

**SECTION 3.10**  
**NOISE**

## 3.10 NOISE

### 3.10.1 INTRODUCTION

This section addresses noise related impacts of the proposed project and is based upon the Noise Technical Report for the 2007 SDSU Campus Master Plan Revision prepared by Dudek and Associates in May 2007. A copy of the technical report is located in **Appendix K** of this EIR.

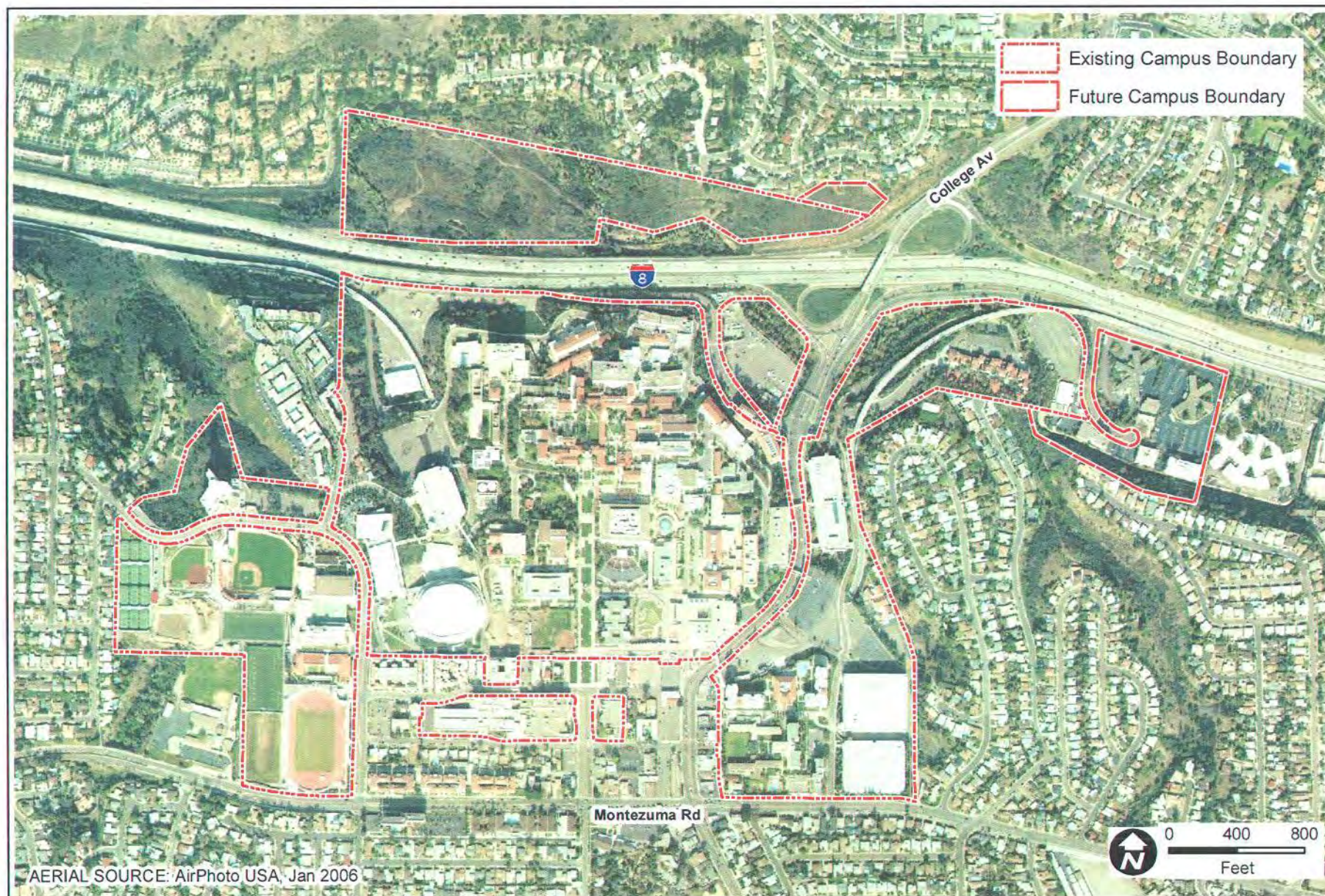
### 3.10.2 METHODOLOGY

The site of the proposed project is the SDSU campus and adjacent property located within the College Area and Navajo communities in the City of San Diego. The general boundaries of the site are Adobe Falls Drive to the north and Montezuma Road to the south. The east and west boundaries are located near 55th Street and approximately 1,000 feet east of Alvarado Court, respectively. The proposed project site is located approximately 10.3 miles from downtown San Diego. **Figure 3.10-1, Existing Land Use**, is an aerial photograph depicting existing land uses on the campus and in its vicinity.

Ambient noise measurements were conducted to quantify the existing daytime noise environment at five sites. Noise levels from the proposed construction activities have been obtained from reports prepared by the Environmental Protection Agency and Federal Transit Administration, and field data. The assumptions regarding hours of construction activities, construction equipment, duration of construction activities, *etc.*, are based on information provided by SDSU. The noise impact assessment utilized criteria established in the City of San Diego Progress Guide, General Plan and Noise Ordinance. The noise level associated with selected roadways was determined based on ambient noise measurements and the Federal Highway Administration's TNM 2.5 Traffic Noise Prediction Model.

Community sound levels are measured in terms of the A-weighted sound level. The A-weighted scale measures sound levels corresponding to the human frequency response. All sound levels discussed in this analysis are A-weighted. In community noise, it is necessary to use a noise scale that averages varying noise exposure over time and quantifies the results using a single number descriptor. Units of measure to evaluate the long-term characteristics of sound that are applicable to this analysis are the equivalent continuous sound level ("L<sub>eq</sub>") and the





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Figure 3.10-1  
Existing Land Use



Community Noise Equivalent Level ("CNEL"). The  $L_{eq}$  is a single-number representing the fluctuating sound level in decibels ("dB") over a specified period of time. It is a sound energy average of the fluctuating level and is equal to a constant unchanging sound level of that dB level. CNEL is a 24-hour average A-weighted sound level with ten dB added to noise during the nighttime hours from 10:00 p.m. to 7:00 a.m., and five dB added to the noise during the evening hours from 7:00 p.m. to 10:00 p.m. The five and ten dB penalties are applied to account for increased noise sensitivity during the evening and nighttime hours. Typical sound levels generated by various activities, and the listener's (receptor's) subjective impressions are listed in **Table 3.10-1, Typical Sound Levels Measured in the Environment and Industry.**

**Table 3.10-1**  
**Typical Sound Levels Measured in the Environment and Industry**

Noise Source	A-Weighted Sound Level in Decibels	Noise Environment	Subjective Impression
Civil Defense Siren (100 ft.)	130		
	120		Threshold of pain
	110	Rock Music Concert	
Pile Driver (50 ft.)	100		Very loud
Power Lawn Mower (3 ft.)			
Motorcycle (25 ft.)	90	Boiler Room	
Diesel Truck (50 ft.)		Printing Press Plant	
Garbage Disposal (3 ft.)	80		
Vacuum Cleaner (3 ft.)	70		Moderately loud
Normal Conversation (3 ft.)			
	60		
		Department Store	
Light Traffic (100 ft.)	50	Private Business Office	
Bird Calls (distant)	40		Quiet
Soft Whisper	30	Quiet Bedroom	
	20	Recording Studio	
	10		Threshold of hearing

### 3.10.3 EXISTING CONDITIONS

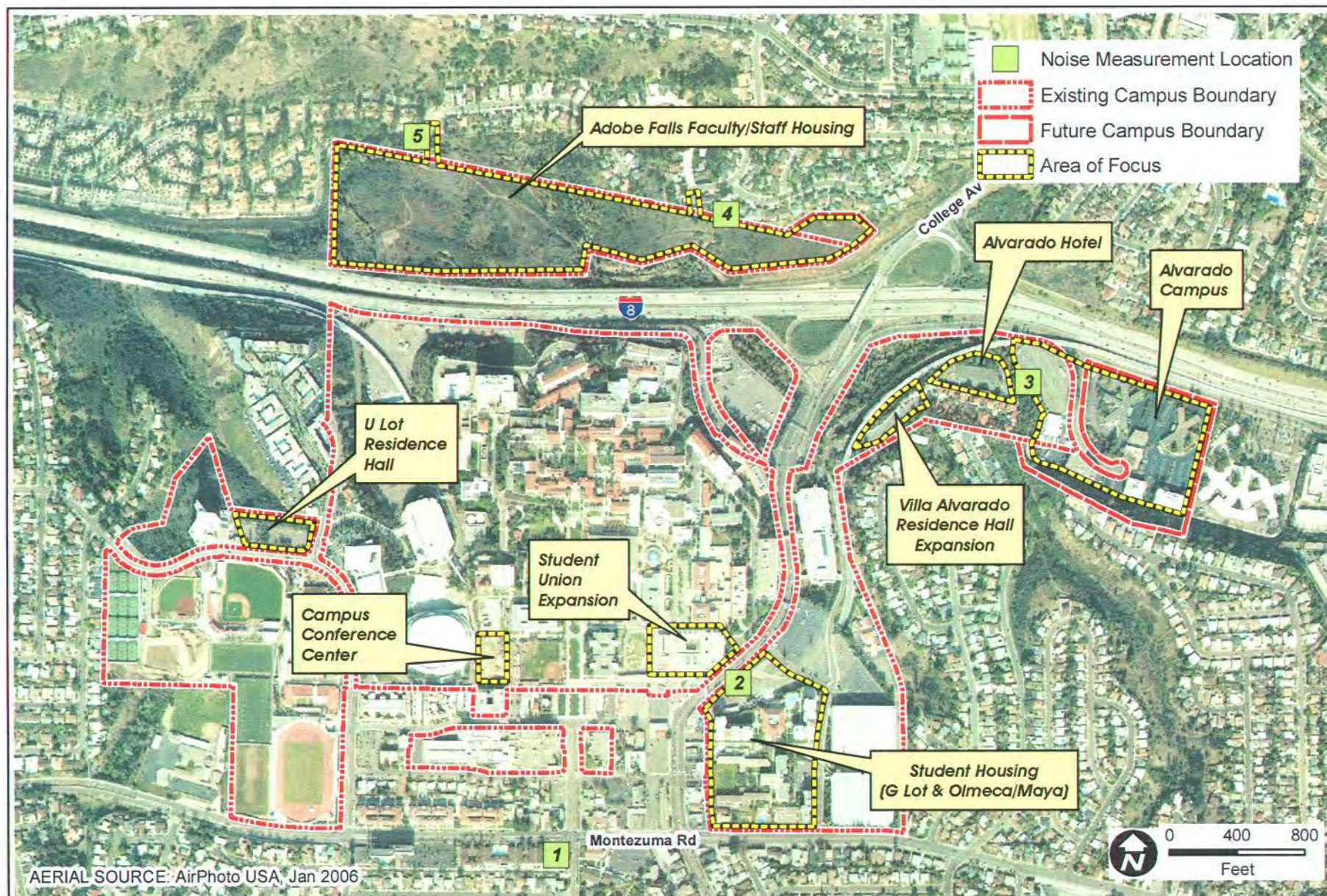
The primary noise source in the area of the proposed project is traffic along College Avenue, Montezuma Road, Alvarado Road, Interstate 8 ("I-8") and campus access roads. Noise is also generated by the San Diego Trolley line (which is located along portions of the campus), university students, and campus visitors attending various events held on site. Relatively speaking, the project site is not located in close proximity to any airports; the closest airport is Montgomery Field, located approximately three miles northwest of the site. While the campus is subject to occasional overflight from helicopters, commercial and general aviation aircraft, the campus is not located within the 60 dB CNEL noise contour of any airport and is not subject to aircraft noise in excess of regulatory limits.

#### 3.10.3.1 Ambient Noise Levels

Noise measurements were conducted at the proposed project site in November and December 2004 to determine the existing noise levels. ADT volume changes since 2004 are acoustically insignificant, resulting in noise level changes from 0 to 0.7 dB. The noise measurements were made using a calibrated Larson-Davis Laboratories Model 700 (S.N. 2132) integrating sound level meter equipped with a Type 2551 ½-inch pre-polarized condenser microphone with pre-amplifier. When equipped with this microphone, the sound level meter meets the current American National Standards Institute standard for a Type 1 precision sound level meter. The sound level meter was positioned at a height of approximately five-feet above the ground.

The noise measurement locations are depicted as Sites 1-5 on **Figure 3.10-2, Noise Measurement Locations**. These sites were selected to provide an unobstructed view to Montezuma Road (Site 1), College Avenue (Site 2), Alvarado Road and I-8 (Site 3) and I-8 (Sites 4 and 5). The measured average noise level was 68 dB at Site 1, 69 dB at Site 2, 70 dB at Site 3, 73 dB at Site 4 and 57 dB at Site 5. The measured average noise levels and the concurrent traffic volumes along the City roads are depicted in **Table 3.10-2, Measured Noise Level and Traffic Volumes**.







**Table 3.10-2  
Measured Noise Level and Traffic Volumes**

Site	Description	Date Time	L <sub>eq</sub> <sup>1</sup>	CNEL	Cars	MT <sup>2</sup>	HT <sup>3</sup>
1	Approximately 45 feet to the centerline of Montezuma Rd.	11/2/04 12:45 to 1:15 p.m.	68 dB	70	680	13	5
2	Approximately 45 ft. to centerline of College Blvd.	11/2/04 1:35 to 2:05 p.m.	69 dB	71	1,080	22	3
3	Approximately 300 ft. to the centerline of I-8	12/8/04 10:10 to 10:25 a.m.	70 dB	73	-	-	-
4	Approximately 500 ft. to the centerline of I-8	12/8/04 10:50 to 11:05 a.m.	73 dB	76	-	-	-
5	Approximately 1,000 ft. to the centerline of I-8	12/8/04 11:15 to 11:30 a.m.	57 dB	60	-	-	-

Notes: <sup>1</sup> Equivalent Continuous Sound Level (Time-Average Sound Level)

<sup>2</sup> Community Noise Equivalent Level

<sup>3</sup> Medium Trucks

<sup>4</sup> Heavy Trucks

The following is a description of the primary noise sources at each of the project component locations:

#### **3.10.3.1.1 Adobe Falls Faculty/Staff Housing**

The primary noise source is traffic along I-8. Based on the noise measurement shown in **Table 3.10-2**, the ambient noise levels at Sites 4 and 5 are 76 dB and 60 dB CNEL, respectively. The measured noise level at Site 5 is lower than at Site 4 because the location is below the elevation of I-8 and the majority of the highway noise is shielded by the existing earth embankment along the highway.

#### **3.10.3.1.2 Alvarado Campus**

The primary noise source is traffic along I-8, and to a lesser degree, along Alvarado Road. Based on the noise measurement shown in **Table 3.10-2**, the ambient noise level at Site 3 is 73 dB CNEL. The San Diego Trolley line is located adjacent to the site and generates substantially less noise than I-8.

#### **3.10.3.1.3 Alvarado Hotel**

The primary noise source is traffic along I-8, and to a lesser degree, along Alvarado Road. Based on the noise measurement shown in **Table 3.10-2**, the ambient noise level at Site 3 is 73 dB CNEL. The San Diego Trolley line is adjacent to this site and generates substantially less noise than I-8.

#### **3.10.3.1.4 Campus Conference Center**

There are no major sources of noise adjacent to the Campus Conference Center site. The site is located within the internal portion of the campus.

#### **3.10.3.1.5 Student Housing**

The primary noise source at the proposed Lot G residence hall is traffic along College Avenue. Based on the noise measurement shown in **Table 3.10-2**, the ambient noise level at Site 2 is 71 dB CNEL. Olmeca/Maya residence halls are primarily exposed to traffic noise along Montezuma Road and College Avenue. The Lot U residence hall is exposed to traffic noise along Remington Road, and, to a lesser extent, 55th Street. This area is also exposed to noise from the adjacent baseball field located across Remington Road. The Lot C Villa Alvarado Residence Hall is primarily exposed to traffic noise from I-8, College Avenue and Alvarado Road. The San Diego Trolley line is located adjacent to the Lot C Villa Alvarado Residence Hall location, but generates substantially less noise than I-8.

#### **3.10.3.1.6 Student Union Expansion**

The primary noise source in the area is generated by buses within the transit center located south of the site. The portion of the building proposed for expansion is located on the west side of the existing Aztec Center building and is shielded from traffic noise along College Avenue.

### **3.10.4 THRESHOLDS OF SIGNIFICANCE**

According to CEQA Guidelines Appendix G, a proposed project may have a potentially significant impact relative to noise if the project would result in any of the following conditions:

- a) 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;
- b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
- c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, exposure of people residing or working in the project area to excessive noise levels; or



- f) For a project within the vicinity of a private airstrip, exposure of people residing or working in the project area to excessive noise levels.

As indicated above, a project may be deemed to have a significant effect on the environment if it will substantially increase the ambient noise level for adjoining areas. However, this significance criterion does not define the phrase "substantial permanent increase in ambient noise," and it does not provide an impact threshold for potential on-site noise impacts.

The project site is located within the City of San Diego. The City has established noise criteria within both the City's General Plan and Municipal Code, as summarized below. San Diego State University is a state agency and is not required to comply with local standards. However, the analysis presented below considers local noise standards as they relate to compatibility with the proposed project, and utilizes these standards in applying the CEQA thresholds of significance set forth above.

***City of San Diego Progress Guide and General Plan Noise Guidelines:*** The City's Progress Guide and General Plan identify compatible exterior noise levels for various land use types. The maximum allowable noise exposure varies depending on the land use. The maximum acceptable exterior noise level for residential uses and other noise-sensitive uses (e.g., schools; libraries; hospitals; day care facilities; hotels; motels; parks) is 65dB. New single and multi-family residences are also required to meet an interior noise level of 45 dB within the habitable rooms.

***City of San Diego Municipal Code Noise Standards:*** The City's noise ordinance contains quantitative noise standards to reduce excessive noise within the City. The noise level limits are defined in terms of a one-hour average sound level. The allowable noise level limits depend upon the City's zoning district and time of day. The noise ordinance limits for low density residential development preclude one-hour average noise levels in excess of 50 dB between the hours of 7:00 a.m. to 7:00 p.m.; 45 dB between 7:00 p.m. and 10:00 p.m.; and 40 dB between 10:00 p.m. and 7:00 a.m. The City's noise ordinance limits are summarized in **Table 3.10-3, City of San Diego Municipal Code Noise Limits**, below.

**Table 3.10-3  
City of San Diego Municipal Code Noise Limits**

<b>Land Use Zone</b>	<b>Time Of Day</b>	<b>One-Hour Average Sound Level (Decibels)</b>
1) Residential: All R-1	7 a.m. to 7 p.m.	50
	7 p.m. to 10 p.m.	45
	10 p.m. to 7 a.m.	40
2) All R-2	7 a.m. to 7 p.m.	55
	7 p.m. to 10 p.m.	50
	10 p.m. to 7 a.m.	45
3) R-3, R-4 and all other Residential	7 a.m. to 7 p.m.	60
	7 p.m. to 10 p.m.	55
	10 p.m. to 7 a.m.	50
4) All Commercial	7 a.m. to 7 p.m.	65
	7 p.m. to 10 p.m.	60
	10 p.m. to 7 a.m.	60
5) Manufacturing all other Industrial, including Agricultural and Extractive Industry	any time	75

The City's noise ordinance criteria are applicable to stationary equipment, such as mechanical equipment. However, the noise ordinance criteria may not be applicable to outdoor activities (e.g., tennis; swimming; softball; baseball; playgrounds; *etc.*) as the City's Code Enforcement Department does not apply the City's noise ordinance to these types of outdoor activities. The City's noise ordinance also regulates construction activity. Construction activity is allowed Monday through Saturdays from 7:00 a.m. to 7:00 p.m., when not in excess of a 75 dB sound level.

**State of California.** Applicable to this project, the State of California has adopted a CNEL of 45 dB as the maximum acceptable interior environmental noise level for new attached residential facilities (*i.e.*, residence halls/dormitories; multi-family homes; hotels; *etc.*).

Based on the CEQA, City of San Diego, and state noise criteria identified above, the following thresholds of significance were developed for this impact analysis:

**Traffic:** A significant noise impact would result if the project would increase the existing noise level by three dB or more in areas where the existing noise level exceeds 65 dB CNEL. A significant noise impact would result if the project would exceed the City's General Plan 65 dB

CNEL exterior noise criteria at an outdoor use area of proposed residential uses. A significant noise impact would result if the project would exceed the State's interior 45 dB CNEL for multi-family dwelling units.

**Stationary Uses:** A significant noise impact would result if the stationary equipment generates noise levels exceeding the City's noise ordinance criteria.

**Temporary Construction Noise:** A significant noise impact would result if temporary construction noise impacts exceed 75 dB for 12 hours within a 24-hour period at residences.

### **3.10.5 PROJECT IMPACTS**

As described below, the project would result in short-term construction noise impacts, as well as long-term off-site traffic noise impacts. Also, traffic noise would affect the proposed project's residential uses.

#### **3.10.5.1 Construction Noise Impacts**

Construction activities and related noise levels generally would be the same regardless of the development component; therefore, the discussion below pertains to all project components.

Construction activities would be limited to the City's allowable hours of operation. The noise levels generated by construction equipment would vary greatly depending upon factors such as the type and specific model of equipment, the operation being performed, and the condition of the equipment. The average sound level of the construction activity also depends upon the amount of time that the equipment operates and the intensity of the construction during the time period.

Construction activities would involve several phases (*e.g.*, demolition; clearing and grubbing; grading; foundation construction, and finish construction). Construction equipment would include standard equipment, such as graders, scrapers, backhoes, loaders, cranes, dozers, water trucks, jack hammers, portable generators and air-compressors, and miscellaneous trucks. Specialized equipment use such as pile drivers is not anticipated to be frequent during construction of the project components. The construction contractor may mobilize more than one crew. Each of these areas would be in a different location and would affect different receptors.



The maximum noise level ranges for various pieces of construction equipment at a distance of 50 feet are depicted in **Figure 3.10-3, Typical Construction Equipment Noise Generation Levels**. The maximum noise levels at 50 feet would range from approximately 65 to 90 dB for the type of equipment normally used for this type of project. Construction noise in a well defined area typically attenuates at approximately six dB per doubling of distance. Therefore, at a distance of 100 feet, the maximum levels would decrease by approximately 6 dB.

#### **3.10.5.1.1 Adobe Falls Faculty/Staff Housing**

The closest off-site existing residences are located adjacent to the site along Arno Drive, Mill Peak Road and Adobe Falls Road. Multi-family residences are proposed to be constructed at both the Upper and Lower Village areas. These construction areas would be adjacent to existing residences. Therefore, construction activities at the site could result in potentially significant noise impacts at adjacent noise sensitive land uses.

#### **3.10.5.1.2 Alvarado Campus**

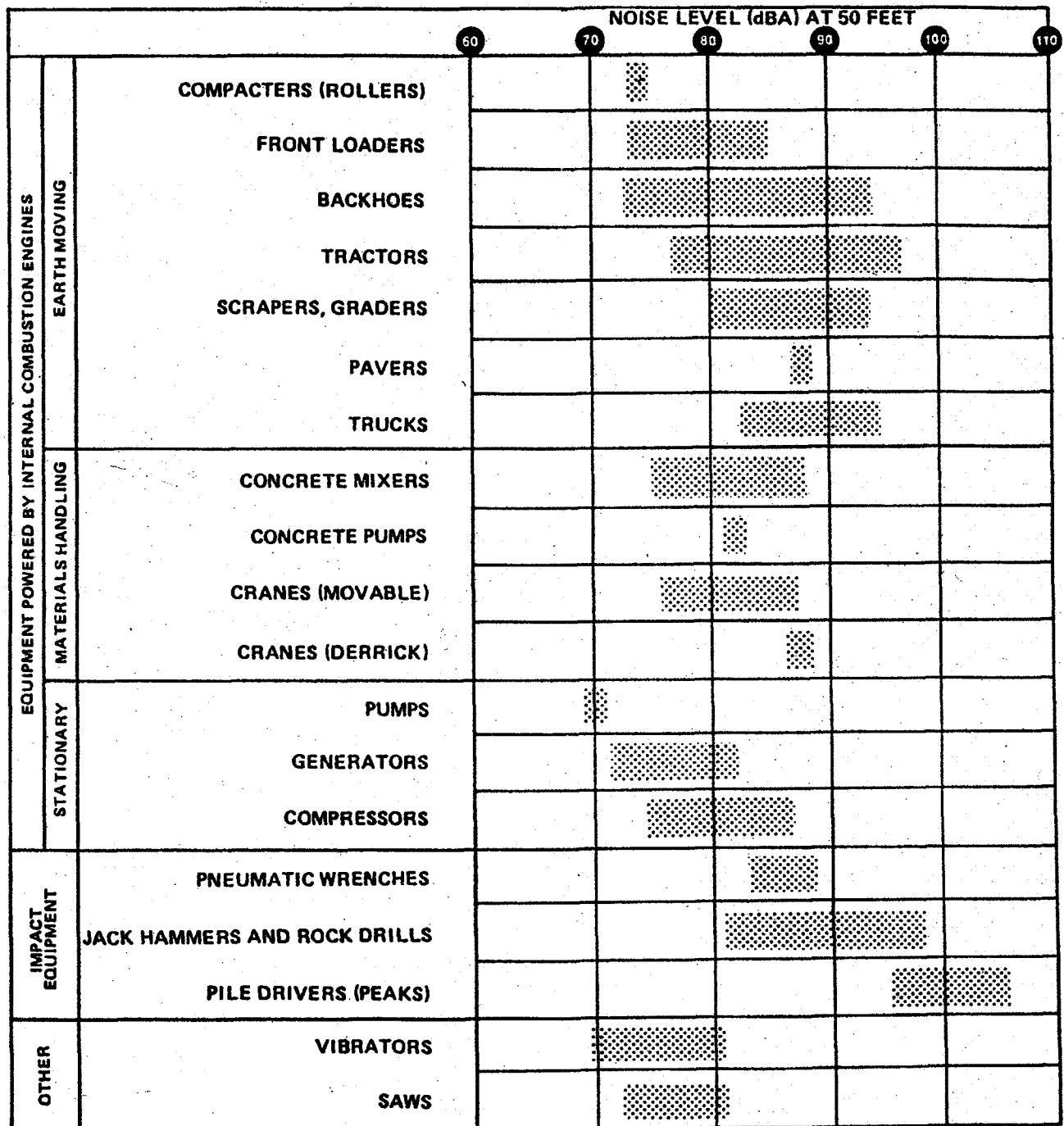
The closest off-site existing residences are located approximately 150 feet south of the site along Cleo Street and Brockbank Place. Alvarado Hospital Medical Center is located immediately east of the site. On-campus housing is located west of the site. Therefore, construction activities at the site could result in potentially significant noise impacts at adjacent noise sensitive land uses.

#### **3.10.5.1.3 Alvarado Hotel**

On-campus housing is located south of the site. Therefore, construction activities at the sites could result in potentially significant noise impacts at adjacent noise sensitive land uses.

#### **3.10.5.1.4 Campus Conference Center**

There are existing residences located approximately 100 feet southwest of the site. Therefore, construction activities at the site could result in potentially significant noise impacts at adjacent noise sensitive land uses.



SOURCE: EPA PB 206717, Environmental Protection Agency, Dec. 31, 1971,  
 "Noise from Construction Equipment & Operations"

#### **3.10.5.1.5 Student Housing**

**Lot G Residence Hall:** On-campus housing is located south of the site. Therefore, construction activities at the sites could result in potentially significant noise impacts at adjacent noise sensitive land uses.

**Olmecca/Maya Residence Hall:** On-campus housing is located adjacent to the site. Therefore, construction activities at the sites could result in potentially significant noise impacts at adjacent noise sensitive land uses.

**Lot U Residence Hall:** On-campus housing is located west of the site. Therefore, construction activities at the sites could result in potentially significant noise impacts at adjacent noise sensitive land uses.

#### **Lot C Villa Alvarado Residence Hall:**

Existing residences are located south of the site. Therefore, construction activities at the site could result in potentially significant noise impacts at adjacent potentially significant noise sensitive land uses.

#### **3.10.5.1.6 Student Union Expansion**

There are no residents in close proximity to the site. Therefore, construction activities would result in less than significant noise impacts.

### **3.10.5.2 Long-Term Off-Site Traffic Noise Impacts**

The project would generate additional traffic along various roads in the area. As discussed below, the project's traffic could increase the traffic noise levels resulting in potentially significant impacts.

#### **3.10.5.2.1 Adobe Falls Faculty/Staff Housing**

Upon build out of the Upper and Lower Villages, this project component would generate approximately 1,400 ADT. In the vicinity of the Adobe Falls Faculty/Staff Housing site, the traffic volume would increase along residential roads, including Rockhurst Drive, Del Cerro Boulevard, Genoa Drive, Capri Drive, Adobe Falls Road and Arno Drive. The traffic noise level increase associated with the project would range from approximately one to five dB as indicated in **Table 3.10-4, Off-Site Traffic Noise Level Increase**. The existing plus project noise level would be less than 65 dB CNEL along the various roads. Thus, the noise impact attributable to increased vehicle traffic would be less than significant.



**Table 3.10-4  
Off-Site Traffic Noise Level Increase**

<b>Street (Segment)</b>	<b>Existing ADT</b>	<b>Existing W/ Project ADT</b>	<b>CNEL Increase<sup>1</sup> (dB)</b>	<b>Existing W/ Project CNEL at 50 feet<sup>2</sup> (dB)</b>
Rockhurst Drive Lambda Drive to College Avenue	500	570	1	50
Lambda Drive Rockhurst Drive to College Avenue	600	670	<1	51
Adobe Falls Road North of Genoa Dr.	410	1450	5	54
Del Cerro Boulevard Genoa Dr. to Capri Dr. Capri Dr. to College Ave.	3,640 5,170	3,990 6,410	<1 1	59 61
Genoa Drive Arno Drive to Capri Drive	400	880	3	52
Capri Drive East of Arno Dr.	720	1,610	3	55
Arno Drive Helena Place to Capri Drive	370	1,260	5	54

Notes:

<sup>1</sup> Existing vs. existing plus project noise increase

<sup>2</sup> Assumes travel speed of 30 mph, 1% medium trucks and 0.5% heavy trucks.

#### **3.10.5.2.2 Alvarado Campus**

This project component would generate additional traffic along various roads, including Alvarado Road and I-8, in the vicinity of the site. The project's traffic noise impact is discussed in **Section 3.10.5.2.7** below.

#### **3.10.5.2.3 Alvarado Hotel**

This project component would generate additional traffic along various roads, including Alvarado Road and I-8, in the vicinity of the site. The project's traffic noise impact is discussed in **Section 3.10.5.2.7** below.

#### **3.10.5.2.4 Campus Conference Center**

This project component's traffic noise impact is discussed in **Section 3.10.5.2.7** below.

#### **3.10.5.2.5 Student Housing**

This project component would generate additional traffic along various roads, including Montezuma Road, College Avenue, Alvarado Road and I-8, in the vicinity of the site. The project's traffic noise impact is discussed in **Section 3.10.5.2.7** below.

#### **3.10.5.2.6 Student Union Expansion**

This project component's traffic noise impact is discussed in **Section 3.10.5.2.7** below.

#### **3.10.5.2.7 Traffic Noise Increase**

The majority of the additional traffic generated by the project would be along College Avenue, Montezuma Road, Alvarado Road, and I-8. **Table 3.10-5, Off-Site Traffic Noise Level Increase**, depicts the existing plus project noise level increase associated with the additional traffic volumes. As shown on **Table 3.10-5**, the additional traffic would increase the noise level along the adjacent roads by two dB CNEL or less. Thus, the additional project-generated traffic volume along the roads would not substantially increase the ambient noise level, and the project would not result in significant noise impacts to off-site uses relating to increased traffic noise. Similarly, implementation of the Adobe Falls Road/Waring Road alternate access route for access in to and out of the Adobe Falls Faculty/Staff Housing Lower Village component would not result in significant noise impacts to off-site uses due to increased traffic noise. As noted in EIR Section 3.14, *Transportation/Circulation*, the existing ADT level on Adobe Falls Road is 3,690. Based on this volume of traffic, existing ambient noise levels at adjacent residential sensitive receptors are well below 65 dB on Adobe Falls Road. Under the Lower Village alternate access scenario, the proposed project would add 2,800 ADT to Adobe Falls Road. This additional traffic would increase the noise level by approximately two dB CNEL. Thus, the additional project-generated traffic volume along Adobe Falls Road would not substantially increase the ambient noise levels, and the project would not result in significant noise impacts to off-site Adobe Falls Road uses due to the increased traffic volumes.

**Table 3.10-5  
Off-Site Traffic Noise Level Increase**

<b>Street (Segment)</b>	<b>Existing ADT</b>	<b>Existing + Project ADT</b>	<b>CNEL Increase<sup>1</sup> (dB)</b>	<b>Near-Term ADT</b>	<b>CNEL Increase<sup>2</sup> (dB)</b>	<b>Near-Term + Project ADT</b>	<b>CNEL Increase<sup>3</sup> (dB)</b>
College Boulevard							
North of I-8	29,530	31,700	<1	32,360	<1	32,910	<1
I-8 to Zura Way	39,400	45,970	1	45,800	1	47,260	1
Zura Way to	33,950	36,790	<1	37,480	<1	38,090	<1
Montezuma Road	30,220	31,930	<1	34,990	1	35,320	1
South of Montezuma Rd.							
Montezuma Road							
West of Collwood Blvd.	49820	51,100	<1	56,030	<1	56,210	<1
Blvd.	29,610	30,890	<1	31,990	<1	32,170	<1
Collwood Blvd. to 55 <sup>th</sup> Street	24,460	26,040	<1	30,990	1	31,160	1
55 <sup>th</sup> St. to College Boulevard	21,550	22,100	<1	23,870	<1	24,070	<1
East of College Boulevard							
Alvarado Road							
College Blvd. to	8,300	11,860	2	9,220	<1	9,490	1
Reservoir Dr.	9,890	11,960	1	11,040	<1	11,310	1
Reservoir Dr. to 70 <sup>th</sup> St.							
Interstate 8							
West of College Blvd.	238,000	240,910	<1	239,960	<1	240,660	<1
College Blvd. to 70 <sup>th</sup> St.	214,000	216,030	<1	219,040	<1	219,410	<1

Notes:

- <sup>1</sup> Existing vs. existing plus project noise increase
- <sup>2</sup> Existing vs. near-term without project
- <sup>3</sup> Existing vs. near-term plus project

### **3.10.5.3 Traffic Noise Impacts to the Project**

The proposed project's Adobe Falls Faculty/Staff Housing, Student Housing, and Alvarado Hotel components include residential dwellings that would be exposed to traffic noise. The potential impacts associated with that noise are discussed below.

#### **3.10.5.3.1 Adobe Falls Faculty/Staff Housing**

**Upper Village:** This project component includes multi-family residential uses that would be located adjacent to I-8. The future noise level would range up to 79 dB CNEL at portions of the Upper Village site. Outdoor usable areas are typically considered compatible with noise levels up to 65 dB CNEL. Therefore, significant noise impacts would result if outdoor useable areas



are exposed to noise levels greater than 65 dB CNEL. A review of the site plan prepared for this project component indicates that the exterior noise level would exceed 65 dB CNEL at the Upper Village site. Thus, the exterior noise impact would be significant. Mitigation is proposed that would require construction of a noise barrier. See **Figure 3.10-4, Adobe Falls Upper Village Noise Barrier and Height location.**

The State requires that interior noise levels not exceed a CNEL of 45 dB within habitable rooms of multi-family dwelling units. Typically, with the windows open, and using standard California construction materials and methods, the building shells provide approximately 15 dB of noise reduction. Therefore, rooms exposed to an exterior CNEL greater than 60 dB could result in an interior CNEL greater than 45 dB. As noted above, the Upper Village site is exposed to noise levels greater than 60 dB CNEL. Therefore, the rooms in the dwelling units could result in an interior CNEL greater than 45 dB. This noise level would result in a significant noise impact.

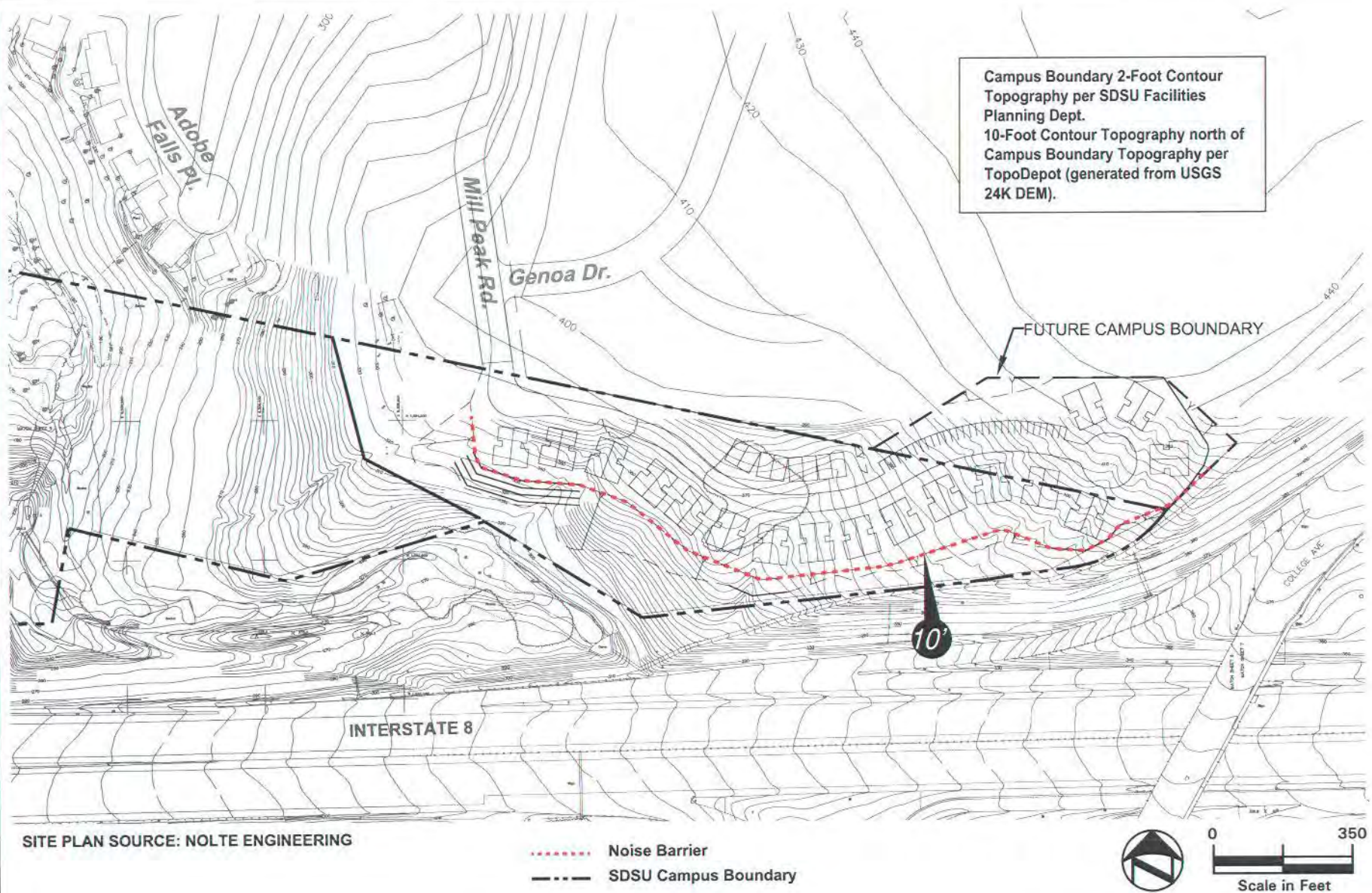
**Lower Village:** The noise level at the proposed residences at the Lower Village area could exceed 65 dB CNEL depending on the location of the residences. Therefore, the exterior and interior noise impacts would be significant if not mitigated.

#### **3.10.5.3.2 Student Housing**

**Lot G:** The residence hall would be located adjacent to College Avenue. The future noise level would range up to approximately 73 dB CNEL at the site. No new exterior usable space areas are proposed; thus, the exterior noise impact would be less than significant. The State requires that interior noise levels not exceed a CNEL of 45 dB within habitable rooms of multi-family dwelling units. The site is exposed to noise levels greater than 60 dB CNEL. Therefore, the dormitory rooms could result in an interior CNEL greater than 45 dB. This noise level would result in a significant noise impact.

**Olmeca/Maya Residence Hall:** The residence hall would be located adjacent to Montezuma Road. The future noise level would range up to approximately 72 dB CNEL at the site. No new exterior usable space areas are proposed, therefore, the exterior noise impact would be less than significant. The State requires that interior noise levels not exceed a CNEL of 45 dB within

Campus Boundary 2-Foot Contour  
Topography per SDSU Facilities  
Planning Dept.  
10-Foot Contour Topography north of  
Campus Boundary Topography per  
TopoDepot (generated from USGS  
24K DEM).



SITE PLAN SOURCE: NOLTE ENGINEERING

..... Noise Barrier  
- - - - - SDSU Campus Boundary



0 350  
Scale in Feet

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**Figure 3.10-4**  
**Adobe Falls Upper Village**  
**Noise Barrier & Height Location**

habitable rooms of multi-family dwelling units. The site is exposed to noise levels greater than 60 dB CNEL. Therefore, the dormitory rooms could result in an interior CNEL greater than 45 dB. This noise level would result in a significant noise impact.

**Lot U Residence Hall:** The residence hall would be adjacent to Remington Road. However, the traffic volume adjacent to this road is not anticipated to result in future noise levels in excess of 60 dB CNEL. Therefore, the noise impact would be less than significant.

**Lot C Villa Alvarado Residence Hall:** The residence hall would be exposed to traffic noise from I-8, Alvarado Road and College Avenue, as well as the San Diego Trolley. If exterior usable space areas are proposed, the exterior noise impact would be significant if not mitigated. The State requires that interior noise levels not exceed a CNEL of 45 dB within habitable rooms of multi-family dwelling units. The site is exposed to noise levels greater than 60 dB CNEL. Therefore, the dormitory rooms could result in an interior CNEL greater than 45 dB. This noise level would result in a significant noise impact.

#### **3.10.5.3.3 Alvarado Hotel**

The hotel would be located adjacent to I-8 and Alvarado Road. The primary noise source affecting the site is traffic from I-8. The future noise level would exceed 70 dB CNEL at the site. Outdoor usable areas are typically considered compatible with noise levels up to 65 dB CNEL. The outdoor usable area would be exposed to a future noise level of approximately 73 dB CNEL. Therefore, the noise impact would be significant.

The State requires that interior noise levels not exceed a CNEL of 45 dB within guest rooms of hotels. The noise level would exceed an exterior CNEL of 60 dB at the site. Therefore, the rooms in the dwelling units could result in an interior CNEL greater than 45 dB. This noise level would result in a significant noise impact.

#### **3.10.5.4 Other Noise Impacts**

As previously discussed, the site is not located in relative close proximity to any airports. The closest airport is Montgomery Field, which is approximately three miles northwest of the site. The campus is subject to occasional overflights by helicopters, as well as commercial and general aviation aircraft. However, the campus is not located within the 60 dB CNEL noise contour of any airport and is not subject to aircraft noise in excess of regulatory limits.

The project would not involve blasting or other groundbourne vibration; therefore, vibration and noise impacts related to these types of activities would not occur as a result of the project.

### **3.10.6 CUMULATIVE IMPACTS**

Construction noise impacts primarily affect the areas immediately adjacent to the construction site. Thus, although several construction activities may simultaneously occur at several areas on campus, the increased noise would not result in significant cumulative impacts. As previously shown in **Table 3.10-5**, the with project traffic noise impacts would be one dB or less along the adjacent roads. Thus, the increase in noise associated with cumulative traffic would not be cumulatively considerable and is less than significant.

### **3.10.7 MITIGATION MEASURES**

#### **3.10.7.1 Construction Noise**

Construction noise mitigation would be similar for each of project components that have been identified as resulting in a potentially significant impact (*i.e.*, Adobe Falls Faculty/Staff Housing, Alvarado Campus, Alvarado Hotel, Campus Conference Center and Student Housing.)

**NOI-1** During construction of the proposed Adobe Falls Faculty/Staff Housing, Alvarado Campus, Alvarado Hotel, Campus Conference Center, and Student Housing, SDSU, or its designee, shall comply with the City's noise ordinance criteria relative to construction activities so that the 12-hour average noise level does not exceed 75 dB at any noise-sensitive land use. Construction activity shall be limited to between the hours of 7:00 a.m. and 7:00 p.m., Monday through Saturday; construction is prohibited on Sunday or legal holidays. In addition, SDSU, or its designee, shall require that the construction contractor:

1. Locate noisy equipment as far as possible from the site boundaries and occupants of buildings;
2. Install stationary equipment in enclosures;
3. Equip all construction equipment, fixed or mobile, with properly operating and maintained muffler exhaust systems;
4. Locate stockpile and vehicle staging areas as far as practical from residences and occupants of buildings;

5. Use quieter equipment (*i.e.*, typically smaller pieces of equipment) while working immediately adjacent to the existing residences.

### **3.10.7.2 Traffic Noise**

The following measures are identified to mitigate the traffic noise impacts that would affect the project's residential components.

#### **3.10.7.2.1 Adobe Falls Faculty/Student Housing**

**NOI-2** During construction of the proposed Adobe Falls Upper Village, SDSU, or its designee, shall construct a ten-foot high noise barrier relative to the adjacent pad elevations to mitigate traffic noise levels to 65 dB CNEL or less at outdoor usable areas. The materials used in the construction of the barrier should have a minimum surface density of four pounds per square foot, and may consist of masonry material, 1/2-inch thick Plexiglas, 1/4-inch thick tempered glass, earthen berm, or a combination of these materials. The barrier must be designed so there are no openings or cracks.

Following construction of the noise barrier, SDSU, or its designee, shall undertake an interior noise study to ensure that interior noise levels would be mitigated to 45 dB CNEL or less. If the interior noise levels are in excess of 45 dB CNEL, noise abatement measures shall be incorporated into project construction, such as the installation of sound-rated windows along the building adjacent to I-8 and College Avenue, and the installation of air-conditioning or mechanical ventilation. Architectural design modifications also may be required to: (i) minimize the window area facing I-8, (ii) accommodate sound-rated windows and sliding glass doors with larger depths than standard windows, and (iii) allow upgrades to the exterior walls of the buildings.

**NOI-3** Prior to construction of the proposed Adobe Falls Lower Village, SDSU, or its designee, shall undertake a site-specific noise study for proposed sensitive uses to ensure that the exterior noise level does not exceed 65 dB CNEL at outdoor use areas. The noise study may suggest implementing mitigation measures such as orienting buildings to shield the outdoor use areas from I-8 traffic noise, as well as constructing sound walls or berms around the outdoor use areas. An interior noise study also shall be prepared prior to occupancy



to ensure that the interior noise level is mitigated to 45 dB CNEL or less with appropriate sound abatement measures incorporated.

#### **3.10.7.2.2 Alvarado Hotel**

- NOI-4** During construction of the proposed Alvarado Hotel, SDSU, or its designee, shall construct a minimum seven-foot high noise barrier around the common outdoor usable area (*i.e.*, pool area) to mitigate the traffic noise impact.

Additionally, following construction of the noise barrier, SDSU, or its designee, shall undertake the preparation of an interior noise study to ensure that the interior noise level would be mitigated to 45 dB CNEL or less. Noise abatement may be required, including installation of sound-rated windows along the building facades facing I-8, and the installation of air-conditioning or mechanical ventilation so that the windows could be closed at the occupant's discretion.

#### **3.10.7.2.3 Student Housing**

- NOI-5** During preparation of final site design plans for the Lot G Residence Hall, SDSU, or its designee, shall undertake an interior noise study to ensure that the interior noise level is mitigated to 45 dB CNEL or less. Noise abatement may be required, including installation of sound-rated windows along the building facades facing College Avenue, and air-conditioning or mechanical ventilation so that the windows could be closed at the occupant's discretion.

- NOI-6** During preparation of final site design plans for the Olmeca and Maya Residence Halls, SDSU, or its designee, shall undertake an interior noise study to ensure that the interior noise level is mitigated to 45 dB CNEL or less. Noise abatement may be required, including installation of sound-rated windows along the building facades facing College Avenue and Montezuma Road, and air-conditioning or mechanical ventilation so that the windows could be closed at the occupant's discretion.

- NOI-7** Prior to construction of the proposed Lot C Villa Alvarado Residence Hall Expansion, SDSU, or its designee, shall undertake the preparation of a site-

specific acoustical study to ensure that the exterior noise level does not exceed 65 dB CNEL at outdoor use areas. If suggested by the noise study, SDSU, or its designee, shall design the residence hall to shield the outdoor use area from I-8, College Avenue, and Alvarado Road traffic noise, and shall construct sound walls or berms around the outdoor use area if necessary. Additionally, SDSU, or its designee, shall undertake the preparation of an interior noise study to ensure that the interior noise level is mitigated to 45 dB CNEL or less, with all necessary noise abatement measures incorporated into the project design.

### **3.10.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION**

With implementation of the mitigation measures identified above, all potentially significant noise impacts would be reduced to less than significant.