activities can produce noise levels which affect adjacent sensitive land uses. The noise sources can be continuous and may contain tonal components which may be annoying to individuals who live in the nearby vicinity. In addition, noise generation from fixed noise sources may vary based upon climatic conditions, time of day and existing ambient noise levels. The primary noise sources generally include HVAC equipment operation and parking lot use.

Mechanical Equipment

Heating, air conditioning, and ventilation equipment can be a primary noise source associated with commercial or office uses. The types of equipment are often mounted on roof tops, located on the ground, or located within mechanical rooms. The noise sources can take the form of fans, pumps, air compressors, chillers, or cooling towers. Noise levels from these types of equipment can vary significantly and generally range between 45 dB to 70 dB at a distance of 50 feet. Shielding from rooftop parapets substantially reduces noise from these types of equipment.

Based upon measurements conducted at various commercial and retail facilities, HVAC mechanical equipment is not expected to generate noise levels exceeding 45 to 50 dB L_{eq} at distances beyond 50 feet from building facades. The nearest residential property lines would be located approximately 800 feet or more from the nearest building façades. At this distance, HVAC noise would be approximately 20 to 25 dBA L_{eq}, or less. This would be well below the City's noise ordinance limit of 50 dBA L_{eq} during nighttime hours. Additionally, this would be well below existing ambient noise levels of 59 to 61 dB L_{eq}, as measured at the nearest sensitive receptors (Sites 5 and 6).

Parking Lots

Parking lot noise typically includes periods of conversation, doors slamming, engines starting and stopping and vehicle passage. j.c. brennan & associates, Inc. file data for parking lot activities was used to model the parking lot noise environment for the project site. An average SEL of 71 dB at a distance of 50 feet is typical for a passenger vehicle arrival and departure in a parking lot.

Based upon the project traffic study, the highest peak hour trips would occur during the A.M. peak hour. Gross A.M. peak trips for the project is 2,431 trips. Based upon this trip generation rate, the peak hour L_{eq} value for the total parking area of the project can be calculated as follows:

$$L_{eq} = SEL + 10 \log N_{eq} - 35.6, dB \text{ where:}$$

SEL is the mean SEL of the event, N_{eq} is the sum of the number of hourly events, and 35.6 is 10 times the logarithm of the number of seconds in an hour. Based upon the above formula, the hourly L_{eq} for parking lot activity would be 69.3 dBA L_{eq} at a distance of 50 feet. In reality, parking lot activity will be spread across the entire MRIC site, and not be concentrated in any one specific area. Therefore, to determine parking lot noise generation at the nearest off-site residential sensitive receptors, the total noise generation of 69.3 dBA L_{eq} at 50 feet is adjusted based upon the distance from the center of the MRIC site to the nearest residential receptors. The center of the MRIC site to the nearest residential receptors ranges from approximately 1,550 to 2,050 feet. Based upon these distances, parking lot noise levels would range between 37 to 40 dBA L_{eq} at the nearest receivers. This would be well below the City's noise ordinance limit of 55 dBA L_{eq} during daytime hours. Additionally, this would be well below existing ambient noise levels of 59 to 61 dB L_{eq}, as measured at the nearest sensitive receptors (Sites 5 and 6).

The Oval

The Oval park area would be privately maintained but made available for public uses. Other than general use by employees within the MRIC, and some use by the public, periodic concerts may be scheduled by innovation center businesses who would like to host events. These types of events are exempted by the City of Davis (Municipal Code Section 24.04.070) when approved through a registration process by the City. This process is outlined in Section 21.04.040 of the City's Municipal Code.

It should be noted that special events that require amplified noise may be allowed on-site. As noted in the Regulatory Context section, any amplified sound at an event with more than 100 people in attendance is required to obtain a Sound (Noise) Permit from the Davis Police Department prior to the noise event. Should the Permit be approved by the Police Department, the noise event would be subject to the noise requirements and other

limitations in order to ensure interior noise levels at nearby receptors are below acceptable levels.

Mace Triangle

Based upon the General Commercial land use designation proposed for the Ikedas parcel and the easternmost agricultural parcel, the City has identified a future development potential for these parcels, consisting of approximately 45,901 sf. of research/office/R&D, and 25,155 sf. of ancillary retail. At this time, no specific development plan has been proposed for the Mace Triangle. Based upon the proposed General Plan designation for the Mace Triangle, the types of uses are expected to be similar to the MRIC. Therefore, it is assumed that noise generation from future similar uses would be similar to the MRIC. Based upon the analysis presented above, noise levels from Mace Triangle operations are likely to be in the range of 20 to 40 dBA L_{eq} at the nearest receivers. This would be well below the City's noise ordinance limit of 55 dBA L_{eq} during daytime hours. Additionally, this would be well below existing ambient noise levels of 59 to 61 dB L_{eq}, as measured at the nearest sensitive receptors (Sites 5 and 6).

Conclusion

As discussed above, the proposed innovation center uses on the MRIC site would comply with the City of Davis exterior noise level limits without any additional noise control measures. In addition, while no development is proposed on the Mace Triangle at this time, should development occur on the Mace Triangle after receipt of additional discretionary approvals, the operational noise levels would not impact the nearest sensitive receptors, based upon comparison with the projected operational noise levels at the MRIC site. Therefore, potential impacts related to operational noise sources generated from the proposed project would be considered ***less than significant***.

Mitigation Measure(s)
None required.

4.11-6 Conflict, or create an inconsistency, with any applicable plan, policy, or regulation adopted for the purpose of avoiding or mitigating environmental effects related to noise. Based on the analysis below, the impact is *less than significant.*

In order to further demonstrate the project's consistency with any applicable plan, policy, or regulation adopted for the purpose of avoiding or mitigating environmental effects related to noise, Table 4.11-14 includes a list of the relevant policies and a corresponding discussion of how the project is consistent with each policy. As demonstrated in the table, the proposed project is generally consistent with the applicable plan, policy, or regulation adopted for the purpose of avoiding or mitigating environmental effects related to noise. Therefore, the project would have a ***less-than-significant*** impact regarding policy and regulation consistency.

Mitigation Measure(s)
None required.

Table 4.11-14
Noise Regulations and Policy Discussion

Regulation/Policy	Project Consistency
Chapter 21, Noise, of the Davis General Plan	
NOI 1.1 Minimize vehicular and stationary noise sources, and noise emanating from temporary activities.	Implementation of Mitigation Measure 4.11-1, which requires compliance with City of Davis Noise Ordinance Section 24.02.040, would ensure that intermittent noise emanating from construction equipment would result in a less-than-significant impact with respect to resulting in a substantial temporary or periodic increase in ambient noise levels in the project vicinity. In addition, the project has been designed to minimize vehicular use and, thus, noise resulting from on-site vehicles. The circulation network would integrate various strategies that reduce vehicle miles traveled from single-occupant automobile trips. For example, the MRIC site will be linked to the existing pedestrian trails system and regional bike trail. With respect to bike path connectivity, the project includes a bike path, within the 50-foot transition zone of the agricultural buffer, which would connect to the existing Class II bike lane on CR 32A, at the project's southeastern corner. In addition, bicycle parking will be provided near all entrances to buildings and a bike storage and repair area will be provided near the transit center to allow for safe storage of bikes and to facilitate any bike repairs that may be needed by users. The strategies would minimize vehicular noise in and around the project site.
NOI 1.2 Discourage the use of sound walls whenever alternative mitigation measures are feasible, while also facilitating the construction of sound walls where desired by the neighborhood and there is no other way to reduce noise to acceptable exterior levels shown in Table 19 [Table 411-7].	Construction of sound walls would not be required for the project. It should be noted that the acoustical analysis required by Mitigation Measure 4.11-4 may result in mitigation which requires sound walls at the Mace Triangle Site. Should sound walls be ultimately required, the construction of the walls would be subject to review and approval by the City of Davis Community Development and Sustainability Department.
NOI 2.1 Take all technically feasible steps to ensure that interior noise levels can be maintained at the levels shown in Table 20 [Table 4.11-8].	Based upon the Table 4.11-13 data, exterior noise levels are predicted to be 65 dB L_{dn}, or less at each of the proposed project use areas. Typical construction measures provide a 25 dB exterior-to-interior noise level reduction. Therefore, interior noise levels are predicted to be less than 40 dB L_{dn} for all proposed uses. This would comply with the City's 45 dB

(Continued on next page)

Table 4.11-14 Noise Regulations and Policy Discussion	
Regulation/Policy	**Project Consistency**
	L_{dn} standard for residential type uses (hotel) and 55 dB L_{dn} standard for office uses.
Noise Ordinance, Section 24, of the Davis Municipal Code	
24.02.020 Noise limits	As shown in the above analysis, the project would comply with the noise limits set by Section 24.02.020 of the Davis Municipal Code. Specifically, the maximum noise levels for the commercial/industrial/core commercial land use would not be exceeded by the project.