Noise Analysis for the Mt. San Antonio College Facilities Master Plan Update and Physical Education Projects

Report #16-008NZ
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1.0 EXISTING SETTING

1.1 Project Description

Mt. San Antonio College is located in the City of Walnut on over 420 acres. It has an estimated 2014-2015 fall enrollment of 35,986 students (headcount). The college has proposed a 2015 Facilities Master Plan Update (FMPU) and the corresponding Land Use Plan is shown as Exhibit 1. The major change from the 2012 FMP is the re-design of the athletic facilities south of Temple Avenue and east of Bonita Avenue and is shown in Exhibit 2. The existing stadium will be demolished and a new stadium built onsite. Other changes for the 2015 FMPU include the relocation of the Public Transportation Center to Lot D3, and expanded Wildlife Sanctuary and Open Space area, and a pedestrian bridge across Temple Avenue connecting the Physical Education Complex to Lot F. The net increase in square footage at 2015 FMPU buildout is approximately 500,000 gross square feet. Special annual events will continue to be held on campus that include the Mt. SAC/Brooks Relays and the Mt. SAC Cross-Country Invitational (XC Invite). The District is also filing an application to host the 8-day 2020 Olympic Track & Field Trials in late July or August 2020.

This report assesses the potential noise impacts of the project on the surrounding land uses. Construction noise, stadium noise, parking lot noise, and other on-site activity noise are considered for their potential impact.

1.2 Background Information on Noise

1.2.1 Noise Criteria Background

Sound is technically described in terms of the loudness (amplitude) of the sound and frequency (pitch) of the sound. The standard unit of measurement of the loudness of sound is the decibel (dB). Decibels are based on the logarithmic scale. The logarithmic scale compresses the wide range in sound pressure levels to a more usable range of numbers in a manner similar to the Richter scale used to measure earthquakes. In terms of human response to noise, a sound 10 dB higher than another is judged to be twice as loud; and 20 dB higher four times as loud; and so forth. Everyday sounds normally range from 30 dB (very quiet) to 100 dB (very loud).

Since the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear. Community noise levels are measured in terms of the "A-weighted decibel," abbreviated dBA. Exhibit 3 provides examples of various noises and their typical A-weighted noise level.

Exhibit 1 - Land Use Plan for the 2015 FMPU

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Exhibit 2 - Physical Education Projects

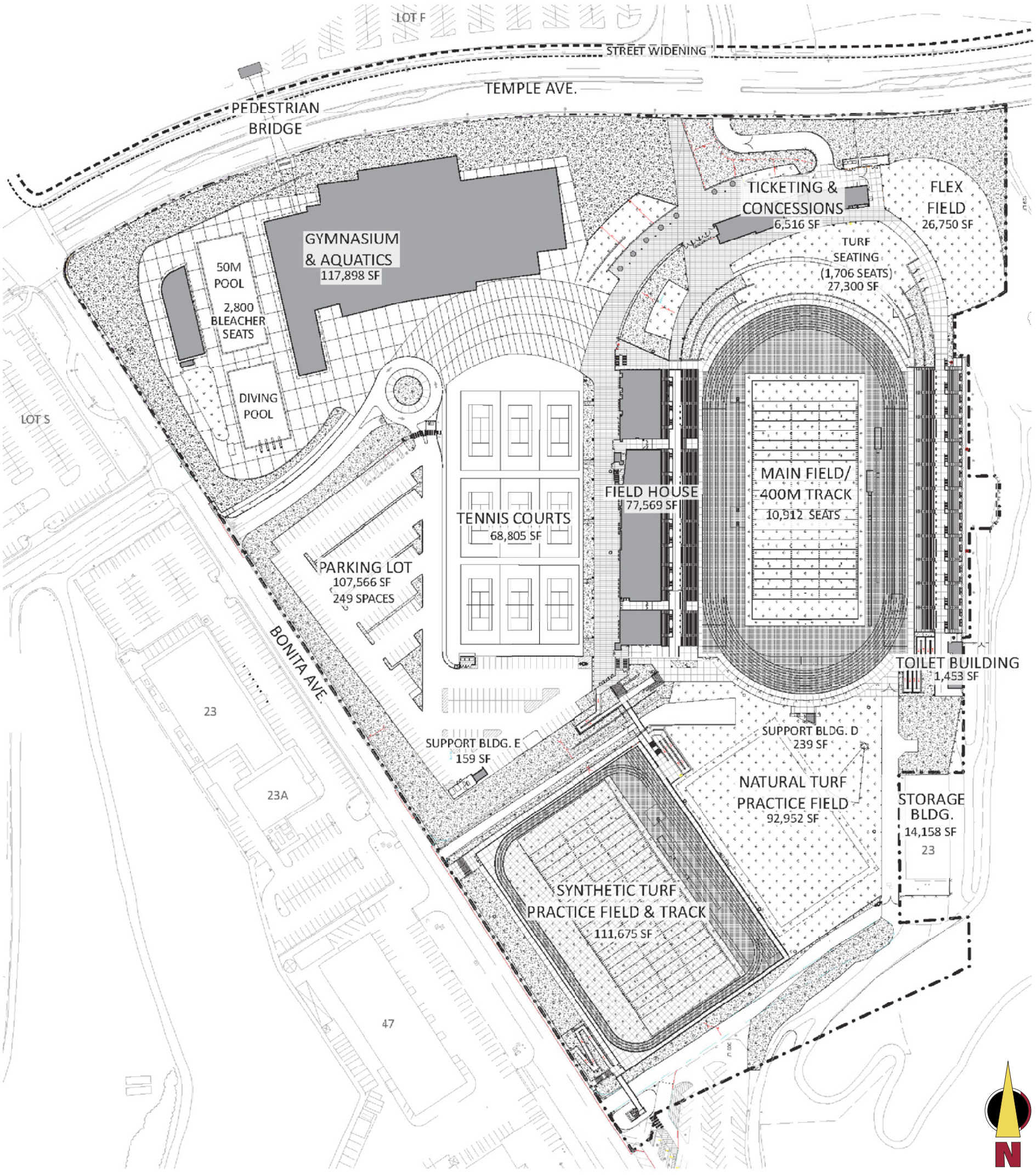

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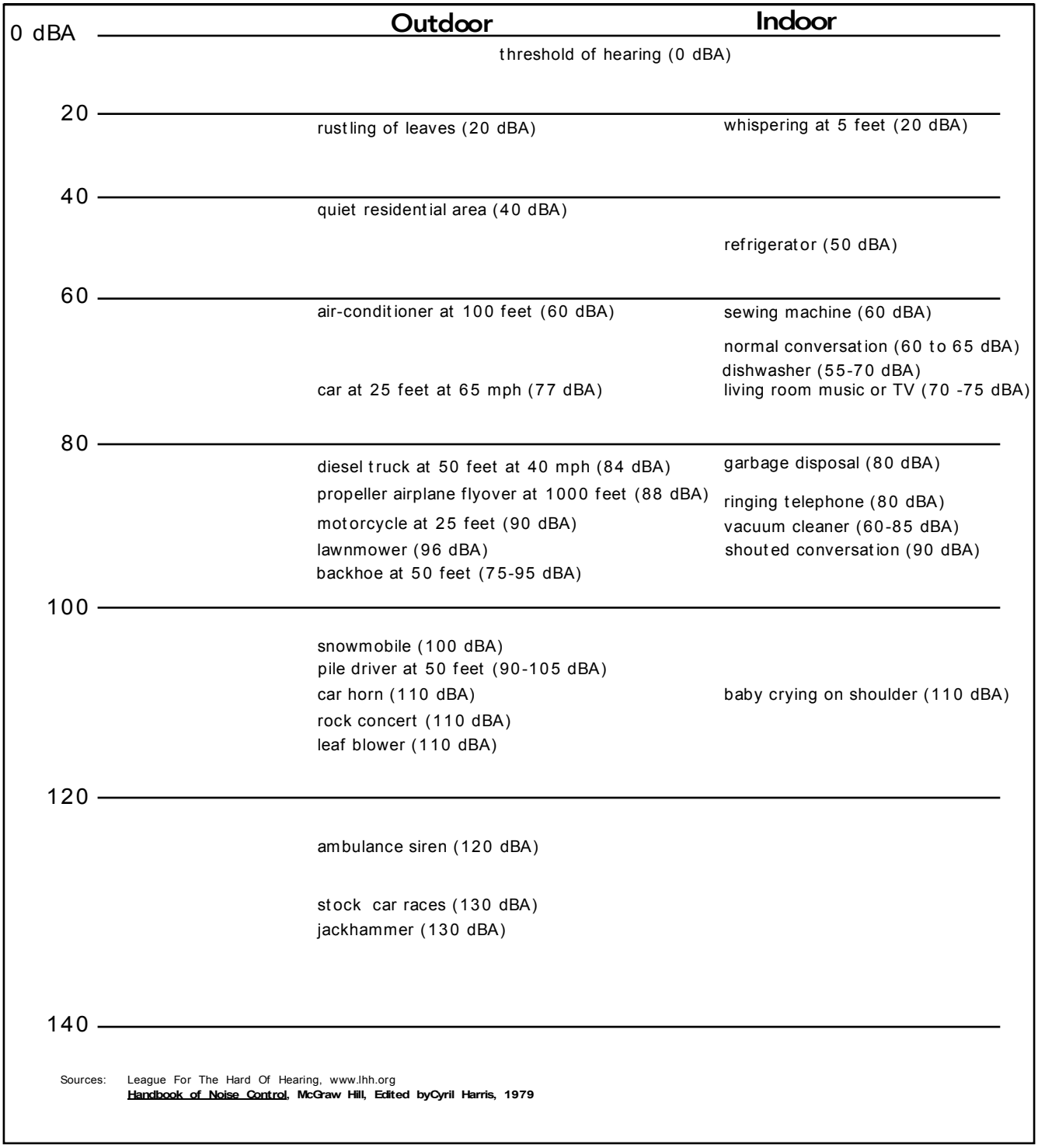
Exhibit 3 - Typical Noise Levels



Sources: League For The Hard Of Hearing, www.lhh.org
Handbook of Noise Control, McGraw Hill, Edited byCyril Harris, 1979

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Sound levels decrease as a function of distance from the source as a result of wave divergence, atmospheric absorption and ground attenuation. As the sound wave form travels away from the source, the sound energy is dispersed over a greater area, thereby dispersing the sound power of the wave. Atmospheric absorption also influences the levels that are received by the observer. The greater the distance traveled, the greater the influence and the resultant fluctuations. The degree of absorption is a function of the frequency of the sound as well as the humidity and temperature of the air. Turbulence and gradients of wind, temperature and humidity also play a significant role in determining the degree of attenuation. Intervening topography can also have a substantial effect on the effective perceived noise levels.

Noise has been defined as unwanted sound and it is known to have several adverse effects on people. From these known effects of noise, criteria have been established to help protect the public health and safety and prevent disruption of certain human activities. This criteria is based on such known impacts of noise on people as hearing loss, speech interference, sleep interference, physiological responses and annoyance. Each of these potential noise impacts on people are briefly discussed in the following narratives:

Hearing loss is not a concern in community noise situations of this type. The potential for noise induced hearing loss is more commonly associated with occupational noise exposures in heavy industry or very noisy work environments. Noise levels in neighborhoods, even in very noisy airport environs, are not sufficiently loud to cause hearing loss.

Speech interference is one of the primary concerns in environmental noise problems. Normal conversational speech is in the range of 60 to 65 dBA and any noise in this range or louder may interfere with speech. There are specific methods of describing speech interference as a function of distance between speaker and listener and voice level.

Sleep interference is a major noise concern for traffic noise. Sleep disturbance studies have identified interior noise levels that have the potential to cause sleep disturbance. Note that sleep disturbance does not necessarily mean awakening from sleep, but can refer to altering the pattern and stages of sleep.

Physiological responses are those measurable effects of noise on people that are realized as changes in pulse rate, blood pressure, etc. While such effects can be induced and observed, the extent is not known to which these physiological responses cause harm or are sign of harm.

Annoyance is the most difficult of all noise responses to describe. Annoyance is a very individual characteristic and can vary widely from person to person. What one person considers tolerable can be quite unbearable to another of equal hearing capability.

1.2.2 Noise Assessment Metrics

The description, analysis and reporting of community noise levels around communities is made difficult by the complexity of human response to noise and the myriad of noise metrics that have been developed for describing noise impacts. Each of these metrics attempts to quantify noise levels with respect to community response. Most of the metrics use the A-

Weighted noise level to quantify noise impacts on humans. A-weighting is a frequency weighting that accounts for human sensitivity to different frequencies.

Noise metrics can be divided into two categories: single event and cumulative. Single-event metrics describe the noise levels from an individual event such as an aircraft fly over or perhaps a heavy equipment pass-by. Cumulative metrics average the total noise over a specific time period, which is typically 1 or 24-hours for community noise problems. For this type of analysis, cumulative noise metrics will be used.

Several rating scales have been developed for measurement of community noise. These account for: (1) the parameters of noise that have been shown to contribute to the effects of noise on man, (2) the variety of noises found in the environment, (3) the variations in noise levels that occur as a person moves through the environment, and (4) the variations associated with the time of day. They are designed to account for the known effects of noise on people described previously. Based on these effects, the observation has been made that the potential for a noise to impact people is dependent on the total acoustical energy content of the noise. A number of noise scales have been developed to account for this observation. Two of the predominate noise scales are the: Equivalent Noise Level (Leq) and the Community Noise Equivalent Level (CNEL). These scales are described in the following paragraphs.

Leq is the sound level corresponding to a steady-state sound level containing the same total energy as a time-varying signal over a given sample period. Leq is the "energy" average noise level during the time period of the sample. Leq can be measured for any time period, but is typically measured for 1 hour. It is the energy sum of all the events and background noise levels that occur during that time period.

CNEL, Community Noise Equivalent Level, is the predominant rating scale now in use in California for land use compatibility assessment. The CNEL scale represents a time weighted 24-hour average noise level based on the A-weighted decibel. Time weighted refers to the fact that noise that occurs during certain sensitive time periods is penalized for occurring at these times. The evening time period (7 p.m. to 10 p.m.) penalizes noises by 5 dBA, while nighttime (10 p.m. to 7 a.m.) noises are penalized by 10 dBA. These time periods and penalties were selected to reflect people's increased sensitivity to noise during these time periods. A CNEL noise level may be reported as a "CNEL of 60 dBA," "60 dBA CNEL," or simply "60 CNEL." Typical noise levels in terms of the CNEL scale for different types of communities are presented in Exhibit 4.

L(%) (also sometimes represented as L(N)) is a statistical method of describing noise which accounts for variance in noise levels throughout a given measurement period. L (%) is a way of expressing the noise level exceeded for a percentage of time in a given measurement period. For example since 15 minutes is 25% of one hour, L(25) is the noise level that is equal to or exceeded for 15 minutes in a one-hour period. It is L(%) that is commonly used in Noise Ordinance standards. For example many daytime County and City Noise Ordinances use an ordinance standard of 55 dBA for 30 minutes per hour or an L(50) level of 55 dBA. In other words, the Noise Ordinance states that no noise level should exceed 55 dBA for more that fifty percent of a given period.

1.3 Noise Criteria

Mt. San Antonio College is exempt from City zoning and ordinances. The District's noise standards area presented below. The California guidelines for land use compatibility are then

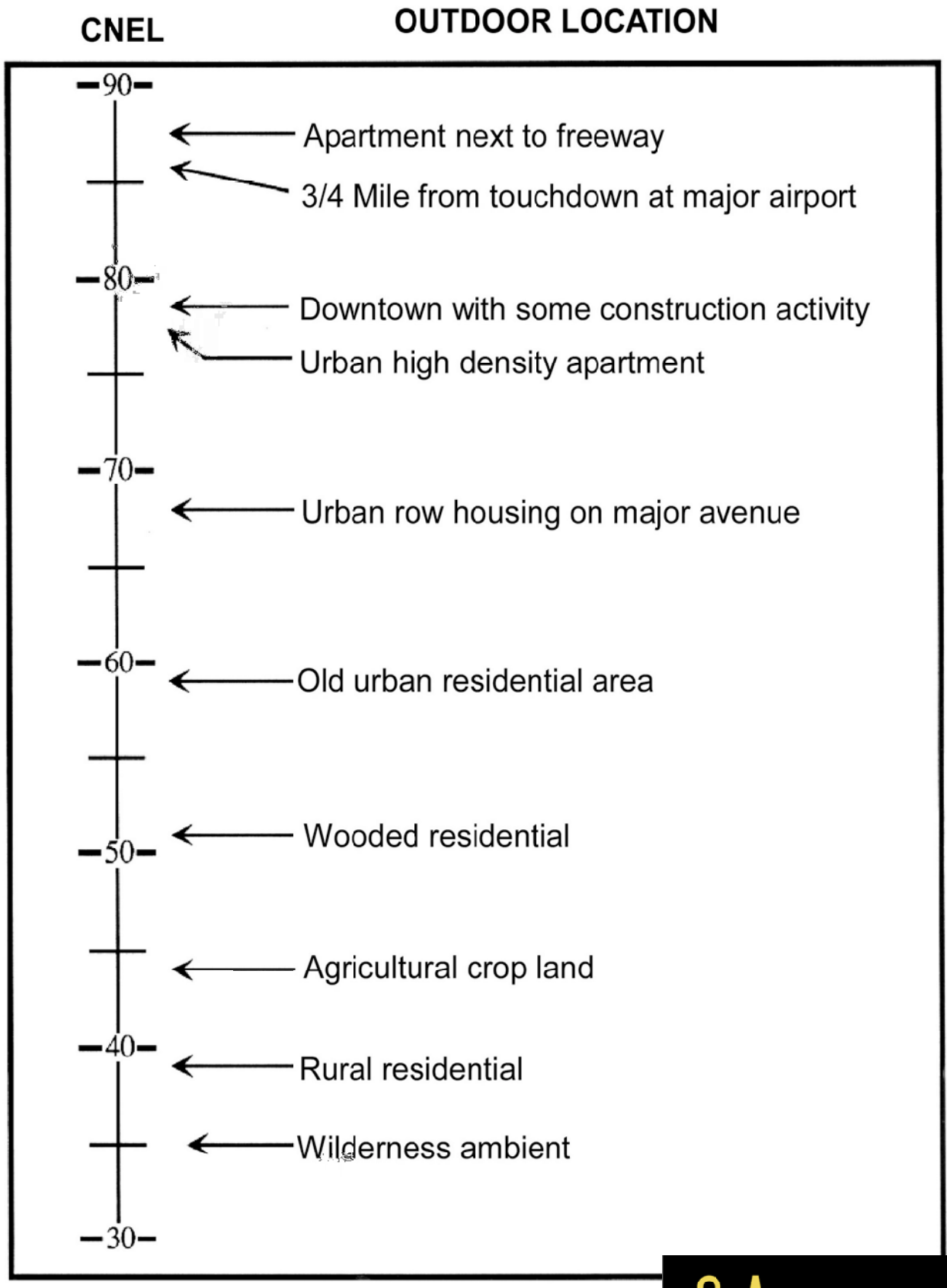
presented followed by the City of Walnut's Noise Ordinance. Although the College is not required to comply with the Walnut regulations, they are presented to reflect norms in the region for noise control.

1.3.1 District Requirements

The Mt. San Antonio Community College District is exempt from City zoning and the City's Noise Ordinance pursuant to California Government Code 53096. The District complies with Department of the State Architect (DSA) and California Educational Code interior noise requirements for classroom facilities. The District adopted the following mitigation measure to reduce noise exposure from construction:

5a. All construction and general maintenance activities, except in emergencies or special circumstances, shall be limited to the hours of 7 am to 7 pm Monday-Saturday. Staging areas for construction shall be located away from existing off-site residences. All construction equipment shall use properly operating mufflers. These requirements shall be included in construction contracts and implemented. Facilities Planning & Management shall monitor compliance.

Exhibit 4 - Examples of CNEL Noise Levels



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1.3.2 California Compatibility Guidelines

The State of California Guidelines, published by the Department of Health, provide guidance for the acceptability of different land uses. The compatibility guidelines are reproduced here in Exhibit 5. The guidelines can be used to evaluate the compatibility of the proposed land uses with the noise environment. The guidelines show compatibility of various land uses with different noise environments. The guidelines show that school uses are normally acceptable in noise environments up to 70 CNEL.

1.3.3 City of Walnut Noise Ordinance

The Noise Ordinance regulates noise on one property impacting a neighboring property. Typically, it sets limits on noise levels that can be experienced at the neighboring property. The Noise Ordinance is part of the City's Code (Title 4, Division 6 – Noise Control) and is enforceable throughout the City.

The Walnut Noise Ordinance (Chapter 16B of the Municipal Code) establishes exterior and interior noise standards that protect residential, commercial, and industrial areas. Section 16B-5, quoted below, presents the City's Noise Ordinance Standards.

Section 16B-5
Citations for violations of the City's Noise Ordinance are hereby authorized when:

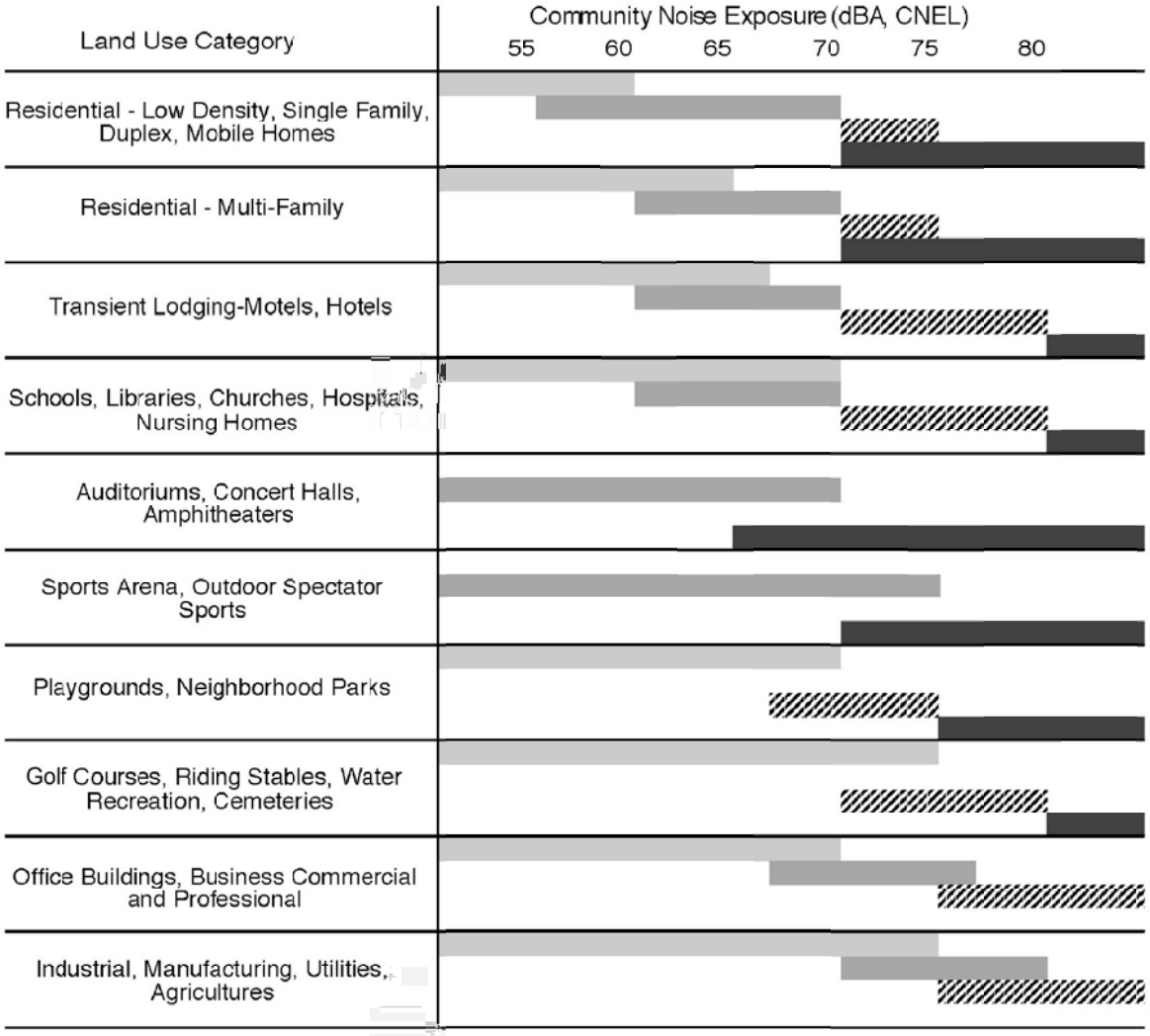
(a) Exterior noise levels shall apply to all receptor properties as follows, unless otherwise noted:

Receptor Land Use	Time of Day	Noise Level
Residential	11 p.m. to 7 a.m.	45 dB
	7 a.m. to 11 p.m.	50 dB
Commercial	11 p.m. to 7 a.m.	45 dB
	7 a.m. to 11 p.m.	50 dB
Industrial	Anytime	70 dB

(b) If the measurement location is on a boundary property between two different zones, exterior noise level utilized in subsection (a) of this section to determine the exterior standard shall be the daytime exterior noise level of the subject receptor property.

Exhibit 5 - Compatibility Matrix

Land Use/Noise Compatibility Guidelines



Normally Acceptable Specified land use is satisfactory based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.

Conditionally Acceptable - New construction or development shall be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply system of air conditioning, will normally suffice.

Normally Unacceptable New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable New construction or development should generally not be undertaken.

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The noise scale associated with the noise level limits presented in Section 16B-5 of the City's Noise Ordinance is not indicated. If one assumes that the levels specified in the Noise Ordinance were the levels that could not be exceeded at any time, the Ordinance would be overly restrictive and almost any commercial use adjacent to a residential use would likely violate the Noise Ordinance limits on a regular basis. It is likely that the City's Noise Ordinance limits are intended to duplicate the County of Los Angeles Noise Ordinance limits. The County's Noise Ordinance base limits are the same as specified in the City's Noise Ordinance. In the County's Ordinance, the base noise level limits are noise levels that cannot be exceeded for 30 minutes in one hour (dBA L50).

The City's Noise Ordinance (Article II Regulations, Section 16B-3(a)) exempts construction noise from the noise level limits between the hours of 7:00 a.m. and 8:00 p.m. on weekdays. Construction is not allowed on holidays, Saturdays, and Sundays without special approvals or exceptions. If construction occurs outside the permitted hours, then the construction activities would be subject to the limits in Section 16B-5.

1.4 Existing Noise Measurements

Noise measurements have been made in the community surrounding the campus. Noise measurements in the community during normal circumstances were made and the results are presented in Section 1.4.1. Additional measurements were made during a football game at the Hilmer Stadium and these results are presented in Section 1.4.2.

1.4.1 General Community Noise Measurements

Noise levels were recently measured for many areas surrounding Mt. San Antonio College, and are reported in "Ambient Noise Levels," (memo to Ms. Mikaela Klein, by Greve & Associates, dated August 23, 2016). All measured sites are presented in Exhibit 6. Details on the methodology for the measurements can be found in the above referenced document. Table 1 shows the results of the measurements. A detailed description of the noise environment for each site is presented after the table.

Exhibit 6 - Noise Measurement Sites

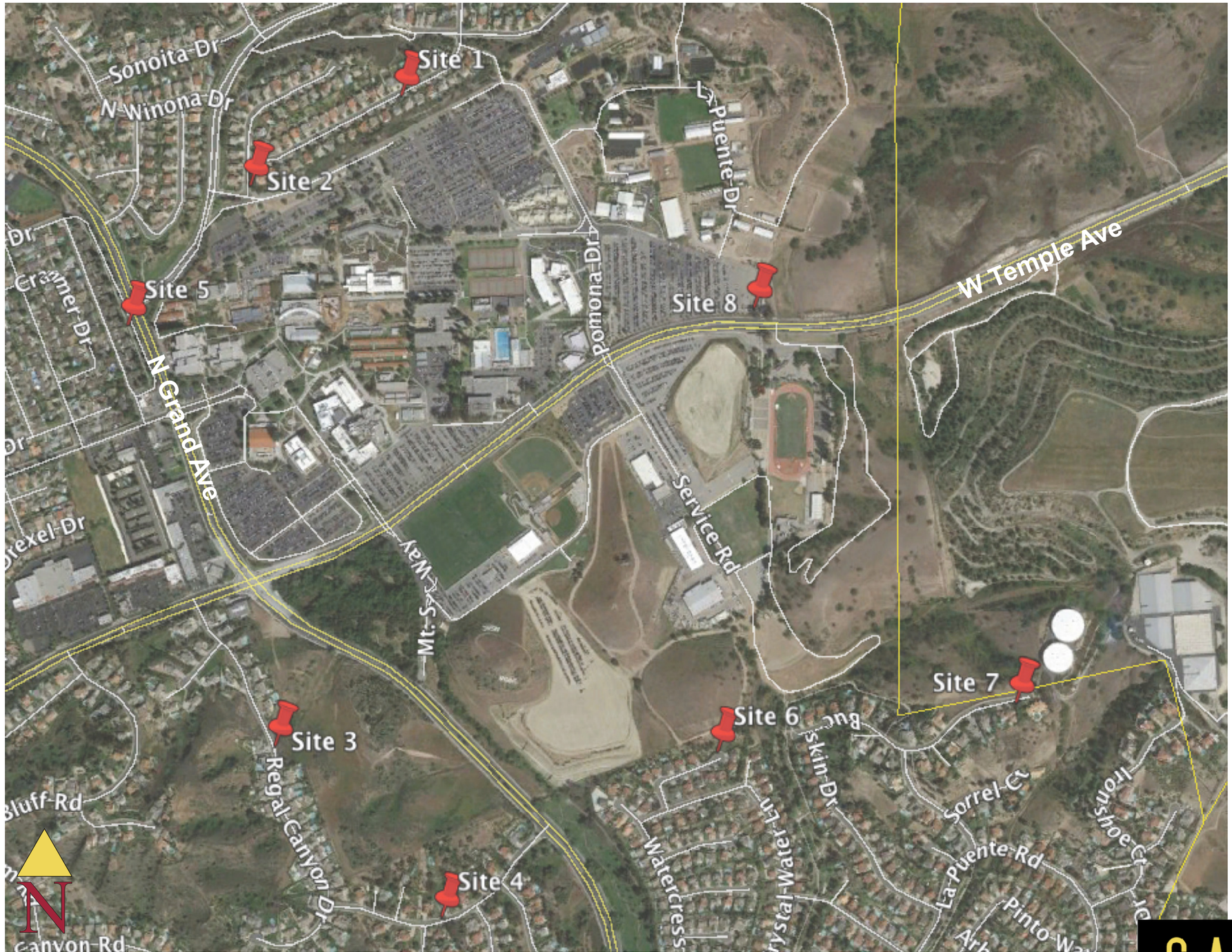

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Table 1 Noise Measurement Results (dBA)

	Site 1	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8
Start Time	10:22a	10:52a	1:35p	2:10p	11:24a	12:33p	12:59p	2:40p
Leq	52.7	55.7	46.9	51.8	61.6	43.7	50.1	59.2
Lmax	73.6	72.4	66.5	70.9	71.4	56.9	68.1	68.7
L1.7	63.3	67.8	57.4	64.5	68.6	50.8	62.3	65.9
L8.3	53.1	57.6	47.6	51.2	66.0	46.5	50.4	64.0
L25	46.0	51.2	43.1	45.9	62.5	43.6	45.4	60.8
L50	42.2	46.7	41.3	44.2	59.8	41.7	42.5	56.4
L90	39.2	44.2	38.9	40.1	52.6	39.2	38.8	46.3
Lmin	37.4	42.4	37.4	37.6	45.5	36.4	37.7	42.6

The noise levels for all sites were typical of urban and suburban areas. None of the sites had excessively high noise levels or exceptional low noise levels. The average noise levels (Leq) ranged from 47 dBA to 62 dBA. The noise was mainly generated by traffic on the local roadways. Maximum noise levels were usually caused by a louder vehicle (e.g., trucks) or an aircraft overflight. Specific notes for each site are presented below.

Site 1: Residence at 21034 Granite Wells Road.
Site 1 is located in front of the residence at 21034 Granite Wells Road. (The rear yard of this site was measurement Site 1 for the 2008 noise study for the Master Plan Update EIR.) The dominant source of noise at this site was traffic on Granite Wells Road. The Lmax at Site 1 was 73.6 dBA and was due to a loud truck. The Leq at this site was 52.7 dBA, which is typical for a suburban area. Other sources of noise in the area included jet aircraft high overhead, birds in nearby trees, and low general aviation aircraft associated with Brackett Field Airport.

Site 2: Residence at 20905 Granite Wells Road.
Site 2 is located in line with the rear yard of the residence at 20905 Granite Wells Road along Stoddard Wells Road. (The rear yard of this site was measurement Site 2 for the 2008 noise study for the Master Plan Update EIR.) The dominant source of noise at this site was traffic on the local roadways. The Lmax at Site 1 was 72.4 dBA and was due to a loud vehicle. The Leq at this site was 55.7 dBA, which is typical for a suburban area. Other sources of noise in the area included jet aircraft high overhead, birds in nearby trees, a helicopter, and low general aviation aircraft associated with Brackett Field Airport.

Site 3: Residence at 1131 Regal Canyon Drive.
Site 3 is located across the street from the residence at 1131 Regal Canyon Drive. This site is next to the West Parcel Solar site. A portion of North Grand Avenue can be seen from this

site, which is typical for many homes along the West Parcel Solar site. The traffic noise from North Grand Avenue was very faint. This site had an average noise level (Leq) of 46.9 dBA, which is typical for a quiet suburban area. High jet aircraft, cars on Regal Canyon Drive, and low levels of noise from North Grand Avenue were the primary sources of noise.

Site 4: Residence at 21107 Stonybrook Drive.

Site 4 is located in front of the residence at 21107 Stonybrook Drive. This area is also next to the West Parcel Solar site. The small amount of traffic on Stonybrook Drive was the most significant source of noise in the area. This site had an average noise level (Leq) of 51.8 dBA. Other sources of noise experienced in the area included high jet aircraft, wind in the trees, birds, and air conditioners.

Site 5: Residence at 1433 Kem Way.

Site 5 is located in front of the residence at 1433 Kem Way. Kem Way is a frontage road that runs parallel to North Grand Avenue. The dominant source of noise at this site was traffic, including buses, on North Grand Avenue. This was the loudest site measured with an Leq 61.6 dBA, which is typical for an urban area. Other sources of noise in the area were very minor compared to the traffic on North Grand Avenue.

Site 6: Residence at 21647 Sleepy Hollow Court.

Site 6 is located in front of the residence at 21647 Sleepy Hollow Court. This area backs up to Mt. San Antonio College. Sleepy Hollow Court is a dead-end road that has very little traffic. This site had the lowest noise level and the Leq at this site was 43.7 dBA, which is typical for a quiet suburban area. A car on Sleepy Hollow Court, minor construction at a residence a few houses away, and birds were the main sources of noise. No noise from the college campus was heard.

Site 7: Residence at 21880 Buckskin Drive.

Site 7 is located in front of the residence at 21880 Buckskin Drive. This area also is adjacent to Mt. San Antonio College. Buckskin Drive is a dead-end road. This site had an average noise level (Leq) of 50.1 dBA, which is typical for a suburban area. High jet aircraft, distant traffic, a low general aviation aircraft, and a residential air conditioner were heard during the measurements. No noise from the college campus was heard.

Site 8: Stadium Parking Lot.

Site 8 was the only site monitored that was not representative of a residential neighborhood. Site 8 is located in the southeast corner of the parking lot across West Temple Avenue from the existing stadium. The site is dominated by traffic noise from West Temple Avenue. The site had an average (Leq) noise level of 59.2 dBA. Some low flying general aviation aircraft were also heard during the measurements.

1.4.2 Noise Measurements for Football Game

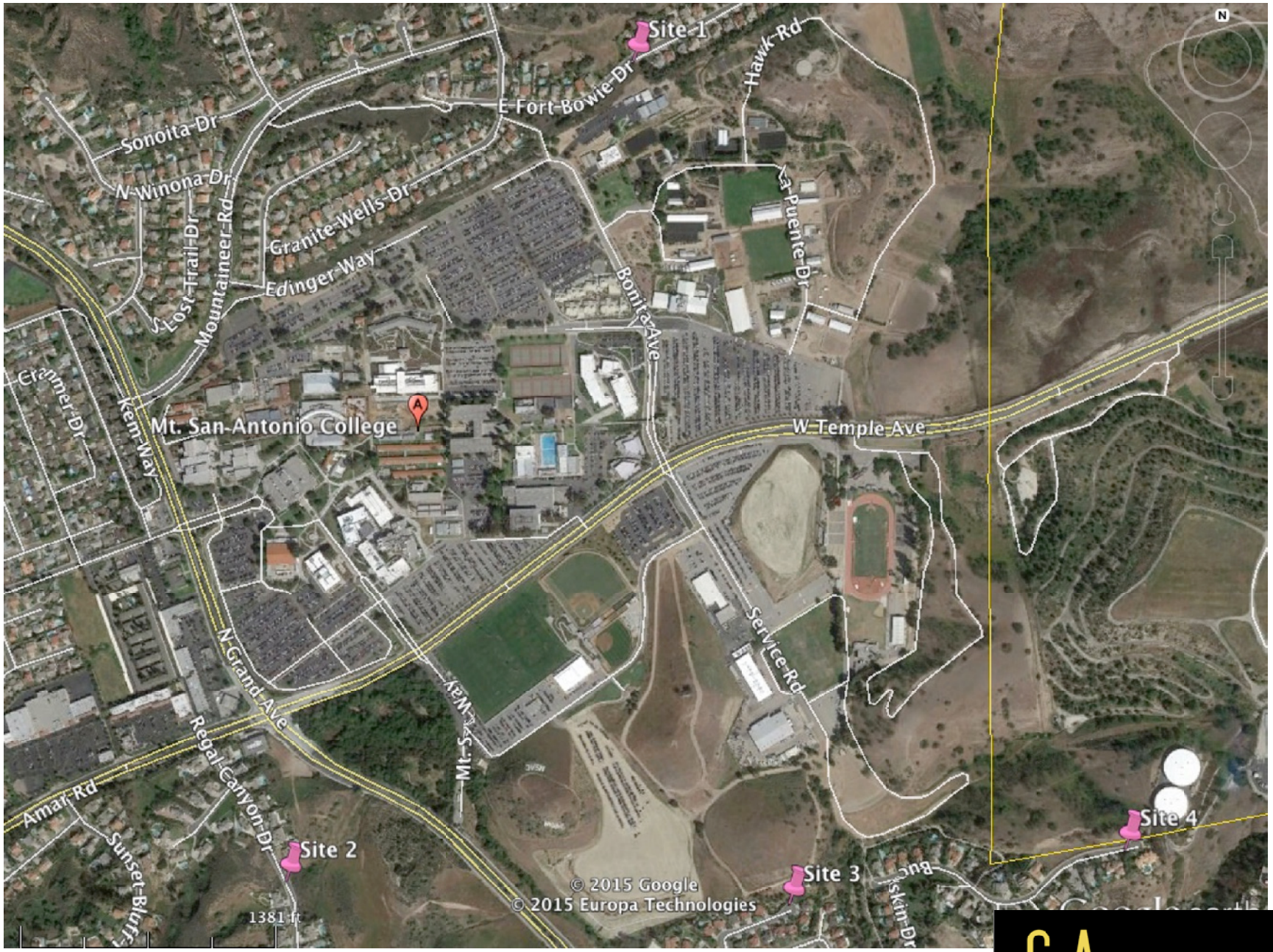
Noise levels in the surrounding community during a football game were measured. The methodology and results are presented in "Stadium Noise Measurements – Hilmer Lodge Stadium," (memo to Ms. Mikaela Klein, Mt. San Antonio College, October 27, 2015). The sites that were monitored are shown in 0, and Table 1 shows the results of the measurements.

Table 2 Noise Measurement Results (dBA)

	Site 4	Site 4	Site 1	Site 1	Site 2	Site 2	Site 3	Site 3
Start Time	6:17p	6:35p	7:02p	7:20p	7:45p	8:01p	8:37p	8:52p
Leq	42.8	44.5	49.3	49.1	49.5	48.6	41.4	42.4
Lmax	53.7	61.4	68.8	65.9	65.8	65.3	55.3	56.5
L1.7	49.7	52.9	60.1	60.3	61.2	60.1	50.0	47.7
L8.3	45.9	48.4	50.6	52.4	49.5	49.3	44.4	45.2
L25	43.3	43.2	45.2	44.7	46.2	46.0	40.9	43.1
L50	41.1	41.3	42.8	41.8	44.4	43.9	39.1	41.1
L90	38.7	37.6	39.9	39.9	41.6	40.5	36.8	38.2
Lmin	36.4	35.1	38.7	38.3	38.9	38.3	34.5	36.0

At Site 4, the PA system and occasionally the crowd could be heard. At the other three sites, stadium noise could not be heard. The game was still underway when the measurements ended. It was estimated that west stand of the stadium was filled to about 45% of capacity and that the east stand had 15% of capacity, or an estimated attendance of approximately 4,500.

Exhibit 7 - Noise Measurement Sites for Football Game



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1.5 Existing Roadway Noise Levels

The highway noise levels projected in this report were computed using the Highway Noise Model published by the Federal Highway Administration ("FHWA Highway Traffic Noise Prediction Model," FHWA-RD-77-108, December, 1978). The FHWA Model uses traffic volume, vehicle mix, vehicle speed, and roadway geometry to compute the "equivalent noise level." A computer code has been written which computes equivalent noise levels for each of the time periods used in the calculation of CNEL. Weighting these noise levels and summing them results in the CNEL for the traffic projections used. CNEL contours are found by iterating over many distances until the distances to the 60, 65, 70, and 75 CNEL contours are found.

Average daily traffic volumes (ADTs) were provided by the traffic engineer for the project (Deepak Kaushik, P.E., Iteris, January, 2016). Traffic volumes and posted speed limits were used with the FHWA Model to estimate the noise levels in terms of CNEL. The distances to the CNEL contours for the roadways in the vicinity of the project site are given in Table 3. These numbers represent the distance from the centerline of the road to the contour value shown. Note that the values given in Table 3 do not take into account the effect of any noise barriers or topography that may affect ambient noise levels.

Table 3 Existing Traffic Noise Levels

Roadway Segment	Extent of Segment	CNEL @ 100' †	Distance To CNEL Contour from Centerline of Roadway (feet) 70 CNEL	65 CNEL	60 CNEL
Grand Ave	North of I-10 WB Ramps	66.9	62	133	288
Grand Ave	between I-10 WB/EB Ramps	66.8	60	131	282
Grand Ave	between I-10 EB Ramps and Cameron Ave	66.2	56	120	260
Grand Ave	between Cameron Ave and Mountaineer Rd	67.5	68	147	317
Grand Ave	between Mountaineer Rd and San Jose Hills Rd	66.4	57	123	266
Grand Ave	between San Jose Hills Rd and Temple Ave	66.4	57	124	268
Grand Ave	between Temple Ave and La Puente Rd	69.1	86	186	402
Grand Ave	between La Puente Rd and Valley Blvd	69.5	92	200	431
Grand Ave	between Valley Blvd and Baker Pkwy	68.9	84	182	393
Grand Ave	between Baker Pkwy and SR-60 EB Ramps	68.9	84	182	392
Grand Ave	between SR-60 EB/WB Ramps	68.3	76	165	357
Grand Ave	South of SR-60 WB Ramps	67.6	69	148	320
Nogales St	North of Amar Rd	47.0	RW	RW	13
Nogales St	South of Amar Rd	65.4	49	105	227

Table 3 Continued – Existing Traffic Noise Levels

Roadway Segment	Extent of Segment	CNEL @ 100' †	Distance To CNEL Contour from Centerline of Roadway (feet) 70 CNEL	65 CNEL	60 CNEL
Lemon Ave	South of Amar Rd	58.6	17	37	81
Mt SAC Wy	North of Temple Ave	55.7	11	23	51
Mt SAC Wy	South of Temple Ave	51.2	RW	RW	26
Bonita Ave	North of Temple Ave	58.1	16	34	74
Bonita Ave	South of Temple Ave	54.7	RW	20	44
Lot F	North of Temple Ave	38.2	RW	RW	RW
Valley Ave	North of Temple Ave	65.6	50	109	236
Valley Ave	South of Temple Ave	65.6	51	109	236
SR-57 SB Off Ramp	North of Temple Ave	67.0	63	136	294
SR-57 SB On Ramp	North of Temple Ave	55.7	RW	23	51
SR-57 NB Off Ramp	South of Temple Ave	65.2	47	102	221
SR-57 NB On Ramp	South of Temple Ave	63.0	33	73	157
Amar Rd	West of Nogales St	67.8	70	152	329
Amar Rd	between Nogales St and Lemon Ave	66.5	58	126	272
Amar Rd	between Lemon Ave and Grand Ave	66.5	58	125	270
Temple Ave	between Grand Ave and Mt SAC Wy	65.5	50	108	232
Temple Ave	between Mt SAC Wy and Bonita Ave	65.1	47	101	219
Temple Ave	between Bonita Ave and Lot F	67.6	69	149	321
Temple Ave	between Lot F and Valley Blvd	67.7	70	151	326
Temple Ave	between Valley Blvd and SR-57 SB Ramps	66.8	61	131	284
Temple Ave	between SR-57 SB/NB Ramps	68.4	78	169	364
Temple Ave	East of SR-57 NB Off Ramp	68.0	74	159	343
I-10 WB Ramps	West of Grand Ave	65.8	52	113	244
I-10 EB Ramps	West of Grand Ave	64.3	41	89	192
Cameron Ave	West of Grand Ave	62.9	33	72	155
Mountaineer Rd	East of Grand Ave	57.2	14	30	65
San Jose Hills Rd	West of Grand Ave	54.9	RW	21	45

Table 3 Continued – Existing Traffic Noise Levels

Roadway Segment	Extent of Segment	CNEL @ 100'*	Distance To CNEL Contour from Centerline of Roadway (feet) 70 CNEL	65 CNEL	60 CNEL
San Jose Hills Rd	East of Grand Ave	55.1	RW	21	47
La Puente Rd	West of Grand Ave	62.0	29	62	135
La Puente Rd	East of Grand Ave	55.6	RW	23	50
Valley Ave	West of Grand Ave	69.6	93	202	435
Valley Ave	East of Grand Ave	69.4	90	195	420
Baker Pkwy	West of Grand Ave	58.2	RW	35	75
SR-60 EB Ramps	East of Grand Ave	67.0	63	136	293
SR-60 WB Off Ramp	West of Grand Ave	60.4	22	49	106
SR-60 WB On Ramp	East of Grand Ave	65.0	46	100	216

* From roadway centerline
RW – Noise contour falls within roadway right-of-way.

Table 3 shows that the loudest roadways in the area are portions of Valley Avenue, Temple Avenue and Grand Avenue. The roadways in the area have noise levels typical for a suburban area.

2.0 POTENTIAL NOISE IMPACTS

Potential noise impacts are commonly divided into two groups; temporary and long term. Temporary impacts are usually associated with noise generated by construction activities. Long-term impacts are caused by operation of the project. In this report the impacts are further divided into those associated with the buildout of the 2015 Facilities Master Plan Update (FMPU) and projects directly associated with the Physical Education Projects (PEP).

2.1 Thresholds of Significance

The College has proposed (and it is anticipated that they will be adopted prior to the release of the SEIR) Thresholds of Significance criteria for noise related impacts. These thresholds will be used as the primary measure of whether an impact will be less than significant.

Construction noise impacts have two thresholds based on the duration of construction. Longer term construction projects have a more stringent threshold since they represent a greater annoyance to the community. An additional threshold addresses potential vibration impacts. The following three thresholds related to construction will be addressed.

1. Site-specific construction projects lasting one year or less for site preparation, demolition, grading and shell building construction located within 1,500 feet or less from a sensitive off-site land use have a significant construction noise impact if construction occurs outside of permitted construction hours. Construction hours are defined in Mitigation Measure 5a in the Mitigation Monitoring Program as 7 a.m. to 7 p.m. on Monday through Saturday.

2. Site-specific construction projects lasting more than one year, with site preparation, demolition, grading and shell building construction, located within 1,500 feet or less from a sensitive off-site land use have a significant construction noise impact if: (1) Construction occurs outside of permitted construction hours, and (2) Lmax noise levels from 7 a.m. to 7 pm are less than 90 dBA and less than 65 dBA Leq at any off-site sensitive receptor property line and (3) From 7 p.m. to 7 a.m., the Lmax is less than 75 dBA and less than 55 dBA Leq offsite at any off-site sensitive property line. Construction hours are defined in Mitigation Measure 5a in the Mitigation Monitoring Program as 7 a.m. to 7 p.m. on Monday through Saturday.

3. A significant construction equipment vibration impact occurs for a site-specific project if a peak particle velocity (PPV) of 0.04 inches/ second or more occurs offsite in a sensitive receptor area for more than fifteen (15) minutes in any one hour.

Long-term off-site impacts from traffic noise are measured against two criteria. Both criteria must be met for a significant impact to be identified. The threshold for off-site traffic noise impacts is as follows.

4. FMP traffic-related net noise increases on public roadways more than 3 dBA at 100 feet from centerline that result in noise levels above 65 CNEL in off-campus sensitive receptor areas (residential or hospitals), or above 70 CNEL

for off-campus commercial areas, due to baseline versus buildout project net FMP trip increases are a significant impact.

Cumulative impacts are measured by the following criteria.

5. Cumulative projects traffic-related noise impacts (existing plus project baseline versus existing plus project plus cumulative) are not significant if the same noise criteria stated above is applied to sensitive receptors or commercial areas off-campus;

Long-term off-site impacts from operations on-campus are also subject to noise thresholds. The following threshold applies.

6. Site-specific projects that generate operational noise as measured at a residential property line greater than 55 dBA (Leq) from 7 a.m. to 10 p.m. and 50 dBA from 10 p.m. to 7 a.m. have a significant noise impact. The maximum operational noise level shall not exceed 75 dBA (Lmax) during the day or 70 dBA (Lmax) during the night. If the ambient noise levels are higher than the stated Leq or Lmax criteria, the corresponding Leq and Lmax criteria levels are increased to the ambient noise level. Noise levels above the stated criteria are a significant impact.

2.2 The 2015 Facility Master Plan Update (FMPU)

The potential impacts associated with the 2015 FMPU involve construction associated with the various FMPU projects and the traffic associated with the increase student attendance (headcount). Potential noise impacts associated with the Physical Education Project (PEP) are addressed in Section 2.3.

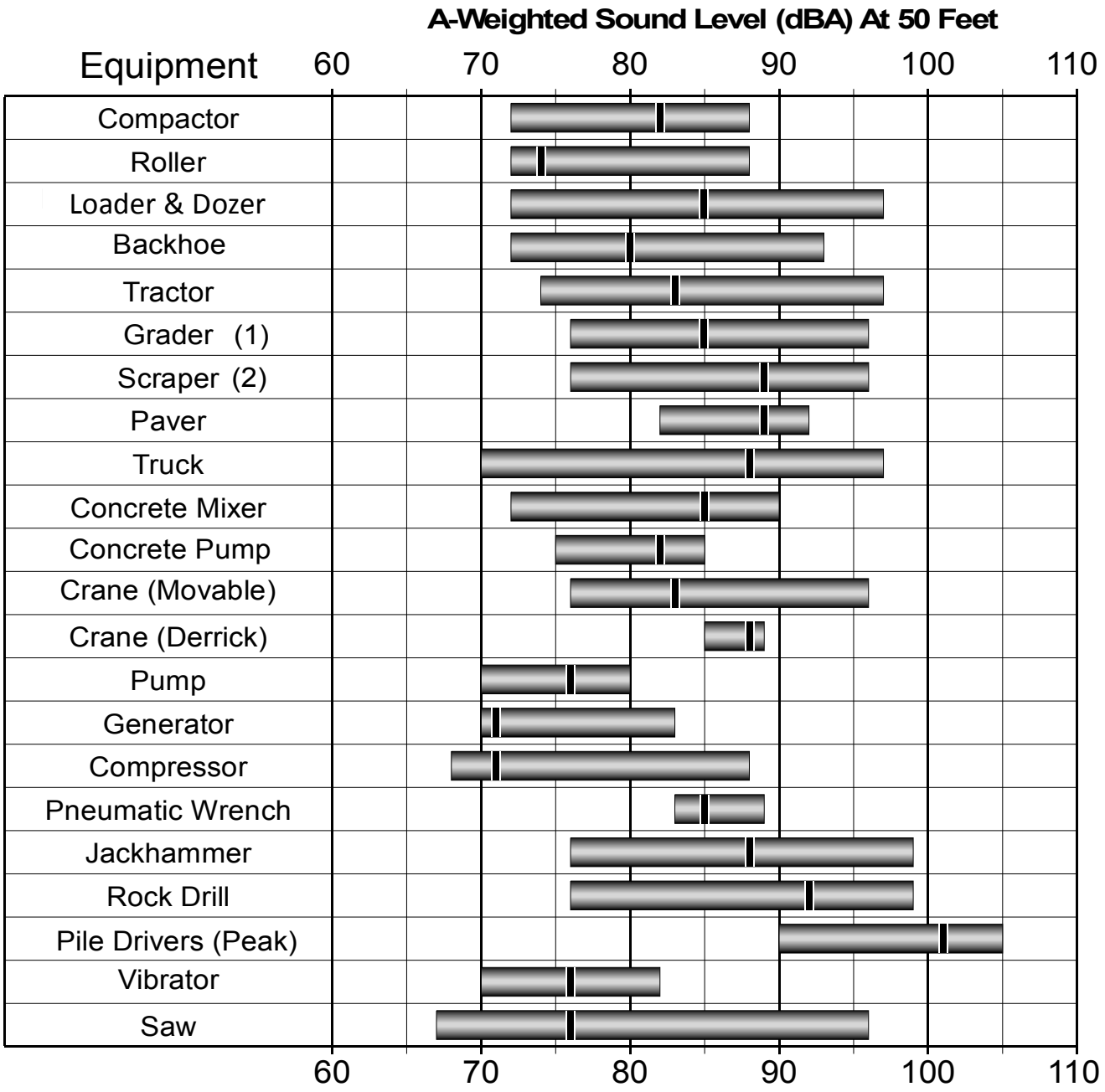
2.2.1 Construction Noise

Construction noise represents a short-term impact on ambient noise levels. Noise generated by construction equipment, including trucks, graders, bulldozers, concrete mixers and portable generators can reach high levels. Worst-case examples of construction noise at 50 feet are presented in 0. Typical equipment that might be employed for the type of projects associated with the FMPU includes graders, scrapers, front loaders, trucks, concrete mixers and concrete pumps. The peak (Lmax) noise level for most of the equipment that will be used during the construction is 70 to 95 dBA at a distance of 50 feet. Noise levels at further distances would be less than this, and intervening terrain such as ridgelines would reduce noise levels even further. The noise levels shown in 0 are based upon worst-case (i.e. loudest noise) conditions at the construction site, so these noise levels are used as the basis for predicting the worst-case construction noise estimate.

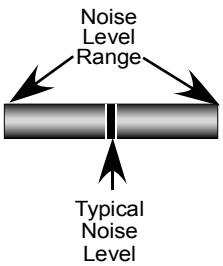
The thresholds of significance indicate that any construction project more than 1,500 feet from a residential area will result in a less than significant impact. Exhibit 9 shows the area on-campus that is more than 1,500 feet from sensitive receptor areas. Any construction within this zone would have a less than significant impact. If a project is less than 1,500 feet from a sensitive receptor, but construction lasts less than 1 year, then it will have a less than significant impact when mitigated per Mitigation Measure 5a of the Mitigation Monitoring Plan. This measure limits construction to 7 a.m. to 7 p.m. on Monday through Saturday. Projects requiring more than 1 year of construction would likely result in an impact and will require further analysis prior to the initiation of construction to determine what mitigation is feasible and if it will be adequate.

Table 4 shows the individual projects that are part of the FMPU. For each project it is determined, based on the above significance thresholds, whether an impact could result or not. The first column of the table simply identifies the project. Many of the projects involved are demolition projects and are presented first in the table. The second column identifies whether the project is within 1,500 feet of a residential area. The third column identifies whether the construction or demolition would last more than 1 year. Demolition projects generally occur rather quickly while construction projects tend to take much longer. Small construction projects can be completed in less than 1 year. If it is uncertain how long construction might last, then the project is identified as lasting more than 1 year. The final column identifies whether there will be an impact or not based on the threshold criteria discussed above. Many of the projects have been identified as “Less than significant with MM5a,” which means that they must comply with Mitigation Measure 5a (MM5a) to avoid a significant impact. Six of the projects are identified as “Potential significant impact.” For these projects, a project level construction noise analysis needs to be prepared that specifically addresses the potential construction noise impacts and appropriate mitigation measures. At the Master Facilities Plan level, these projects and their construction schedules are not sufficiently detailed to conduct a construction noise analysis. Mitigation measures are discussed in Section 3.1.1.

Exhibit 8 - Construction Noise Levels



LEGEND



Sources: "Handbook of Noise Control,"
by Cyril Harris, 1979
"Transit Noise and Vibration Impact Assessment"
by Federal Transit Administration, 1995

G&A

Exhibit 9 - Potential Construction Noise Impact Zone

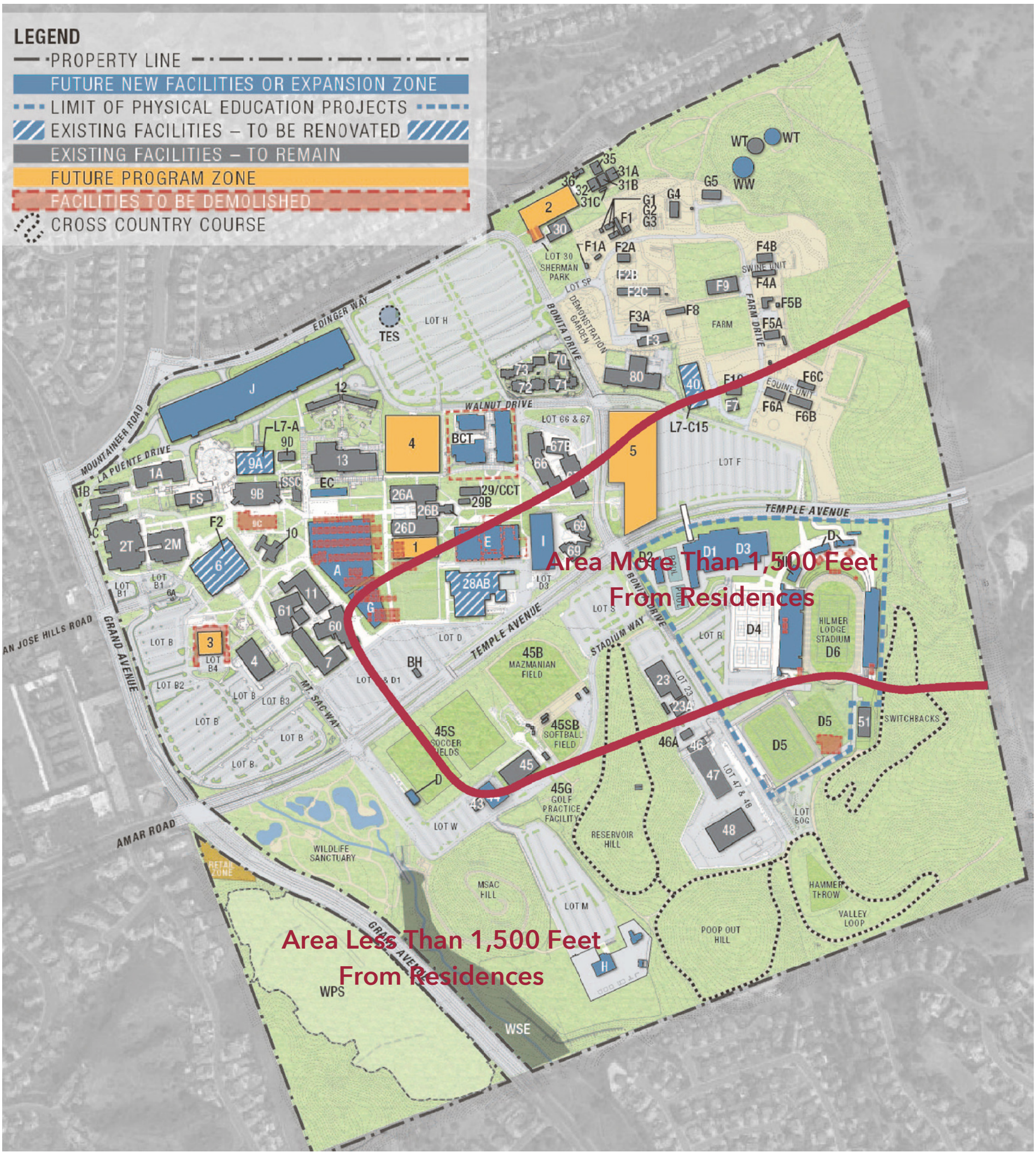


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Table 4 Construction Impacts for 2015 FMPU Projects

Project	Greater Than 1,500 feet	Lasting Less Than 1 Year	Potential Impact?
Demolition Projects			
Campus Inn	No	Yes	Less than significant with MM5a
Administration (Bldg 4)	No	Yes	Less than significant with MM5a
Bldg 12A, 12B	No	Yes	Less than significant with MM5a
Bldg 18A, 18B	No	Yes	Less than significant with MM5a
Bldg 38A, 38B	No	Yes	Less than significant with MM5a
ACE Demolitions	No (part only)	Yes	See Note (2)
Bldg 27A-C	Yes	N.A.	Less than significant
Gym (03)	No	Yes	Less than significant with MM5a
Student Center (9C)	No	Yes	Less than significant with MM5a
Bldg 17	No	Yes	Less than significant with MM5a
Bldg 18A	No	Yes	Less than significant with MM5a
Bldg 18B	No	Yes	Less than significant with MM5a
Bldg 19A-C	No	Yes	Less than significant with MM5a
Bldg 20	No	Yes	Less than significant with MM5a
Construction Projects			
Student Success Center	No	Yes	Less than significant with MM5a
Food Service	No	Yes	Less than significant with MM5a
BCT/Language Lab Lobby	No	No	Less than significant with MM5a (1)
Library/Campus Center	No	No	Potential significant impact
Auditorium (1,200 seats)	No	No	Potential significant impact
PEP/Stadium/Auxiliary	No (part only)	No	See Note (2)
Career & Tech Ed (E2)	No	Yes	Less than significant with MM5a
Future Instruction Zone 1	No	No	Potential significant impact
Future Instructional Zone 2	No	No	Potential significant impact
Future Instructional Zone 4	No	No	Potential significant impact
Future Instructional Zone 5	No	No	Potential significant impact
Future Instructional Zone 6	Yes	N.A.	Less than significant

Notes:

N.A. – Not Applicable

1. Construction noise analysis has been previously prepared; Memo to Mikaela Klein, "Business Computer Technology (BCT) and Language Center Lobby (LCL) Addition - Construction Noise Analysis," October 16, 2015.

2. See Section 2.3.1 for detail analysis.

2.2.2 Vibration Impacts

The California Department of Transportation (Caltrans) has published the "Transportation and Construction-Induced Vibration Guidance Manual" (June 2004). This document has become the standard by which construction projects are evaluated for their vibration potential in California.

The threshold for vibration associated with construction is a peak particle velocity (PPV) of 0.04 inches/ second. The most critical concern according to Caltrans is whether pile driving will be used. If pile driving is to be used then vibration levels can be high and exceed this level. Since pile driving is not anticipated as part of these projects, and no other unusual construction techniques are proposed that would have a high potential for vibration generation, it can be concluded that vibration impacts will be less than significant for the proposed projects.

2.2.3 Off-Site Traffic Noise

To determine traffic noise impacts as a result of the project, the FHWA (Federal Highway Administration) noise model was used. The FHWA noise model utilizes various traffic-flow parameters (e.g. traffic volume, speed, mix, etc.) to predict noise levels that result from the operation of motor vehicles on the roadways. Existing and future traffic volumes utilized were provided by Iteris, January 2016.

Table 5 shows traffic noise CNEL level changes on the roadways affected by the project. The first data column of Table 5 shows the project's contribution to the increase in the year 2020. The noise increase is due solely to the proposed project. It represents the existing case compared to the existing plus project case. Although the traffic increase will occur over time, the courts have determined that examination of the existing plus project case represents the worst-case impact generated solely by the project. The second column provides similar data, but for the year 2025. This comparison represents the existing plus project increase over existing for the year 2025.

Table 5 Traffic Noise CNEL Increases Due to the Project (dB)

Roadway	Segment	2020 Existing v. Existing + Project	2025 Existing v. Existing + Project
Grand Ave	North of I-10 WB Ramps	0.01	0.02
Grand Ave	between I-10 WB/EB Ramps	0.07	0.13
Grand Ave	between I-10 EB Ramps and Cameron Ave	0.14	0.27
Grand Ave	between Cameron Ave and Mountaineer Rd	0.13	0.25
Grand Ave	between Mountaineer Rd and San Jose Hills Rd	0.08	0.15
Grand Ave	between San Jose Hills Rd and Temple Ave	0.08	0.15
Grand Ave	between Temple Ave and La Puente Rd	0.12	0.23
Grand Ave	between La Puente Rd and Valley Blvd	0.07	0.13
Grand Ave	between Valley Blvd and Baker Pkwy	0.06	0.11
Grand Ave	between Baker Pkwy and SR-60 EB Ramps	0.04	0.07
Grand Ave	between SR-60 EB/WB Ramps	0.03	0.06
Grand Ave	South of SR-60 WB Ramps	0.02	0.03
Nogales St	North of Amar Rd	0.00	0.00
Nogales St	South of Amar Rd	0.02	0.05
Lemon Ave	South of Amar Rd	0.08	0.15
Mt SAC Wy	North of Temple Ave	0.28	0.52
Mt SAC Wy	South of Temple Ave	0.73	1.30
Bonita Ave	North of Temple Ave	0.41	0.76
Bonita Ave	South of Temple Ave	0.85	1.50
Lot F	North of Temple Ave	0.00	0.00
Valley Ave	North of Temple Ave	0.07	0.13
Valley Ave	South of Temple Ave	0.02	0.03
SR-57 SB Off Ramp	North of Temple Ave	0.05	0.10
SR-57 SB On Ramp	North of Temple Ave	0.00	0.00
SR-57 NB Off Ramp	South of Temple Ave	0.16	0.30
SR-57 NB On Ramp	South of Temple Ave	0.13	0.25
Amar Rd	West of Nogales St	0.02	0.03
Amar Rd	between Nogales St and Lemon Ave	0.04	0.07
Amar Rd	between Lemon Ave and Grand Ave	0.07	0.14
Temple Ave	between Grand Ave and Mt SAC Wy	0.15	0.29
Temple Ave	between Mt SAC Wy and Bonita Ave	0.18	0.33
Temple Ave	between Bonita Ave and Lot F	0.25	0.47
Temple Ave	between Lot F and Valley Blvd	0.25	0.46
Temple Ave	between Valley Blvd and SR-57 SB Ramps	0.16	0.30
Temple Ave	between SR-57 SB/NB Ramps	0.09	0.16
Temple Ave	East of SR-57 NB Off Ramp	0.02	0.04
I-10 WB Ramps	West of Grand Ave	0.12	0.22
I-10 EB Ramps	West of Grand Ave	0.17	0.31

Table 5 Continued - Traffic Noise CNEL Increases Due to the Project (dB)

Roadway	Segment	2020 Existing v. Existing + Project	2025 Existing v. Existing + Project
Cameron Ave	West of Grand Ave	0.04	0.07
Mountaineer Rd	East of Grand Ave	1.01	1.77
San Jose Hills Rd	West of Grand Ave	0.02	0.04
San Jose Hills Rd	East of Grand Ave	0.78	1.38
La Puente Rd	West of Grand Ave	0.09	0.17
La Puente Rd	East of Grand Ave	0.14	0.26
Valley Ave	West of Grand Ave	0.02	0.04
Valley Ave	East of Grand Ave	0.00	0.00
Baker Pkwy	West of Grand Ave	0.00	0.00
SR-60 EB Ramps	East of Grand Ave	0.02	0.04
SR-60 WB Off Ramp	West of Grand Ave	0.10	0.18
SR-60 WB On Ramp	East of Grand Ave	0.00	0.00

The threshold criteria presented previously in Section 2.1 indicates that to have significant noise increase, the noise must be projected to increase by 3 dB or more. No increases greater than 3 dB are projected. For the year 2020, the greatest increase is 1.01 dB, and it is for Mountaineer Road east of Grand Avenue. For 2025, the greatest increase is 1.77 dB, and it is also for Mountaineer Road. Mountaineer Road is a low volume roadway, and therefore, relatively small increases in traffic result in higher increases in noise. It should be noted that Mountaineer Road would remain a low volume road with low levels of noise (see following paragraphs and Table 6). Since the increases will be less than 3 dB, the traffic noise impacts due directly to the project will be less than significant.

The distances to the future with CNEL contours for the roadways in the vicinity of the proposed project site are presented in Table 6. The values shown under the 60, 65 and 70 CNEL columns represent the distance from the centerline of the roadway to the respective contour value. The CNEL levels at 100 feet from the roadway centerline are also presented. The contours do not take into account the effect of any noise barriers or topography that may reduce traffic noise levels. Traffic volumes, speeds and traffic mixes used to calculate the noise levels are presented in the appendix.

Table 6 Future Traffic Noise Levels (Existing Plus Project 2025)

Roadway	Segment	CNEL @ 100' *	Distance To CNEL Contour from Centerline of Roadway (feet)		
			70 CNEL	65 CNEL	60 CNEL
Grand Ave	North of I-10 WB Ramps	66.9	62	134	289
Grand Ave	between I-10 WB/EB Ramps	66.9	62	133	288
Grand Ave	between I-10 EB Ramps and Cameron Ave	66.5	58	125	271
Grand Ave	between Cameron Ave and Mountaineer Rd	67.8	71	153	330
Grand Ave	between Mountaineer Rd and San Jose Hills Rd	66.5	58	126	272
Grand Ave	between San Jose Hills Rd and Temple Ave	66.6	59	127	275
Grand Ave	between Temple Ave and La Puente Rd	69.3	89	193	417
Grand Ave	between La Puente Rd and Valley Blvd	69.7	94	204	439
Grand Ave	between Valley Blvd and Baker Pkwy	69.0	86	185	400
Grand Ave	between Baker Pkwy and SR-60 EB Ramps	69.0	85	184	396
Grand Ave	between SR-60 EB/WB Ramps	68.4	77	167	360
Grand Ave	South of SR-60 WB Ramps	67.6	69	149	321
Nogales St	North of Amar Rd	47.0	RW	RW	RW
Nogales St	South of Amar Rd	65.4	49	106	229
Lemon Ave	South of Amar Rd	58.8	RW	38	83
Mt SAC Wy	North of Temple Ave	56.2	RW	25	55
Mt SAC Wy	South of Temple Ave	52.5	RW	RW	31
Bonita Ave	North of Temple Ave	58.8	18	38	83
Bonita Ave	South of Temple Ave	56.2	12	26	56
Lot F	North of Temple Ave	38.2	RW	RW	RW
Valley Ave	North of Temple Ave	65.7	52	112	241
Valley Ave	South of Temple Ave	65.6	51	110	238
SR-57 SB Off Ramp	North of Temple Ave	67.1	64	138	299
SR-57 SB On Ramp	North of Temple Ave	55.7	RW	23	51
SR-57 NB Off Ramp	South of Temple Ave	65.5	49	107	231
SR-57 NB On Ramp	South of Temple Ave	63.2	35	76	163
Amar Rd	West of Nogales St	67.8	71	153	330
Amar Rd	between Nogales St and Lemon Ave	66.6	59	127	275
Amar Rd	between Lemon Ave and Grand Ave	66.6	59	128	276
Temple Ave	between Grand Ave and Mt SAC Wy	65.8	52	112	243
Temple Ave	between Mt SAC Wy and Bonita Ave	65.4	49	107	230
Temple Ave	between Bonita Ave and Lot F	68.1	74	160	345
Temple Ave	between Lot F and Valley Blvd	68.2	75	162	350
Temple Ave	between Valley Blvd and SR-57 SB Ramps	67.1	64	138	297
Temple Ave	between SR-57 SB/NB Ramps	68.6	80	173	373
Temple Ave	East of SR-57 NB Off Ramp	68.1	74	160	345
I-10 WB Ramps	West of Grand Ave	66.1	54	117	253
I-10 EB Ramps	West of Grand Ave	64.6	43	93	202
Cameron Ave	West of Grand Ave	62.9	33	72	157
Mountaineer Rd	East of Grand Ave	59.0	RW	39	86
San Jose Hills Rd	West of Grand Ave	54.9	RW	21	45
San Jose Hills Rd	East of Grand Ave	56.5	RW	26	58

Table 6 Continued -- Future Traffic Noise Levels (Existing Plus Project 2025)

Roadway	Segment	CNEL @ 100' *	Distance To CNEL Contour from Centerline of Roadway (feet)		
			70 CNEL	65 CNEL	60 CNEL
La Puente Rd	West of Grand Ave	62.1	29	64	138
La Puente Rd	East of Grand Ave	55.8	RW	24	52
Valley Ave	West of Grand Ave	69.6	94	203	437
Valley Ave	East of Grand Ave	69.4	90	195	420
Baker Pkwy	West of Grand Ave	58.2	RW	35	75
SR-60 EB Ramps	East of Grand Ave	67.1	63	137	295
SR-60 WB Off Ramp	West of Grand Ave	60.6	23	50	109
SR-60 WB On Ramp	East of Grand Ave	65.0	46	100	216

* From roadway centerline
RW – Contour falls within road right-of-way

Table 6 shows that the loudest roadways in the area continue to be portions of Valley Avenue, Temple Avenue and Grand Avenue. The roadways in the area have noise levels typical for a suburban area.

In summary, traffic noise impacts will be less than significant with the proposed project.

2.2.4 Cumulative Impacts

The buildout of the 2015 FMPU projects plus other non-campus projects in Walnut and other surrounding cities have the potential to generate additional traffic and additional noise. The potential cumulative impact on the noise environment is addressed in this section.

Table 7 shows traffic noise CNEL level changes on the roadways affected by the project and the other cumulative projects for 2020. The first data column of Table 7 shows the difference in noise levels between existing conditions and existing conditions plus cumulative projects (no campus projects). This noise increase is due to the proposed other projects in the area not including campus related projects. It represents the existing case compared to the existing plus other development case. The final data column provides the comparison between existing conditions versus the existing plus cumulative projects plus campus related projects. The increases shown in the final column represent the cumulative impacts. Table 8 presents the same data but for 2025.

Table 7 Cumulative Traffic Noise CNEL Increases for 2020 (dB)

Roadway	Segment	2020 Existing v. Existing + Cumulative Projects	2020 Existing v. Existing + Cumulative + Campus Projects
Grand Ave	North of I-10 WB Ramps	0.0	0.1
Grand Ave	between I-10 WB/EB Ramps	0.1	0.2
Grand Ave	between I-10 EB Ramps and Cameron Ave	0.2	0.3
Grand Ave	between Cameron Ave and Mountaineer Rd	0.1	0.3
Grand Ave	between Mountaineer Rd and San Jose Hills Rd	0.1	0.2
Grand Ave	between San Jose Hills Rd and Temple Ave	0.1	0.2
Grand Ave	between Temple Ave and La Puente Rd	0.1	0.3
Grand Ave	between La Puente Rd and Valley Blvd	0.1	0.2
Grand Ave	between Valley Blvd and Baker Pkwy	0.1	0.2
Grand Ave	between Baker Pkwy and SR-60 EB Ramps	0.2	0.2
Grand Ave	between SR-60 EB/WB Ramps	0.1	0.2
Grand Ave	South of SR-60 WB Ramps	0.1	0.1
Nogales St	North of Amar Rd	0.0	0.0
Nogales St	South of Amar Rd	0.0	0.1
Lemon Ave	South of Amar Rd	0.0	0.1
Mt SAC Wy	North of Temple Ave	0.0	0.3
Mt SAC Wy	South of Temple Ave	0.0	0.7
Bonita Ave	North of Temple Ave	0.0	0.4
Bonita Ave	South of Temple Ave	0.0	0.8
Lot F	North of Temple Ave	0.0	0.0
Valley Ave	North of Temple Ave	0.2	0.2
Valley Ave	South of Temple Ave	0.2	0.2
SR-57 SB Off Ramp	North of Temple Ave	0.4	0.5
SR-57 SB On Ramp	North of Temple Ave	0.0	0.0
SR-57 NB Off Ramp	South of Temple Ave	0.6	0.7
SR-57 NB On Ramp	South of Temple Ave	0.4	0.5
Amar Rd	West of Nogales St	0.1	0.1
Amar Rd	between Nogales St and Lemon Ave	0.1	0.2
Amar Rd	between Lemon Ave and Grand Ave	0.1	0.2
Temple Ave	between Grand Ave and Mt SAC Wy	0.1	0.3
Temple Ave	between Mt SAC Wy and Bonita Ave	0.2	0.3
Temple Ave	between Bonita Ave and Lot F	0.2	0.4
Temple Ave	between Lot F and Valley Blvd	0.4	0.6
Temple Ave	between Valley Blvd and SR-57 SB Ramps	0.4	0.5
Temple Ave	between SR-57 SB/NB Ramps	0.3	0.4
Temple Ave	East of SR-57 NB Off Ramp	0.4	0.5
I-10 WB Ramps	West of Grand Ave	0.1	0.2
I-10 EB Ramps	West of Grand Ave	0.2	0.3

Table 7 Continued -- Cumulative Traffic Noise CNEL Increases for 2020 (dB)

Roadway	Segment	2020 Existing v. Existing + Cumulative Projects	2020 Existing v. Existing + Cumulative + Campus Projects
Cameron Ave	West of Grand Ave	0.0	0.0
Mountaineer Rd	East of Grand Ave	0.0	1.0
San Jose Hills Rd	West of Grand Ave	0.0	0.0
San Jose Hills Rd	East of Grand Ave	0.0	0.2
La Puente Rd	West of Grand Ave	0.0	0.1
La Puente Rd	East of Grand Ave	0.0	0.1
Valley Ave	West of Grand Ave	0.1	0.1
Valley Ave	East of Grand Ave	0.2	0.2
Baker Pkwy	West of Grand Ave	0.0	0.0
SR-60 EB Ramps	East of Grand Ave	0.1	0.1
SR-60 WB Off Ramp	West of Grand Ave	0.3	0.4
SR-60 WB On Ramp	East of Grand Ave	0.0	0.0

Table 8 Cumulative Traffic Noise CNEL Increases for 2025 (dB)

Roadway	Segment	2025 Existing v. Existing + Cumulative Projects	2025 Existing v. Existing + Cumulative + Campus Projects
Grand Ave	North of I-10 WB Ramps	0.0	0.1
Grand Ave	between I-10 WB/EB Ramps	0.2	0.3
Grand Ave	between I-10 EB Ramps and Cameron Ave	0.4	0.7
Grand Ave	between Cameron Ave and Mountaineer Rd	0.3	0.5
Grand Ave	between Mountaineer Rd and San Jose Hills Rd	0.3	0.4
Grand Ave	between San Jose Hills Rd and Temple Ave	0.3	0.4
Grand Ave	between Temple Ave and La Puente Rd	0.3	0.5
Grand Ave	between La Puente Rd and Valley Blvd	0.3	0.4
Grand Ave	between Valley Blvd and Baker Pkwy	0.6	0.7
Grand Ave	between Baker Pkwy and SR-60 EB Ramps	1.1	1.2
Grand Ave	between SR-60 EB/WB Ramps	0.8	0.8
Grand Ave	South of SR-60 WB Ramps	0.2	0.2
Nogales St	North of Amar Rd	0.0	0.0
Nogales St	South of Amar Rd	0.0	0.1
Lemon Ave	South of Amar Rd	0.0	0.2
Mt SAC Wy	North of Temple Ave	0.0	0.5
Mt SAC Wy	South of Temple Ave	0.0	1.3
Bonita Ave	North of Temple Ave	0.0	0.8
Bonita Ave	South of Temple Ave	0.0	1.5
Lot F	North of Temple Ave	0.0	0.0
Valley Ave	North of Temple Ave	0.6	0.8
Valley Ave	South of Temple Ave	0.7	0.7
SR-57 SB Off Ramp	North of Temple Ave	0.6	0.6
SR-57 SB On Ramp	North of Temple Ave	0.0	0.0
SR-57 NB Off Ramp	South of Temple Ave	1.0	1.2
SR-57 NB On Ramp	South of Temple Ave	0.7	0.9
Amar Rd	West of Nogales St	0.2	0.2
Amar Rd	between Nogales St and Lemon Ave	0.3	0.3
Amar Rd	between Lemon Ave and Grand Ave	0.3	0.4
Temple Ave	between Grand Ave and Mt SAC Wy	0.3	0.5
Temple Ave	between Mt SAC Wy and Bonita Ave	0.3	0.6
Temple Ave	between Bonita Ave and Lot F	0.3	0.7
Temple Ave	between Lot F and Valley Blvd	0.7	1.1
Temple Ave	between Valley Blvd and SR-57 SB Ramps	0.7	0.9
Temple Ave	between SR-57 SB/NB Ramps	0.5	0.6
Temple Ave	East of SR-57 NB Off Ramp	0.4	0.5
I-10 WB Ramps	West of Grand Ave	0.3	0.5
I-10 EB Ramps	West of Grand Ave	0.5	0.7

Table 8 Continued -- Cumulative Traffic Noise CNEL Increases for 2025 (dB)

Roadway	Segment	2025 Existing v. Existing + Cumulative Projects	2025 Existing v. Existing + Cumulative + Campus Projects
Cameron Ave	West of Grand Ave	0.0	0.1
Mountaineer Rd	East of Grand Ave	0.0	1.8
San Jose Hills Rd	West of Grand Ave	0.0	0.0
San Jose Hills Rd	East of Grand Ave	0.0	0.4
La Puente Rd	West of Grand Ave	0.0	0.2
La Puente Rd	East of Grand Ave	0.0	0.3
Valley Ave	West of Grand Ave	0.1	0.2
Valley Ave	East of Grand Ave	0.4	0.4
Baker Pkwy	West of Grand Ave	2.2	2.2
SR-60 EB Ramps	East of Grand Ave	1.0	1.0
SR-60 WB Off Ramp	West of Grand Ave	2.2	2.3
SR-60 WB On Ramp	East of Grand Ave	0.7	0.7

The threshold criteria presented previously in Section 2.1 indicates that to have significant noise increase, the noise must be projected to increase by 3 dB or more. No increases greater than 3 dB are projected. For the year 2020, the greatest increase is 1.0 dB, and it is for Mountaineer Road east of Grand Avenue. For 2025, the greatest increase is 2.3 dB, and it is for the eastbound SR-60 off-ramp. Mountaineer Road is a low volume roadway, and therefore, relatively small increases in traffic result in higher increases in noise. It should be noted that Mountaineer Road would remain a low volume road with low levels of noise (see following paragraphs and Table 9). Since the increases will be less than 3 dB, the cumulative traffic noise impacts will be less than significant.

The distances to the 2025 CNEL contours for the roadways with cumulative and project traffic are presented in Table 9. The values shown under the 60, 65 and 70 CNEL columns represent the distance from the centerline of the roadway to the respective contour value. The CNEL levels at 100 feet from the roadway centerline are also presented. The contours do not take into account the effect of any noise barriers or topography that may reduce traffic noise levels. Traffic volumes, speeds and traffic mixes used to calculate the noise levels are presented in the appendix.

Table 9 Cumulative Traffic Noise Levels (2025)

Roadway	Segment	CNEL @ 100' *	Distance To CNEL Contour from Centerline of Roadway (feet)		
			70 CNEL	65 CNEL	60 CNEL
Grand Ave	North of I-10 WB Ramps	67.0	62	135	291
Grand Ave	between I-10 WB/EB Ramps	67.1	63	137	297
Grand Ave	between I-10 EB Ramps and Cameron Ave	66.9	61	133	287
Grand Ave	between Cameron Ave and Mountaineer Rd	68.1	74	160	345
Grand Ave	between Mountaineer Rd and San Jose Hills Rd	66.8	61	131	284
Grand Ave	between San Jose Hills Rd and Temple Ave	66.9	61	133	287
Grand Ave	between Temple Ave and La Puente Rd	69.6	93	201	434
Grand Ave	between La Puente Rd and Valley Blvd	69.9	98	212	457
Grand Ave	between Valley Blvd and Baker Pkwy	69.6	93	202	435
Grand Ave	between Baker Pkwy and SR-60 EB Ramps	70.1	100	217	468
Grand Ave	between SR-60 EB/WB Ramps	69.1	87	187	404
Grand Ave	South of SR-60 WB Ramps	67.8	71	153	330
Nogales St	North of Amar Rd	47.0	2	6	13
Nogales St	South of Amar Rd	65.4	49	107	230
Lemon Ave	South of Amar Rd	58.8	17	38	83
Mt SAC Wy	North of Temple Ave	56.2	11	25	55
Mt SAC Wy	South of Temple Ave	52.5	6	14	31
Bonita Ave	North of Temple Ave	58.8	18	38	83
Bonita Ave	South of Temple Ave	56.2	12	26	56
Lot F	North of Temple Ave	38.2	0	1	3
Valley Ave	North of Temple Ave	66.4	57	123	265
Valley Ave	South of Temple Ave	66.3	56	122	263
SR-57 SB Off Ramp	North of Temple Ave	67.7	70	151	325
SR-57 SB On Ramp	North of Temple Ave	55.7	11	23	51
SR-57 NB Off Ramp	South of Temple Ave	66.4	57	123	266
SR-57 NB On Ramp	South of Temple Ave	63.9	38	83	180
Amar Rd	West of Nogales St	68.0	73	158	341
Amar Rd	between Nogales St and Lemon Ave	66.9	61	133	287
Amar Rd	between Lemon Ave and Grand Ave	66.9	62	134	289
Temple Ave	between Grand Ave and Mt SAC Wy	66.0	54	117	252
Temple Ave	between Mt SAC Wy and Bonita Ave	65.7	51	111	240
Temple Ave	between Bonita Ave and Lot F	68.3	77	166	359
Temple Ave	between Lot F and Valley Blvd	68.8	82	178	385
Temple Ave	between Valley Blvd and SR-57 SB Ramps	67.7	70	152	327
Temple Ave	between SR-57 SB/NB Ramps	69.0	85	185	398
Temple Ave	East of SR-57 NB Off Ramp	68.5	79	171	369
I-10 WB Ramps	West of Grand Ave	66.4	57	123	265
I-10 EB Ramps	West of Grand Ave	65.0	46	100	216

Table 9 Continued -- Cumulative Traffic Noise Levels (2025)

Roadway	Segment	CNEL @ 100' *	Distance To CNEL Contour from Centerline of Roadway (feet)		
			70 CNEL	65 CNEL	60 CNEL
Cameron Ave	West of Grand Ave	62.9	33	72	157
Mountaineer Rd	East of Grand Ave	59.0	18	39	86
San Jose Hills Rd	West of Grand Ave	54.9	9	21	45
San Jose Hills Rd	East of Grand Ave	55.5	10	23	49
La Puente Rd	West of Grand Ave	62.1	29	64	138
La Puente Rd	East of Grand Ave	55.8	11	24	52
Valley Ave	West of Grand Ave	69.7	96	207	446
Valley Ave	East of Grand Ave	69.8	96	208	448
Baker Pkwy	West of Grand Ave	60.4	23	49	106
SR-60 EB Ramps	East of Grand Ave	68.0	73	158	341
SR-60 WB Off Ramp	West of Grand Ave	62.7	32	70	151
SR-60 WB On Ramp	East of Grand Ave	65.7	51	111	239

* From roadway centerline
RW – Contour falls within road right-of-way

Table 9 shows that the loudest roadways in the area continue to be portions of Valley Avenue, Temple Avenue and Grand Avenue. The roadways in the area have noise levels typical for a suburban area.

2.3 Physical Education Projects (PEP)

Potential noise impacts associated with the Physical Education Projects are addressed in this section. Construction noise, noise from football games, noise from special events, parking lot noise, and other CEQA topics are addressed.

2.3.1 Construction Noise

Construction noise represents a short-term impact on ambient noise levels. Noise generated by construction equipment, including trucks, graders, bulldozers, concrete mixers and portable generators can reach high levels.

The thresholds of significance indicate that any construction project greater than 1,500 feet from a residential area will result in a less than significant impact. Exhibit 9, presented previously, shows the area on-campus that is more than 1,500 feet from sensitive receptor areas. Any construction within this zone would have a less than significant impact. If a project is less than 1,500 feet from a sensitive receptor, but construction lasts less than 1 year, then it will have a less than significant impact when mitigated per Mitigation Measure 5a of the Mitigation Monitoring Plan. This measure limits construction to 7 a.m. to 7 p.m. on Monday through Saturday. The PEP area for the most part is more than 1,500 feet from any residential area. For example, the closest edge of the residential area to the south is approximately 1,630 feet from the center of the stadium area where most of the construction will occur. In fact, the only project in the PEP that is closer than 1,500 feet is the demolition of the Field House in Area D5. The demolition of the Field House would last less a year, and therefore, with Mitigation Measure 5A it would result in a less than significant impact. Therefore, all of the construction for the PEP would result in a less than significant impact.

Due to the sensitivity of the construction of the new stadium and other PEP facilities, a more quantitative analysis of construction noise is presented. Worst-case examples of construction noise at 50 feet were presented previously in Exhibit 8. Typical equipment that might be employed for this type of project includes graders, dozers, scrapers, front loaders, trucks, cranes, concrete mixers and concrete pumps. The peak (Lmax) noise level for most of the equipment that will be used during the construction is 70 to 95 dBA at a distance of 50 feet. Noise levels at further distances would be less than this, and intervening terrain such as ridgelines would reduce noise levels even further.

The closest residential area is immediately south of the proposed location of the stadium. Potential construction operations would typically be about 1,600 feet from the nearest residential lots to the south. There is a large hill between the nearest residences and the stadium construction area that will act as a noise barrier, and reduce noise levels by an estimated 10 dB. Based on a distance of 1,600 feet, the worst-case unmitigated peak (Lmax) construction noise levels could be 35 to 55 dBA at the residences. The average noise levels (Leq) are typically 15 dB lower than the peak (Lmax) noise levels. The 15 dB value is based on our general observations during construction noise measurements over the past 20 years. The use of a 15 dB difference is also consistent with most of the values presented in Exhibit 8 that show typical levels, which can be assumed to be average, and maximum noise levels. Average noise levels (Leq) at the nearest existing residential buildings to the south (1,600 feet) would be in the range of 20 to 40 dBA (Leq). Ambient noise levels were measured in the area (i.e., Site 7, see Section 1.4.1). The Lmax noise level measured at this site was 68.1 dBA with an average noise level (Leq) of 50.1 dBA. The Lmax and Leq noise levels during construction will be quieter than ambient conditions, and construction noise impacts will be less than significant. Additionally, the noise levels projected are well below the thresholds of significance and would further support the conclusion that construction noise from PEP will be less than significant.

2.3.2 Football Stadium Noise

As part of the PEP, the existing stadium will be demolished and a new stadium constructed. The current stadium has permanent bleacher seats that will accommodate 11,940 people. The proposed stadium will have permanent capacity for 10,912 attendees. Plus the proposed stadium has a seating plan that could accommodate 8,840 additional attendees in temporary bleachers for a total seating capacity of 19,752.

Noise measurements were made at three venues to establish baseline noise levels for college football games. The stadiums monitored were the Cerritos College stadium, the Shappell Stadium in Yorba Linda, and the Hilmer Stadium at Mt. SAC. (The documentation for the Mt. SAC measurements has already been provided. The measurements at Cerritos College were documented in a memo to Mika Klein, Mt. SAC, dated October 13, 2015, and the measurements at Shappell Stadium is a similar memo dated October 27, 2015.) The estimated attendance at the Cerritos College game was 1,800, 1,200 at Shappell Stadium, and 4,500 at the Mt. SAC football game. The noise measurements of the college football games indicated that attendance at the game was the primary factor of how much noise was generated. The public address system (PA) was a minor secondary contributor.

With the new stadium, the attendance at football games is anticipated to remain the same since the attendance has not been restricted by the stadium size. As a worst case the attendance may increase in proportion to the anticipated increases in student enrollment (headcount). For the academic year 2015 to 2016 the headcount at Mt. SAC is 35,986. This is projected to increase to 43,139 for the 2025 – 2026 academic year, or a 20% increase. This

only results in a potential increase of 0.7 dB. Estimated peak noise levels for the existing and future case are provided in the Table 10. The site locations represent the nearest residential areas in all directions and were previously presented in Exhibit 7.

Table 10 Peak Noise Levels for Hilmer Stadium Football Games (dBA)

	Measured Football Game (2015)	Projected Football Game (2025)
Attendance	4,500	5,400
Site 1	41.1	41.8
Site 2	41.1	41.8
Site 3	37.6	38.3
Site 4	49.4	50.1

The significance criteria for on-campus operations affecting off-campus sensitive receptors are a maximum noise level of 75 dBA (Lmax) before 10 p.m. and 70 dBA (Lmax) after 10 p.m. The projected noise levels are well below the criteria levels, and therefore, any impacts will be less than significant.

2.3.3 Parking Lot F

Enhancements to the Lot F parking and eventually a parking structure in Lot F are proposed. The proposed parking area is and will continue to be a source of noise. The nearest sensitive land use is the residential area to the north as near as 1,300 feet from the parking area.

Traffic associated with parking lots is not of sufficient volume to exceed community noise standards that are based on a time averaged scale such as the CNEL scale. However, the instantaneous maximum sound levels generated by car door slamming, engine start-up, alarm activation and car pass-bys can still be annoying to nearby residents. Estimates of the maximum noise levels associated with some parking lot activities are presented in Table 11. The noise levels presented are for a distance of 1,300 feet from the source, and are the maximum noise level generated. A range is given to reflect the variability of noise generated by various automobile types and driving styles.

Table 11 Noise Levels Generated By Lot F Parking

Event	Lmax (dBA)
Door Slam	32 to 42
Car Alarm Activation	37 to 42
Engine Start-up	32 to 42
Car pass-by	27 to 42

The nearest residences to the project are as close as 1,300 feet from the proposed parking spaces, and may experience a maximum noise level of approximately 42 dBA for car activity. Noise measurements (i.e., Site 1, see Table 1) were conducted in this area and a peak noise level of 73.6 dBA was recorded. Therefore, parking lot activity noise will be well below the ambient noise levels, and the noise impact caused by the parking lot activity will be less than significant. Additionally, the noise levels projected are well below the thresholds of significance and would further support the conclusion that parking noise from Lot F will be less than significant.

2.3.4 Special Events

Special events such as the Brooks/Mt. SAC Relays, the Mt. SAC Cross-Country Invitational, and Graduation Ceremonies will continue to be held in the stadium area, and for some events, attendance may grow in future years. The Olympic Field Trials in 2020 are also being pursued for Mt. SAC and would represent a new event for the College. These special events and others are addressed in the following sections.

Brooks/Mt. SAC Relay

The Brooks/Mt. SAC Relay Races are held once per year. Current attendance at the relay event is 3,500. The attendees are anticipated to increase by 500 to an estimated attendance of 4,000. The increase in attendance will cause a less than significant increase in noise. The increase over existing levels will only be 0.6 dB as shown in the Table 12. This increase in noise will not be perceptible. It should also be noted that the peak noise levels are well below the significance threshold of 75 dBA (Lmax) for the daytime period.

Table 12 Peak Noise Levels for the Brooks/Mt. SAC Relays (dBA)

Event	Measured Football Game	Existing Brooks/Mt. SAC Relays	Future Brooks/Mt. SAC Relays	Increase
Attendance	4,500	3,500	4,000	500
Site 1	41.1	40.0	40.5	0.6
Site 2	41.1	40.0	40.5	0.6
Site 3	37.6	36.5	37.0	0.6
Site 4	49.4	48.3	48.8	0.6

Mt. SAC Cross-Country Invitational

The Mt. SAC Cross-Country Invitational is one of the largest events currently held in and around the stadium area. Daily attendance is around 17,000 and this attendance level is not anticipated to change in future years. The noise levels for the Cross-Country event are estimated based on crowd noise generated by a football game. The projected noise levels are presented in Table 13. Since the new stadium will not result in an increase in attendance levels, the future events will be no louder than current events and the noise impact will be less than significant. It should also be noted that the peak noise levels are well below the significance threshold of 75 dBA (Lmax) for the daytime period.

Table 13 Peak Noise Levels for the Mt. SAC Cross-Country Invitational (dBA)

Event	Measured Football Game	Existing Mt. SAC XC Invite	Future Mt. SAC XC Invite	Increase
Attendance	4,500	17,000	17,000	0
Site 1	41.1	46.8	46.8	0.0
Site 2	41.1	46.8	46.8	0.0
Site 3	37.6	43.3	43.3	0.0
Site 4	49.4	55.1	55.1	0.0

Aquatics, Graduation and Soccer Events

Aquatic events will be held nearby in the Aquatic Center, but will have the same potential for noise generation that does football events. Attendance for aquatic events is anticipated to increase sharply from current levels of 3,500 to a future level of 4,000 attendees. The number of aquatic events per year is currently around 30, and is expected to increase slightly to 35 in future years. However, this level of attendance still remains below football games, which have been shown to generate very low levels of noise in the surrounding community and have a less than significant noise impact.

Graduation exercises currently attract approximately 12,000 attendees and this is projected to increase to 13,000 attendees. This level remains below the attendance for the Mt. SAC Cross-Country Invitational, which has been shown to have a less than significant noise impact.

Soccer events attract only 200 attendees currently. The attendance is estimated to increase to 210 per event. This crowd will not be audible in the residential community and the noise impact will be less than significant.

2020 Olympic Track and Field Trials

The 2020 Olympic Track and Field Trials are being sought for Mt SAC. Daily attendance for this multiple day event is projected to be 20,000. The Mt. SAC Cross-Country Invitational, which is an annual event, currently has daily attendance of 17,000. The noise levels for the Olympic trials are estimated based on crowd noise generated by a football game. The projected noise levels are presented in Table 14. The Olympic trials would result in noise levels 0.7 dB higher than would the existing Mt. SAC Cross-Country Invitational. This increase in noise would not be perceptible. It should also be noted that the peak noise levels are well below the significance threshold of 75 dBA (Lmax) for the daytime period, and 70 dBA (Lmax) for the nighttime period. Therefore, the impact of the 2020 Olympic trials will be less than significant. It should be emphasized that no restrictions on the time of the games need to be imposed; the event will be well under the significance thresholds without any restrictions.

Table 14 Peak Noise Levels for the 2020 Olympic Trials (dBA)

Event	Existing Mt. SAC XC Invite	2020 Olympic Trials	Increase
Attendance	17,000	20,000	3,000
Site 1	46.8	47.5	0.7
Site 2	46.8	47.5	0.7
Site 3	43.3	44.0	0.7
Site 4	55.1	55.8	0.7

2.3.5 Potential Traffic Noise Impacts for the Olympic Trials

The proposed 2020 Olympic Track and Field Trials would generate substantial traffic over several days. The traffic noise impacts associated with the Olympic Trials are assessed in this section. Existing and future traffic volumes with the Olympic Trials were provided by Iteris, April 2016. Traffic noise levels are measured using the CNEL noise scale. This noise scale utilizes traffic data for a full 24-hour period. However, traffic that occurs during the evening hours (7 p.m. to 10 p.m.) is penalized by 5 dB, and traffic that occurs during nighttime hours (10 p.m. to 7 a.m.) is penalized by 10 dB. It was estimated that 49% of Olympic Trial traffic would occur during the day, 46% during the evening hours, and 5% during nighttime. Two strategies are being considered to handle the parking requirements; Plan A and Plan B.

Table 15 shows the traffic noise CNEL level changes on the roadways affected by the Olympic Trials. The noise increase is a comparison of existing traffic versus existing plus Olympic Trial traffic.

Table 15 Traffic Noise CNEL Increases Due to the Olympic Trials (dB)

Roadway	Segment	Increase With Plan A	Increase With Plan B
Grand Ave	North of I-10 WB Ramps	0.0	0.0
Grand Ave	between I-10 WB/EB Ramps	0.5	0.3
Grand Ave	between I-10 EB Ramps and Cameron Ave	1.1	0.7
Grand Ave	between Cameron Ave and Mountaineer Rd	0.8	0.5
Grand Ave	between Mountaineer Rd and San Jose Hills Rd	0.7	0.4
Grand Ave	between San Jose Hills Rd and Temple Ave	0.7	0.4
Grand Ave	between Temple Ave and La Puente Rd	0.8	0.6
Grand Ave	between La Puente Rd and Valley Blvd	0.7	0.6

Roadway	Segment	Increase With Plan A	Increase With Plan B
Grand Ave	between Valley Blvd and Baker Pkwy	0.9	0.7
Grand Ave	between Baker Pkwy and SR-60 EB Ramps	0.9	0.7
Grand Ave	between SR-60 EB/WB Ramps	0.6	0.5
Grand Ave	South of SR-60 WB Ramps	0.2	0.1
Nogales St	North of Amar Rd	0.0	0.0
Nogales St	South of Amar Rd	0.0	0.0
Lemon Ave	South of Amar Rd	0.0	0.0
Mt SAC Wy	North of Temple Ave	1.2	0.0
Mt SAC Wy	South of Temple Ave	2.7	0.0
Bonita Ave	North of Temple Ave	3.1	2.7
Bonita Ave	South of Temple Ave	3.5	1.2
Lot F	North of Temple Ave	0.0	0.0
Valley Ave	North of Temple Ave	0.7	0.4
Valley Ave	South of Temple Ave	0.0	0.0
SR-57 SB Off Ramp	North of Temple Ave	0.0	0.0
SR-57 SB On Ramp	North of Temple Ave	0.0	0.0
SR-57 NB Off Ramp	South of Temple Ave	0.6	0.0
SR-57 NB On Ramp	South of Temple Ave	0.0	0.0
Amar Rd	West of Nogales St	0.0	0.0
Amar Rd	between Nogales St and Lemon Ave	0.0	0.0
Amar Rd	between Lemon Ave and Grand Ave	0.0	0.0
Temple Ave	between Grand Ave and Mt SAC Wy	1.4	0.8
Temple Ave	between Mt SAC Wy and Bonita Ave	1.1	0.9
Temple Ave	between Bonita Ave and Lot F	1.8	1.1
Temple Ave	between Lot F and Valley Blvd	2.1	1.3
Temple Ave	between Valley Blvd and SR-57 SB Ramps	1.5	0.8
Temple Ave	between SR-57 SB/NB Ramps	0.9	0.5
Temple Ave	East of SR-57 NB Off Ramp	1.6	0.9
I-10 WB Ramps	West of Grand Ave	1.0	0.6
I-10 EB Ramps	West of Grand Ave	1.4	0.9

Table 15 Continued - Traffic Noise CNEL Increases Due to the Olympic Trials (dB)

Roadway	Segment	Increase With Plan A	Increase With Plan B
Cameron Ave	West of Grand Ave	0.0	0.0
Mountaineer Rd	East of Grand Ave	2.1	2.0
San Jose Hills Rd	West of Grand Ave	0.0	0.0
San Jose Hills Rd	East of Grand Ave	0.0	0.0
La Puente Rd	West of Grand Ave	0.0	0.3
La Puente Rd	East of Grand Ave	0.0	0.0
Valley Ave	West of Grand Ave	0.0	0.0
Valley Ave	East of Grand Ave	0.1	0.0
Baker Pkwy	West of Grand Ave	0.0	0.0
SR-60 EB Ramps	East of Grand Ave	0.7	0.6
SR-60 WB Off Ramp	West of Grand Ave	2.3	2.0

Roadway	Segment	Increase With Plan A	Increase With Plan B
SR-60 WB On Ramp	East of Grand Ave	0.2	0.2

The threshold criteria presented previously in Section 2.1 indicates that to have significant noise increase, the noise must be projected to increase by 3 dB or more. Two locations show increases greater than 3 dB and they are Bonita Avenue north and south of Temple Avenue (highlighted in Table 15). Only Plan A results in increases greater than 3 dB. For there to be an impact, the noise must increase by more than 3 dB and impact a noise-sensitive land use. The area of concern is primarily parking lots and other on-campus uses. Therefore, this is not considered a significant impact. Since the increases will be less than 3 dB or not impact noise-sensitive areas, the traffic noise impacts due Olympic Trials will be less than significant.

2.3.6 Aircraft Noise

There are no airports in the vicinity of the College and aircraft overflight noise is not significant at the project site. Aircraft overflights were monitored but were not a significant cause of noise during the ambient noise measurements at the campus or in the surrounding community. The nearest airport is Brackett Field, which lies to the northeast approximately 4.5 miles. This airport serves general aviation (GA) aircraft. There are no aircraft noise impacts at the project site.

3.0 MITIGATION MEASURES

3.1 The Facilities Plan Master Update

3.1.1 Construction Noise

The analysis presented in Section 2.2.1 shows that construction activities could generate loud noise levels for several projects. The most effective method of controlling construction noise is through limiting construction hours. Mitigation Measure 5a (MM5a) of the Mitigation Monitoring Program was designed to effectively limit construction hours. The measure reads as follows:

> 5a. All construction activities, except in emergencies or special circumstances, shall be limited to the hours of 7 am to 7 pm Monday-Saturday. Staging areas for construction shall be located away from existing offsite residences. All construction equipment shall use properly operating mufflers. These requirements shall be included in construction contracts and implemented. Facilities Planning & Management shall monitor compliance.

Many of the FMPU projects will have less than significant construction noise impacts when MM5a is strictly enforced. The projects that fall into this category include; demolition of Campus Inn, demolition of Administration Building, demolition of Buildings 12A & B, demolition of Buildings 18A & B, demolition of Buildings 38A & B, ACE demolitions, demolition of Gym, demolition of Student Center, demolition of Building 17, demolition of Buildings 19A-C, demolition of Building 20, all demolition for PEP, construction of Student Success Center, construction of Food Service, construction of all PEP. With the strict enforcement of MM5a all of these projects will have a less than significant impact.

Construction of the following projects may last more than 1 year, and therefore, require further analysis as detailed plans of these projects become available; construction of the Library/Campus Center, construction of Auditorium, construction of Future Instruction Zones 1, 2, 4, and 5. The following mitigation measure should be applied to these projects.

> **Noise Mitigation 1 – Develop Construction Noise Management Plans.** Prior to the initiation of each of the following projects; construction of the Library/Campus Center, construction of Auditorium, construction of Future Instruction Zones 1, 2, 4, and 5, a Construction Noise Management Plan should be developed for that project. The plan should identify all feasible measures to reasonably reduce noise levels during construction. The plan should consider locating staging areas away from noise sensitive areas, insuring all heavy duty construction equipment have muffler systems in good working order, use of temporary sound barriers, and limiting hours of construction consistent with MM5a. The plan should include projections of construction noise with and without the control measures.

The extent of the effectiveness of this measure cannot be determined at this time, and therefore, the construction noise impacts associated with these projects must still be considered to be significant.

3.1.2 Traffic Noise

The analysis presented in Section 2.2.1 shows that the project will not result in any significant long-term off-site traffic noise impacts. No mitigation is required.

3.1.3 Cumulative Noise Impacts

The analysis presented in Section 2.2.4 shows that the project will result in cumulative long-term off-site traffic noise impacts that are less than significant. No mitigation is required.

3.2 Physical Education Projects

3.2.1 Construction Noise

The analysis presented in Section 2.3.1 shows that the project will not result in any significant construction noise impacts. No mitigation is required.

3.2.2 Football and Special Event Noise

The assessments presented in Sections 2.3.2, 2.3.4, and 2.3.5 show that the project will not result in any significant long-term off-site noise impacts associated with sporting events in the PEP area. No mitigation is required.

3.2.3 Lot F Parking

The analysis presented in Section 2.3.3 shows that the project will not result in any significant long-term off-site noise impacts due to modifications to parking in Lot F including a parking structure. No mitigation is required.

4.0 UNAVOIDABLE SIGNIFICANT IMPACTS

The mitigation measures described above will mitigate all noise impacts to a level of less than significance except for construction noise associated with some of the FMPU projects. The following projects still have the potential to create a significant construction noise impact; construction of the Library/Campus Center, construction of Auditorium, construction of Future Instruction Zones 1, 2, 4, and 5.

APPENDIX

Mt. SAC FMPU Traffic Analysis						
			A	**B**	**C**	
Link #	**Roadway**	**Extent**	**Existing ADT**	**2020 Existing + Project**	**2025 Existing + Project**	**Speed**
1	Grand Ave	North of I-10 WB Ramps	30,579	30,671	30,755	45
2	Grand Ave	between I-10 WB/EB Ramps	29,655	30,138	30,579	45
3	Grand Ave	between I-10 EB Ramps and Cameron Ave	26,219	27,093	27,891	45
4	Grand Ave	between Cameron Ave and Mountaineer Rd	35,395	36,473	37,451	45
5	Grand Ave	between Mountaineer Rd and San Jose Hills Rd	36,485	37,141	37,737	40
6	Grand Ave	between San Jose Hills Rd and Temple Ave	36,994	37,684	38,314	40
7	Grand Ave	between Temple Ave and La Puente Rd	38,481	39,585	40,593	50
8	Grand Ave	between La Puente Rd and Valley Blvd	42,657	43,347	43,977	50
9	Grand Ave	between Valley Blvd and Baker Pkwy	37,243	37,749	38,211	50
10	Grand Ave	between Baker Pkwy and SR-60 EB Ramps	37,042	37,364	37,658	50
11	Grand Ave	between SR-60 EB/WB Ramps	32,172	32,402	32,612	50
12	Grand Ave	South of SR-60 WB Ramps	35,803	35,941	36,067	45
13	Nogales St	North of Amar Rd	581	581	581	35
14	Nogales St	South of Amar Rd	16,385	16,477	16,561	50
15	Lemon Ave	South of Amar Rd	8,507	8,669	8,815	35
16	Mt SAC Wy	North of Temple Ave	9,253	9,863	10,419	25
17	Mt SAC Wy	South of Temple Ave	3,353	3,963	4,519	25
18	Bonita Ave	North of Temple Ave	7,464	8,212	8,894	35
19	Bonita Ave	South of Temple Ave	3,471	4,219	4,901	35
20	Lot F	North of Temple Ave	166	166	166	25
21	Valley Ave	North of Temple Ave	22,724	23,092	23,428	45
22	Valley Ave	South of Temple Ave	22,747	22,839	22,923	45
23	SR-57 SB Off Ramp	North of Temple Ave	18,802	19,032	19,242	55
24	SR-57 SB On Ramp	North of Temple Ave	1,374	1,374	1,374	55
25	SR-57 NB Off Ramp	South of Temple Ave	12,239	12,699	13,119	55
26	SR-57 NB On Ramp	South of Temple Ave	7,357	7,587	7,797	55
27	Amar Rd	West of Nogales St	37,296	37,434	37,560	45
28	Amar Rd	between Nogales St and Lemon Ave	28,103	28,333	28,543	45
29	Amar Rd	between Lemon Ave and Grand Ave	27,848	28,332	28,772	45
30	Temple Ave	between Grand Ave and Mt SAC Wy	29,832	30,890	31,856	40
31	Temple Ave	between Mt SAC Wy and Bonita Ave	27,232	28,360	29,388	40
32	Temple Ave	between Bonita Ave and Lot F	27,492	29,148	30,660	50
33	Temple Ave	between Lot F and Valley Blvd	28,085	29,743	31,253	50
34	Temple Ave	between Valley Blvd and SR-57 SB Ramps	29,897	31,003	32,009	45
35	Temple Ave	between SR-57 SB/NB Ramps	43,374	44,249	45,046	45
36	Temple Ave	East of SR-57 NB Off Ramp	39,749	39,933	40,101	45
37	I-10 WB Ramps	West of Grand Ave	14,229	14,620	14,977	55
38	I-10 EB Ramps	West of Grand Ave	9,952	10,343	10,700	55
39	Cameron Ave	West of Grand Ave	12,096	12,200	12,294	45
40	Mountaineer Rd	East of Grand Ave	6,173	7,797	9,275	35
41	San Jose Hills Rd	West of Grand Ave	5,166	5,190	5,210	30

Mt. SAC FMPU Traffic Analysis						
			A	**B**	**C**	
Link #	**Roadway**	**Extent**	**Existing ADT**	**2020 Existing + Project**	**2025 Existing + Project**	**Speed**
42	San Jose Hills Rd	East of Grand Ave	5,391	6,449	7,415	30
43	La Puente Rd	West of Grand Ave	13,222	13,498	13,750	40
44	La Puente Rd	East of Grand Ave	4,206	4,344	4,470	35
45	Valley Ave	West of Grand Ave	43,315	43,499	43,667	50
46	Valley Ave	East of Grand Ave	41,099	41,099	41,099	50
47	Baker Pkwy	West of Grand Ave	4,135	4,135	4,135	45
48	SR-60 EB Ramps	East of Grand Ave	18,684	18,776	18,860	55
49	SR-60 WB Off Ramp	West of Grand Ave	4,087	4,179	4,263	55
50	SR-60 WB On Ramp	East of Grand Ave	11,836	11,836	11,836	55