

APPENDIX E: NOISE STUDY

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NOISE AND VIBRATION IMPACT ANALYSIS

**CALIFORNIA BAPTIST UNIVERSITY
CITY OF RIVERSIDE, RIVERSIDE COUNTY, CALIFORNIA**



December 2017

NOISE AND VIBRATION IMPACT ANALYSIS

CALIFORNIA BAPTIST UNIVERSITY SPECIFIC PLAN CITY OF RIVERSIDE, RIVERSIDE COUNTY, CALIFORNIA

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LIST OF ABBREVIATIONS AND ACRONYMS

$\mu\text{in/sec}$	microinches per second
μPa	micropascal
ADT	average daily traffic
CBU	California Baptist University
CBU SP	California Baptist University Specific Plan
CEQA	California Environmental Quality Act
City	City of Riverside
CNEL	Community Noise Equivalent Level
dB	decibels
dBA	A-weighted decibels
FHWA	Federal Highway Administration
ft	foot/feet
FTA	Federal Transit Administration
HP	horsepower
HVAC	heating, ventilation, and air conditioning
Hz	Hertz
in/sec	inches per second
L_{dn}	day-night average noise level
L_{eq}	equivalent continuous sound level
L_{max}	maximum instantaneous noise level
LSA	LSA Associates, Inc.
PPV	peak particle velocity
Project	California Baptist University Specific Plan Amendment No. 1
RAL	Riverside Municipal Airport
RCNM	Roadway Construction Noise Model
RMS	root-mean-square (velocity)
sf	square feet
Spec.	specification
SR	State Route
STC	Sound Transmission Class
U.S. EPA	United States Environmental Protection Agency
VdB	vibration velocity decibels
VMS	variable message sign
V_{ref}	reference velocity amplitude

INTRODUCTION

LSA Associates, Inc. (LSA) has completed a Noise Impact Analysis for the proposed amendment to the California Baptist University Specific Plan (CBU SP) in the City of Riverside (City), Riverside County, California. This Noise Impact Analysis examines potential impacts from noise sources in the Project vicinity, including State Route 91 (SR-91), local roadways, and airport noise through noise modeling and analysis. Noise modeling was conducted using the Federal Highway Administration (FHWA) highway traffic noise prediction model (FHWA RD-77-108) to assess the existing roadway traffic noise levels in the Project vicinity. Construction and operational noise levels were analyzed. Once operational, the Project would generate noise through stationary sources, such as heating and ventilation equipment and parking lot activities.

REGIONAL PROJECT LOCATION

The California Baptist University (CBU) encompasses approximately 167 acres developed with academic, residential, recreational, open space, parking and industrial uses (Figure 1 - Regional and Project Location and Figure 2 - Aerial View of the California Baptist University Project Site).

The University campus is located at 8432 Magnolia Avenue, bounded by Magnolia Avenue, Diana Avenue, Adams Street, and Monroe Street. The University campus also includes adjacent properties located outside of the CBU campus core, including the former site of the Lutheran School of the Cross located at 8775 Magnolia Avenue, the College of Health Sciences located at 3532 Monroe Street (the former Riverside Christian School campus), the Wellness Center located at 3626 Monroe Street (the former Carnegie Preschool), Parking Lot 24 to the north across Magnolia Avenue, and the Gordon and Jill Bournes College of Engineering located at 3739 Adams Street.

Land uses surrounding the subject area include single-family and multi-family residential, church, and convalescent uses to the north; single-family and multi-family residential, retail, church, and office uses to the east; single-family and multi-family residential, commercial, and school uses to the west; and SR-91 freeway, multi-family residential, church, school, and commercial uses to the south.

PROJECT DESCRIPTION

The campus has continued to grow, both in area and student population, since the adoption of the CBU SP in 2013. A comprehensive CBU SP Amendment is proposed by CBU to accommodate a projected increase in student enrollment to 12,000 total students by 2025 under a more urban-intensity type of development. The growth in student population is due to the expansion of the curriculum. The University's student population consists of four student categories: traditional students, graduate students, online students, and intensive English students.

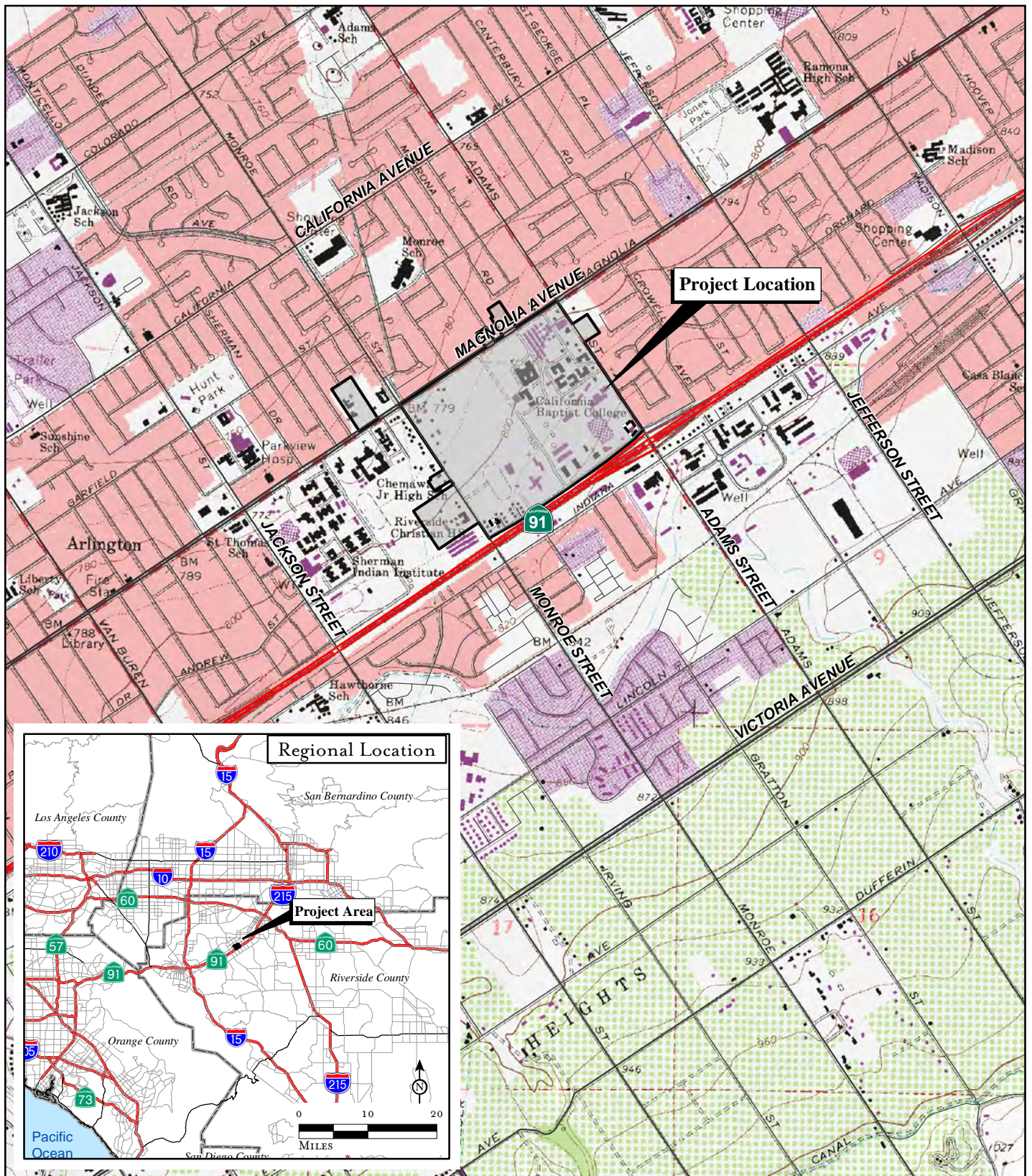
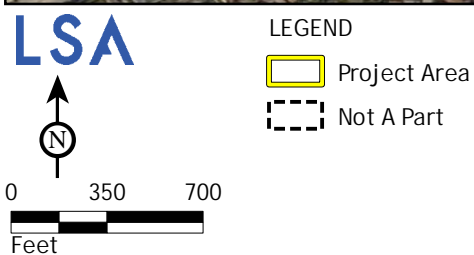


FIGURE 1



FIGURE 2



*California Baptist University
Specific Plan Amendment Project*

Aerial View of Project Area

SOURCE: Bing Aerial, 2016.

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FIGURE 3

LSA

California Baptist University
Specific Plan Amendment Project

Table A outlines the projected student enrollment growth over the next 10 years.

Table A: Student Population Projections

Student Population Projections					
Year	Traditional	Graduate	Online	Intensive English	Total Enrollment
2015	5,201	1,268	1,921	24	8,414
2020	6,201	1,543	2,421	44	10,209
2025	7,201	1,813	2,921	65	12,000

To achieve the University's goal of 12,000 enrolled students by the year 2025, new and reconfigured educational, housing, administrative support, athletic, and other facilities will be required within the main campus area. Support and ancillary facilities may also be established on University-owned properties not contiguous to the main campus. To accommodate the reconfigured educational fields and future academic purposes, CBU anticipates providing an additional 400,000 square feet of building area for academic, recreational, and student housing to the already existing 815,114 square feet of building area.

Future development within the CBU SP Planning Area will take into consideration the relationship and compatibility of the CBU campus with its surroundings. A single zoning district, the CBU Specific Plan Zone, is proposed for the entire Planning Area. Two subareas are defined, CBU SP-1 and CBU SP-2, to regulate building height, density, and setbacks. The CBU SP-1 and CBU SP-2 subareas permit the same land uses, but have different height and density standards. Figure 3 illustrates the proposed CBU SP-1 and CBU SP-2 subareas as well as the CBU Specific Plan Zone.

CHARACTERISTICS OF SOUND

Sound is increasing to such disagreeable levels in the environment that it can threaten quality of life. Noise is usually defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep.

To the human ear, sound has two significant characteristics: pitch and loudness. Pitch is generally an annoyance, while loudness can affect the ability to hear. Pitch is the number of complete vibrations, or cycles per second, of a wave resulting in the tone's range from high to low. Loudness is the strength of a sound that describes a noisy or quiet environment and is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound waves combined with the reception characteristics of the human ear. Sound intensity refers to how hard the sound wave strikes an object, which in turn produces the sound's effect. This characteristic of sound can be precisely measured with instruments. The analysis of a project defines the noise environment of the project area in terms of sound intensity and its effect on adjacent sensitive land uses.

Measurement of Sound

Sound intensity is measured through the A-weighted scale to correct for the relative frequency response of the human ear. That is, an A-weighted noise level de-emphasizes low and very high frequencies of sound similar to the human ear's de-emphasis of these frequencies. Unlike linear units (e.g., inches or pounds) decibels are measured on a logarithmic scale representing points on a sharply rising curve.

For example, 10 decibels (dB) is 10 times more intense than 1 dB, 20 dB is 100 times more intense than 1 dB, and 30 dB is 1,000 times more intense than 1 dB. Thirty decibels (30 dB) represents 1,000 times as much acoustic energy as 1 dB. The decibel scale increases as the square of the change, representing the sound pressure energy. A sound as soft as human breathing is about 10 times greater than 0 dB. The decibel system of measuring sound gives a rough connection between the physical intensity of sound and its perceived loudness to the human ear. A 10 dB increase in sound level is perceived by the human ear as only a doubling of the loudness of the sound. Ambient sounds generally range from 30 dB (very quiet) to 100 dB (very loud).

Sound levels are generated from a source, and their decibel level decreases as the distance from that source increases. Sound dissipates exponentially with distance from the noise source. For a single point source, sound levels decrease approximately 6 dB for each doubling of distance from the source. This drop-off rate is appropriate for noise generated by stationary equipment. If noise is produced by a line source (e.g., highway traffic or railroad operations) the sound decreases 3 dB for each doubling of distance in a hard site environment. Line source (noise in a relatively flat environment with absorptive vegetation) decreases 4.5 dB for each doubling of distance.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. The equivalent continuous sound level (L_{eq}) is the total sound energy of time-varying noise over a sample period. However, the predominant rating scales for human communities in the State of California are the L_{eq} and Community Noise Equivalent Level (CNEL) or the day-night average noise level (L_{dn}) based on A-weighted decibels (dBA). CNEL is the time-varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours), and a 10 dBA weighting factor applied to noises occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale but without the adjustment for events occurring during the evening hours. CNEL and L_{dn} are within 1 dBA of each other and are normally interchangeable. The City uses the CNEL noise scale for long-term noise impact assessment.

Other noise rating scales of importance when assessing the annoyance factor include the maximum instantaneous noise level (L_{max}), which is the highest exponential time-averaged sound level that occurs during a stated time period. The noise environments discussed in this analysis for short-term noise impacts are specified in terms of maximum levels denoted by L_{max} , which reflects peak operating conditions and addresses the annoying aspects of intermittent noise. It is often used together with another noise scale, or noise standards in terms of percentile noise levels, in noise ordinances for enforcement purposes. For example, the L_{10} noise level represents the noise level exceeded 10 percent of the time during a stated period. The L_{50} noise level represents the median

noise level. Half the time the noise level exceeds this level, and half the time it is less than this level. The L_{90} noise level represents the noise level exceeded 90 percent of the time and is considered the background noise level during a monitoring period. For a relatively constant noise source, the L_{eq} and L_{50} are approximately the same.

Noise impacts can be described in three categories. The first category includes audible impacts that refer to increases in noise levels noticeable to humans. Audible increases in noise levels generally refer to a change of 3 dB or greater because this level has been found to be barely perceptible in exterior environments. The second category, potentially audible, refers to a change in the noise level between 1 dB and 3 dB. This range of noise levels has been found to be noticeable only in laboratory environments. The last category includes changes in noise levels of less than 1 dB, which are inaudible to the human ear. Only audible changes in existing ambient or background noise levels are considered potentially significant.

Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, thereby affecting blood pressure and functions of the heart and the nervous system. In comparison, extended periods of noise exposure above 90 dBA would result in permanent cell damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear, even with short-term exposure. This level of noise is called the threshold of feeling. As the sound reaches 140 dBA, the tickling sensation is replaced by the feeling of pain in the ear (the threshold of pain). A sound level of 160–165 dBA will result in dizziness or loss of equilibrium. The ambient or background noise problem is widespread and generally more concentrated in urban areas than in outlying, less developed area. Table B lists definitions of acoustical terms, and Table C shows common sound levels and their sources.

Table B: Definitions of Acoustical Terms

Term	Definitions
Decibel, dB	A unit of measurement that denotes the ratio between two quantities that are proportional to power; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
Frequency, Hz	Of a function periodic in time, the number of times that the quantity repeats itself in 1 second (i.e., number of cycles per second).
A-Weighted Sound Level, dBA	The sound level obtained by use of A-weighting. The A-weighting filter deemphasizes the very low- and very high-frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. (All sound levels in this report are A-weighted, unless reported otherwise.)
L_{01} , L_{10} , L_{50} , L_{90}	The fast A-weighted noise levels that are equaled or exceeded by a fluctuating sound level 1%, 10%, 50%, and 90% of a stated time period.
Equivalent Continuous Noise Level, L_{eq}	The level of a steady sound that, in a stated time period and at a stated location, has the same A-weighted sound energy as the time-varying sound.
Community Noise Equivalent Level, CNEL	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 5 dBA to sound levels occurring in the evening from 7:00 PM to 10:00 PM and after the addition of 10 dBA to sound levels occurring in the night between 10:00 PM and 7:00 AM.
Day/Night Noise Level, L_{dn}	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 10 dBA to sound levels occurring in the night between 10:00 PM and 7:00 AM.
L_{max} , L_{min}	The maximum and minimum A-weighted sound levels measured on a sound level meter, during a designated time interval, using fast time averaging.
Ambient Noise Level	The all-encompassing noise associated with a given environment at a specified time; usually a composite of sound from many sources at many directions, near and far; no particular sound is dominant.
Intrusive	The noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content, as well as the prevailing ambient noise level.

Source: *Handbook of Acoustical Measurements and Noise Control* (Harris 1991).

Table C: Common Sound Levels and Their Noise Sources

Noise Source	A-Weighted Sound Level in Decibels	Noise Environments	Subjective Evaluations
Near Jet Engine	140	Deafening	128 times as loud
Civil Defense Siren	130	Threshold of Pain	64 times as loud
Hard Rock Band	120	Threshold of Feeling	32 times as loud
Accelerating Motorcycle at a Few Feet Away	110	Very Loud	16 times as loud
Pile Driver; Noisy Urban Street/Heavy City Traffic	100	Very Loud	8 times as loud
Ambulance Siren; Food Blender	95	Very Loud	—
Garbage Disposal	90	Very Loud	4 times as loud
Freight Cars; Living Room Music	85	Loud	—
Pneumatic Drill; Vacuum Cleaner	80	Loud	2 times as loud
Busy Restaurant	75	Moderately Loud	—
Near Freeway Auto Traffic	70	Moderately Loud	—
Average Office	60	Quiet	One-half as loud
Suburban Street	55	Quiet	—
Light Traffic; Soft Radio Music in Apartment	50	Quiet	One-quarter as loud
Large Transformer	45	Quiet	—
Average Residence without Stereo Playing	40	Faint	One-eighth as loud
Soft Whisper	30	Faint	—
Rustling Leaves	20	Very Faint	—
Human Breathing	10	Very Faint	Threshold of Hearing
—	0	Very Faint	—

Source: Compiled by LSA (2015).

CHARACTERISTICS OF GROUND-BORNE VIBRATION

Vibrating objects in contact with the ground radiate vibration waves through various soil and rock strata to the foundations of nearby buildings. As the vibration propagates from the foundation throughout the remainder of the building, the vibration of floors and walls may be perceptible from the rattling of windows or a rumbling noise. The rumbling sound caused by the vibration of room surfaces is called ground-borne noise. When assessing annoyance from ground-borne noise, vibration is typically expressed as root mean square (rms) velocity in units of decibels of 1 micro-inch per second.

To distinguish vibration levels from noise levels, the unit is written as “VdB.” Human perception to vibration starts at levels as low as 67 VdB and sometimes lower. Annoyances due to vibration in residential settings starts at approximately 70 VdB. Ground-borne vibrations are almost never annoying to people who are outdoors. Although the motion of the ground may be perceived,

without the effects associated with the shaking of the building, the motion does not provoke the same adverse human reaction.

Common sources of ground-borne vibration include trains and construction activities such as blasting, pile driving and operating heavy earthmoving equipment. Typical vibration source levels from construction equipment are shown in Table D. Although the table gives one level for each piece of equipment, it should be noted that there is a considerable variation in reported ground vibration levels from construction activities. The data provides a reasonable estimate for a wide range of soil conditions. In extreme cases, excessive ground-borne vibration has the potential to cause structural damage to buildings. For buildings considered of particular historical significance or that are particularly fragile structures, the damage threshold is approximately 96 VdB; the damage threshold for other structures is 100 VdB.¹

REGULATORY FRAMEWORK

The federal, State, and local framework for noise standards is outlined below. The City of Riverside has established standards in the General Plan and in the Municipal Code for land use projects that could potentially expose sensitive receptors to excessive noise levels.

Federal Regulations

U.S. Environmental Protection Agency

In 1972 Congress enacted the Noise Control Act. This act authorized the United States Environmental Protection Agency (U.S. EPA) to publish descriptive data on the effects of noise and establish levels of sound *requisite to protect the public welfare with an adequate margin of safety*. These levels are separated into health (hearing loss levels) and welfare (annoyance levels), as shown in Table E. The U.S. EPA cautions that these

Table D: Typical Vibration Source Levels for Construction Equipment

Equipment		PPV at 25 feet (in/sec)	Approximate VdB at 25 feet
Pile Driver	Upper range	1.518	112
(impact)	Typical	0.644	104
Pile Driver	Upper range	0.734	105
(sonic)	Typical	0.170	93
Clam shovel drop (slurry wall)		0.202	94
Hydromill	In soil	0.008	66
(slurry wall)	In rock	0.017	75
Vibratory roller		0.210	94
Hoe ram		0.089	87
Large bulldozer		0.089	87
Caisson drilling		0.089	87
Loaded trucks		0.076	86
Jackhammer		0.035	79
Small bulldozer		0.003	58

Notes: PPV= peak particle velocity; in/sec= inches per second
Source: Federal Transit Administration, 2006. *Transit Noise and Vibration Impact Assessment*. May.

Table E: Summary of U.S. EPA Noise Levels

Effect	Level	Area
Hearing loss	$L_{eq}(24) \leq 70$ dB	All areas.
Outdoor activity interference and annoyance	$L_{dn} \leq 55$ dB	Outdoors in residential areas and farms and other outdoor areas where people spend widely varying amounts of time and other places in which quiet is a basis for use.
	$L_{eq}(24) \leq 55$ dB	Outdoor areas where people spend limited amounts of time, such as school yards, playgrounds, etc.
Indoor activity interference and annoyance	$L_{eq} \leq 45$ dB	Indoor residential areas.
	$L_{eq}(24) \leq 45$ dB	Other indoor areas with human activities such as schools, etc.

Source: U.S. Environmental Protection Agency, 1974. *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. March.

¹ Harris, C.M., 1998. *Handbook of Acoustical Measurements and Noise Control*.

identified levels are not standards because they do not take into account the cost or feasibility of the levels.

For protection against hearing loss, 96 percent of the population would be protected if sound levels are less than or equal to an $L_{eq(24)}$ of 70 dBA. The “(24)” signifies an L_{eq} duration of 24 hours. The U.S. EPA activity and interference guidelines are designed to ensure reliable speech communication at about 5 feet in the outdoor environment. For outdoor and indoor environments, interference with activity and annoyance should not occur if levels are below 55 dBA and 45 dBA, respectively.

The noise effects associated with an outdoor L_{dn} of 55 dBA are summarized in Table F. At 55 dBA L_{dn} , 95 percent sentence clarity (intelligibility) may be expected at 11 feet, and no community reaction. However, 1 percent of the population may complain about noise at this level and 17 percent may indicate annoyance.

State of California

The State of California has established regulations that help prevent adverse impacts to occupants of buildings located near noise sources. Referred to as the *State Noise Insulation Standard*, it requires buildings to meet performance standards through design and/or building materials that would offset any noise source in the vicinity of the receptor. State regulations include requirements for the construction of new hotels, motels, apartment houses, and dwellings other than detached single-family dwellings that are intended to limit the extent of noise transmitted into habitable spaces. These requirements are found in the California Code of Regulations, Title 24 (known as the Building Standards Administrative Code), Part 2 (known as the California Building Code), Appendix Chapters 12 and 12A. For limiting noise transmitted between adjacent dwelling units, the noise insulation standards specify the extent to which walls, doors, and floor ceiling assemblies must block or absorb sound. For limiting noise from exterior noise sources, the noise insulation standards set an interior standard of 45 dBA CNEL in any habitable room with all doors and windows closed. In addition, the standards require preparation of an acoustical analysis demonstrating the manner in which dwelling units have been designed to meet this interior standard, where such units are proposed in an area with exterior noise levels greater than 60 dBA CNEL.

Table F: Summary of Human Effects in Areas Exposed to 55 dBA L_{dn}

Type of Effects	Magnitude of Effect
Speech – Indoors	100 percent sentence intelligibility (average) with a 5 dB margin of safety.
Speech – Outdoors	100 percent sentence intelligibility (average) at 1.4 feet. 99 percent sentence intelligibility (average) at 3.2 feet. 95 percent sentence intelligibility (average) at 11.5 feet.
Average Community Reaction	None evident; 7 dB below level of significant complaints and threats of legal action and at least 16 dB below “vigorous action.”
Complaints	1 percent dependent on attitude and other non-level related factors.
Annoyance	17 percent dependent on attitude and other non-level related factors.
Attitude Towards Area	Noise essentially the least important of various factors.

Source: U.S. Environmental Protection Agency, 1974. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. March.

The State has also established land use compatibility guidelines for determining acceptable noise levels for specified land uses. The City has adopted and modified the State's land use compatibility guidelines, as discussed below.

Local Regulations

City of Riverside General Plan

The City of Riverside addresses noise in the Noise Element of the General Plan. The goals and policies in the Noise Element aim to minimize noise levels from point sources throughout the community, minimize transportation-related noise, and mitigate the effects of noise to provide a safe and healthful environment. The City also sets noise and land use compatibility guidelines, as shown in Table G.

Table G: Land Use Noise Compatibility Criteria

Land Use Category	Community Noise Equivalent Level (CNEL) or Day-Night Level (Ldn), dB						
	55	60	65	70	75	80	85
Single Family Residential*							
Infill Single Family Residential*							
Commercial- Motels, Hotels, Transient Lodging							
Schools, Libraries, Churches, Hospitals, Nursing Homes							
Amphitheaters, Concert Hall, Auditorium, Meeting Hall							
Sports Arenas, Outdoor Spectator Sports							
Playgrounds, Neighborhood Parks							
Golf Courses, Riding Stables, Water Rec., Cemeteries							
Office Buildings, Business, Commercial, Professional							
Industrial, Manufacturing Utilities, Agriculture							
Freeway Adjacent Commercial, Office, and Industrial Uses.							

Nature of the noise environment where the CNEL or Ldn level is:

Below 55 dB
Relatively quiet suburban or urban areas, no arterial streets within 1 block, no freeways within 1/4 mile.

55-65 dB
Most somewhat noisy urban areas, near but not directly adjacent to high volumes of traffic.

65-75 dB
Very noisy urban areas near arterials, freeways or airports.

75+ dB
Extremely noisy urban areas adjacent to freeways or under airport traffic patterns. Hearing damage with constant exposure outdoors.

Normally Acceptable
Specific land use is satisfactory, based on the assumption that any building is of normal conventional construction, without any special noise insulation requirements.

Conditionally Acceptable
New construction or development should be undertaken only after a detailed analysis of noise reduction requirements is made and needed noise insulation features included in design. Conventional construction, but with closed windows and fresh air supply systems or 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 noise reduction requirements must be made and needed noise insulation features included in design.

Conditionally Unacceptable
New construction or development should generally not be undertaken, unless it can be demonstrated that noise reduction requirements can be employed to reduce noise impacts to an acceptable level. If new construction or development does proceed, a detailed analysis of noise reduction requirements must be made and needed noise insulation features included in the design.

The Community Noise Equivalent Level (CNEL) and Day-Night Noise Level (Ldn) are measures of the 24-hour noise environment. They represent the constant A-weighted noise level that would be measured if all the sound energy received over the day were averaged. In order to account for the greater sensitivity of people to noise at night, the CNEL weighting includes a 5-decibel penalty on noise between 7:00 p.m. and 10:00 p.m. and a 10-decibel penalty on noise between 10:00 p.m. and 7:00 a.m. of the next day. The Ldn includes only the 10-decibel weighting for late-night noise events. For practical purposes, the two measures are equivalent for typical urban noise environments.

* For properties located within airport influence areas, acceptable noise limits for single family residential uses are established by the Riverside County Airport Land Use Compatibility Plan.

Source: California Office of Noise Control, Guidelines for the Preparation and Content of Noise Element of the General Plan (February 1976).

City of Riverside Municipal Code

The City of Riverside addresses stationary and construction noise in Chapter 7 of the Municipal Code.²

General Sound Level Standards. Sections 7.25.010 and 7.30.015 of the City's Municipal Code limit interior and exterior noise attributable from stationary sources. No person shall create any sound, or allow the creation of any sound, on any property that causes a change in the sound level on any other occupied property to exceed the sound level standards as identified below. Table H shows the City's exterior noise standards and Table I shows the City's interior noise level standards.

Table H: Exterior Noise Standards

Exterior Noise Standards		
Land Use Category	Time Period	Noise Level
Residential	Night (10:00 p.m. to 7:00 a.m.)	45 dBA
	Day (7:00 a.m. to 10:00 p.m.)	55 dBA
Office/commercial	Any time	65 dBA
Industrial	Any time	70 dBA
Community support	Any time	60 dBA
Public recreation facility	Any time	65 dBA
Nonurban	Any time	70 dBA

Source: City of Riverside, 2017. Municipal Code Section 7.25.010.

Any noise exceeding the following is prohibited:

- The exterior noise standard of the applicable land use category, plus up to five decibels, for a cumulative period of more than thirty minutes in any hour; or
- The exterior noise standard of the applicable land use category, plus five decibels for a cumulative period of more than fifteen minutes in any hour; or
- The exterior noise standard of the applicable land use category, plus ten decibels, for a cumulative period of more than five minutes in any hour; or
- The exterior noise standard of the applicable land use category, plus fifteen decibels, for a cumulative period of more than one minute in any hour; or
- The exterior noise standard for the applicable land use category, plus twenty decibels or the maximum measured ambient noise level, for any period of time.

² Riverside, City of, 2017. *City of Riverside, California Code of Ordinances*.

Table I: Interior Noise Standards

Exterior Noise Standards		
Land Use Category	Time Period	Noise Level
Residential	Night (10:00 p.m. to 7:00 a.m.)	35 dBA
	Day (7:00 a.m. to 10:00 p.m.)	45 dBA
School	7:00 a.m. to 10:00 p.m. (while school is in session)	45 dBA
Hospital	Any time	45 dBA

Source: City of Riverside, 2017. Municipal Code Section 7.30.015.

Section 7.25.010 also identifies air-conditioning noise and specifies that where the intruding noise source is an air-conditioning unit or refrigeration system, the exterior noise level when measured at the property line shall not exceed sixty dBA for units installed before 1-1-80 and fifty-five dBA for units installed after 1-1-80.

Construction Hours. Section 7.35.010(B)(5) of the City's Municipal Code identifies that construction noise is exempt from the City's noise standards when activities occur between the hours of 7:00 a.m. to 7:00 p.m. on weekdays and 8:00 a.m. to 5:00 p.m. on Saturdays. Construction activities are not allowed on Sunday or Federal holidays.

EXISTING SETTING

Overview of the Existing Noise Environment

In Riverside, vehicle traffic is the primary source of noise. Other significant local noise sources include railroad noise, airport noise, industrial noise, construction noise, mechanical equipment noise, portable power noise, and amplified sound. The General Plan includes future 2025 noise contours attributable to roadway traffic, freeway traffic, railroad, and airport activity. As identified in Figure N-8 of the General Plan, due to the adjacent freeway, the southern portion of the project site is subject to noise levels reaching 70 dBA CNEL, the middle portion of the project site is subject to noise levels reaching 65 dBA CNEL, and the northern portion of the project site is subject to noise levels reaching 60 dBA CNEL.

Sensitive Receptors

Certain land uses are considered more sensitive to noise than others. Examples of these include residential areas, educational facilities, hospitals, childcare facilities, and senior housing. The project site is located within an area that is predominantly developed with single-family homes, apartments, offices, schools, open space, and religious institutions.

The nearest sensitive receptors to the project site are existing on-campus student housing and academic facilities within the Specific Plan area, as well as existing educational facilities (Chemawa Middle School located at 8830 Magnolia Avenue and Sherman Indian High School located at 9010 Magnolia Avenue), single-family and multi-family residences located adjacent to the properties within the CBU SP Planning Area, some of which are between 10 and 25 feet from select CBU

properties (e.g., River Springs Charter School located at 8775 Magnolia Avenue and Engineering Building located at 3739 Adams Street, respectively).

Aircraft Noise

Airport related noise levels are primarily associated with aircraft engine noise made while aircraft are taking off, landing, or running their engines while still on the ground. The closest airport to CBU is Riverside Municipal Airport (RAL) located approximately 1.3 miles north of the Project. Aircraft noise is occasionally audible at the project site; however, no portion of the project site lies within the 55 dBA CNEL noise contours of the airport.

Vehicular Traffic Noise

Motor vehicles with their distinctive noise characteristics are a major source of noise in Riverside. The amount of noise varies according to many factors, such as volume of traffic, vehicle mix (percentage of cars and trucks), average traffic speed, and distance from the observer. Major contributing roadway noise sources in the project vicinity include SR 91, Adams Street, Magnolia Avenue, Monroe Street, and Diana Avenue, Campus View Drive, Garfield Street, Indiana Avenue, Jackson Street, Jefferson Street, Lincoln Avenue, and Overland Street.

Existing roadway traffic noise levels in the project vicinity were assessed using the Federal Highway Administration (FHWA) highway traffic noise prediction model (FHWA RD-77-108). This model uses a typical vehicle mix for urban/suburban areas in California and requires parameters, including traffic volumes, vehicle speed, and roadway geometry, to compute typical equivalent noise levels during daytime, evening, and nighttime hours. The resultant noise levels are weighted and summed over 24-hour periods to determine the community noise equivalent level (CNEL) values. Existing traffic noise contours along modeled roadway segments are shown in Table J. These noise levels represent the worst-case scenario, which assumes that no shielding is provided between the traffic and the location where the noise contours are drawn. Appendix A provides the specific assumptions used in developing these noise levels and model printouts.

Table J: Existing Traffic Noise Levels Without Project

Roadway Segment	ADT	Centerline to 70 dBA CNEL (feet)	Centerline to 65 dBA CNEL (feet)	Centerline to 60 dBA CNEL (feet)	CNEL (dBA) 50 feet from Centerline of Outermost Lane
Magnolia Avenue - Jackson St to Overland St	25,078	58	115	244	68.1
Magnolia Avenue - Overland St to Monroe St	24,128	56	112	238	67.9
Magnolia Avenue - Monroe St to Campus Bridge Dr	24,089	56	112	237	67.9
Magnolia Avenue - Campus Bridge Dr to Adams St	27,104	60	121	257	68.4
Magnolia Avenue - Adams St to Jefferson St	27,045	60	121	256	68.4
Monroe Street - Garfield to Magnolia Ave	10,129	< 50	62	133	65.7

Table J: Existing Traffic Noise Levels Without Project

Roadway Segment	ADT	Centerline to 70 dBA CNEL (feet)	Centerline to 65 dBA CNEL (feet)	Centerline to 60 dBA CNEL (feet)	CNEL (dBA) 50 feet from Centerline of Outermost Lane
Monroe Street - Magnolia Ave to Diana Ave	8,983	< 50	58	123	64.6
Monroe Street - Diana Ave to Indiana Ave	9,212	< 50	59	125	64.7
Adams Street - Garfield St to Magnolia Ave	20,172	< 50	100	211	67.2
Adams Street - Magnolia Ave to Briarwood Dr	28,449	62	125	265	68.7
Adams Street - Briarwood Dr to Diana Ave	27,957	61	123	262	68.6
Adams Street - Diana Ave to Freeway 91 Ramps	27,939	61	123	262	68.6
Adams Street - Freeway 91 Ramps to Indiana Ave	27,074	60	121	256	68.4
Adams Street - Indiana Ave to Lincoln Ave	14,926	< 50	83	173	65.8
Diana Avenue - Monroe St to Campus View	2,689	< 50	< 50	55	59.9
Diana Avenue - Campus View to Adams St	3,522	< 50	< 50	66	61.1
Campus Bridge Drive - Magnolia Ave to Lancer Lane	8,688	< 50	< 50	< 50	55.2
Campus View - Lancer Lane to Diana Ave	3,301	< 50	< 50	< 50	51.0
Lancer Lane - Campus Bridge Dr to Adams St	2,830	< 50	< 50	< 50	49.0

Source: Rick Engineering (December 2016) and Compiled by LSA (June 2017).

Note: Traffic noise within 50 feet of the roadway centerline should be evaluated with site-specific information.

ADT = average daily traffic

CNEL = Community Noise Equivalent Level

dBA = A-weighted decibels

THRESHOLDS OF SIGNIFICANCE

Thresholds of Significance for Noise

Based on *Guidelines for the Implementation of the California Environmental Quality Act (CEQA)*, Appendix G, Public Resource Code Sections 15000–15387, a project will normally have a significant effect on the environment related to noise if it will substantially increase the ambient noise levels for adjoining areas or conflict with adopted environmental plans and the goals of the community in which it is located. The applicable noise standards governing the project site are the criteria in the Noise Element of the Riverside General Plan and Chapter 7 of the City's Municipal Code.

IMPACTS

Short-Term Construction-Related Impacts

Construction Noise Impacts

Construction associated with implementation of the CBU SP would occur over a period of approximately 8 years. Construction activities associated with the CBU SP could result in substantial temporary or periodic increases in ambient noise levels at development sites throughout the CBU campus. Maximum construction noise would be short-term, generally intermittent depending on

the construction phase, and variable depending on receiver distance from the active construction zone. The duration of noise impacts generally would be from one day to several days depending on the phase of construction. The level and types of noise impacts that would occur during construction are described below.

Short-term noise impacts would occur during grading and site preparation activities. Table K lists typical construction equipment noise levels (L_{max}) recommended for noise impact assessments, based on a distance of 50 feet between the equipment and a noise receptor, obtained from the FHWA Roadway Construction Noise Model. Construction-related short-term noise levels would be higher than existing ambient noise levels currently in the project area but would no longer occur once construction of the project is completed.

Table K: Noise Emission Reference Levels and Usage Factors

Equipment Description	Acoustical Usage Factor ¹	Predicted L_{max} at 50 feet (dBA, slow) ²	Actual Measured L_{max} at 50 feet (dBA, slow) ³
All Other Equipment > 5 HP	50	85	N/A ⁴
Auger Drill Rig	20	85	84
Backhoe	40	80	78
Bar Bender	20	80	N/A
Blasting	N/A	94	N/A
Boring Jack Power Unit	50	80	83
Chain Saw	20	85	84
Clam Shovel (dropping)	20	93	87
Compactor (ground)	20	80	83
Compressor (air)	40	80	78
Concrete Batch Plant	15	83	N/A
Concrete Mixer Truck	40	85	79
Concrete Pump Truck	20	82	81
Concrete Saw	20	90	90
Crane	16	85	81
Dozer	40	85	82
Drill Rig Truck	20	84	79
Drum Mixer	50	80	80
Dump Truck	40	84	76
Excavator	40	85	81
Flat Bed Truck	40	84	74
Front-End Loader	40	80	79
Generator	50	82	81
Generator (< 25 kVA, VMS Signs)	50	70	73
Gradall	40	85	83
Grader	40	85	N/A
Grapple (on backhoe)	40	85	87
Horizontal Boring Hydraulic Jack	25	80	82
Hydra Break Ram	10	90	N/A
Impact Pile Driver	20	95	101
Jackhammer	20	85	89
Man Lift	20	85	75
Mounted Impact Hammer (hoe ram)	20	90	90
Pavement Scarifier	20	85	90

Table K: Noise Emission Reference Levels and Usage Factors

Equipment Description	Acoustical Usage Factor ¹	Predicted L _{max} at 50 feet (dBA, slow) ²	Actual Measured L _{max} at 50 feet (dBA, slow) ³
Paver	50	85	77
Pickup Truck	40	55	75
Pneumatic Tools	50	85	85
Pumps	50	77	81
Refrigerator Unit	100	82	73
Rivet Buster/Chipping Gun	20	85	79
Rock Drill	20	85	81
Roller	20	85	80
Sand Blasting (single nozzle)	20	85	96
Scraper	40	85	84
Sheers (on backhoe)	40	85	96
Slurry Plant	100	78	78
Slurry Trench Machine	50	82	80
Soil Mix Drill Rig	50	80	N/A
Tractor	40	84	N/A
Vacuum Excavator (Vac-Truck)	40	85	85
Vacuum Street Sweeper	10	80	82
Ventilation Fan	100	85	79
Vibrating Hopper	50	85	87
Vibratory Concrete Mixer	20	80	80
Vibratory Pile Driver	20	95	101
Warning Horn	5	85	83
Welder/Torch	40	73	74

Source: FHWA Highway Construction Noise Handbook, Table 9.1 (FHWA 2006).

Note: Noise levels reported in this table are rounded to the nearest whole number.

¹ Usage factor is the percentage of time during a construction noise operation that a piece of construction equipment is operating at full power.

² Maximum noise levels were developed based on Specification (Spec.) 721.560 from the Central Artery/Tunnel (CA/T) program to be consistent with the City of Boston's Noise Code for the "Big Dig" project.

³ The maximum noise level was developed based on the average noise level measured for each piece of equipment during the CA/T program in Boston, Massachusetts.

⁴ Since the maximum noise level based on the average noise level measured for this piece of equipment was not available, the maximum noise level developed based on Spec 721.560 would be used.

dBA = A-weighted decibels

HP = horsepower

L_{max} = maximum instantaneous noise level

kVA = kilovolt-amperes

N/A = not applicable

RCNM = Roadway Construction Noise Model

VMS = variable message sign

Two types of short-term noise impacts could occur during construction of the proposed project. The first type involves construction crew commutes and the transport of construction equipment and materials to the site for the proposed project, which would incrementally increase noise levels on roads leading to the site. As shown in Table K, there would be a relatively high single-event noise exposure potential at a maximum level of 84 dBA L_{max} with trucks passing at 50 feet.

The second type of short-term noise impact is related to noise generated during excavation, grading, and construction on the project site. Construction is performed in discrete steps, or phases, each with its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on site. Therefore, the noise

levels vary as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase.

Table K lists maximum noise levels recommended for noise impact assessments for typical construction equipment, based on a distance of 50 feet between the equipment and a noise receptor. Typical maximum noise levels range up to 86 dBA L_{max} at 50 feet during the noisiest construction phases. The site preparation phase, including excavation and grading of the site, tends to generate the highest noise levels because earthmoving machinery is the noisiest construction equipment. Earthmoving equipment includes excavating machinery such as backfillers, bulldozers, draglines, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full-power operation followed by 3 or 4 minutes at lower power settings.

The nearest sensitive receptors to the project site are existing on-campus student housing and academic facilities on the project site itself, as well as existing educational facilities (Chemawa Middle School located at 8830 Magnolia Avenue and Sherman Indian High School located at 9010 Magnolia Avenue), single-family and multi-family residences located adjacent to the properties within the CBU SP Planning Area, some of which are between 10 and 25 feet from select CBU properties (e.g., River Springs Charter School located at 8775 Magnolia Avenue and Engineering Building located at 3739 Adams Street, respectively). At 10 feet, there would be an increase of approximately 14 dBA from the reduced distance compared to the noise level measured at 50 feet from the active construction area. Therefore, the closest sensitive receptors may be subject to short-term construction noise reaching 100 dBA L_{max} when construction is occurring at the project site boundary. Construction noise is exempt from noise standards by the City when activities occur between the hours of 7:00 a.m. and 7:00 p.m. on weekdays and 8:00 a.m. and 5:00 p.m. on Saturdays. Construction activity is not allowed on Sunday or federal holidays.

As discussed above, construction noise would result in a temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project. As identified above, construction noise is exempt from the City's noise standards when activities occur between the permitted hours, construction could still result in disturbances of noise sensitive receptors in the project vicinity, resulting in a substantial temporary increase in noise levels. Therefore, to reduce any potential impact to nearby sensitive receptors, standard best management construction noise reduction measures should be implemented, as identified as Mitigation Measure NOISE-1 below.

Vibration Impacts

Vibration refers to ground-borne noise and perceptible motion. Ground-borne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors. Vibration energy propagates from a source, through intervening soil and rock layers, to the foundations of nearby buildings. The vibration then propagates from the foundation throughout the remainder of the structure. Building vibration may be perceived by the occupants as the motion of building surfaces, rattling of items on shelves or hanging on walls, or as a low-frequency rumbling noise. The rumbling noise is caused by the vibrating walls, floors, and ceilings radiating sound waves.

Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by 10 dB or less. This is an order of magnitude below the damage threshold for normal buildings.

Typical sources of ground-borne vibration are construction activities (e.g., pavement breaking and operating heavy-duty earthmoving equipment), and occasional traffic on rough roads. In general, ground-borne vibration from standard construction practices is only a potential issue when it occurs within 25 feet of sensitive uses. Ground-borne vibration levels from construction activities very rarely reach levels that can damage structures; however, these levels are perceptible near the active construction site. With the exception of old buildings built prior to the 1950s or buildings of historic significance, potential structural damage from heavy construction activities rarely occurs. Specific land uses and placement is unknown at this time, therefore, Mitigation Measure NOISE-2 shall be required to ensure construction activities associated with development allowed under the CBU SP would not expose persons or structures to excessive ground-borne vibration.

When roadways are smooth, vibration from traffic (even heavy trucks) is rarely perceptible. The streets surrounding the project area are paved, smooth, and unlikely to cause significant ground-borne vibration. In addition, the rubber tires and suspension systems of buses and other on-road vehicles make it unusual for on-road vehicles to cause ground-borne noise or vibration problems. It is, therefore, assumed that no such vehicular vibration impacts would occur and, therefore, no vibration impact analysis of on-road vehicles is necessary.

The nearest sensitive receptors to the project site are existing on-campus student housing and academic facilities on the project site itself, as well as existing educational facilities (Chemawa Middle School located at 8830 Magnolia Avenue and Sherman Indian High School located at 9010 Magnolia Avenue), single-family and multi-family residences located adjacent to the properties within the CBU SP Planning Area, some of which are between 10 and 25 feet from select CBU properties (e.g., River Springs Charter School located at 8775 Magnolia Avenue and Engineering Building located at 3739 Adams Street, respectively). Mitigation Measure NOISE-2 would be required to ensure these buildings surrounding the proposed project are unlikely to experience structural damage from ground-borne vibration associated with construction activity.

Long-Term Aircraft Noise Impacts

The closest airport to CBU is Riverside Municipal Airport (RAL) located approximately 1.3 miles north of the project area. Aircraft noise is occasionally audible at the project site; however, no portion of the project site lies within the 55 dBA CNEL noise contours of any public airport nor does any portion of the project site lie within 2 miles of any private airfield or heliport. Therefore, no noise impacts from aircraft noise would occur and no mitigation measures are required.

Long-Term Traffic Noise Impacts

To assess traffic noise impacts, the traffic noise levels along major roadway segments within the project vicinity were projected using FHWA modeling to predict traffic noise level conditions with and without the proposed project. FHWA modeling was based on existing traffic conditions, FHWA modeling results are summarized in Table L. The table includes projected traffic noise levels as measured at 50 feet from the centerline of the outermost traveled lane along the modeled roadway segments. The model does not account for existing sound walls or terrain features that could reduce

traffic noise levels at adjacent land uses, but rather assumes a reasonable worst-case direct line-of-sight over hard surface to the modeled traffic noise sources. Appendix A provides the specific assumptions used in developing these noise levels and model printouts.

Table L shows a minor change in the traffic noise levels associated with the implementation of the proposed CBU SP. The largest increase in traffic-related noise as a result of the project would be within the CBU SP campus on Lancer Lane between Campus Bridge Drive and Adams Street. This increase in traffic would occur due to the main access point to the campus being shifted from Magnolia Street/Campus Bridge Drive to Adams Street and Lancer Lane/Briarwood Drive (the existing access at Magnolia Street/Campus Bridge Drive will remain). Lancer Lane could result in an up to a 7.2 dBA increase over existing conditions. This noise level would exceed the 3 dBA increase considered to be perceptible by the human ear in an outdoor environment. However, the resulting noise level along Lancer Lane would be approximately 56.2 dBA CNEL, which would be lower than existing noise associated with other surrounding roadways and would be in the normally acceptable range for residential and school land uses. The next largest traffic-noise level increase associated with implementation of the CBU SP would be on Campus Bridge Drive between Magnolia Avenue and Lancer Lane, with an approximately 2dBA increase over existing conditions. This noise level increase is less than the 3 dBA increase considered to be perceptible by the human ear in an outdoor environment and the resulting noise level would be 57.2 dBA CNEL, which would also be lower than existing noise associated with other surrounding roadways and would be in the normally acceptable range for residential and school land uses. Therefore, no significant traffic noise impacts would occur for off-site land uses. As a result, no mitigation is required to address traffic-related noise.

Table L: Existing Traffic Noise Levels Without and With Project

Roadway Segment	Existing Traffic Volumes (Dec 2016)					Existing + Ambient Traffic Volumes (2025)					General Plan Buildout (2025)				
	Without Project		With Project			Without Project		With Project			Without Project		With Project		
	ADT	CNEL (dBA) 50 feet from Centerline of Outermost Lane	ADT	CNEL (dBA) 50 feet from Centerline of Outermost Lane	Increase from Baseline Conditions	ADT	CNEL (dBA) 50 feet from Centerline of Outermost Lane	ADT	CNEL (dBA) 50 feet from Centerline of Outermost Lane	Increase from Baseline Conditions	ADT	CNEL (dBA) 50 feet from Centerline of Outermost Lane	ADT	CNEL (dBA) 50 feet from Centerline of Outermost Lane	Increase from Baseline Conditions
Magnolia Avenue - Jackson St to Overland St	25,078	68.1	26,806	68.4	0.3	27,335	68.5	28,112	68.6	0.1	46,066	70.7	46,387	70.8	0.1
Magnolia Avenue - Overland St to Monroe St	24,128	67.9	25,856	68.2	0.3	26,300	68.3	27,077	68.4	0.1	43,995	70.5	44,318	70.6	0.1
Magnolia Avenue - Monroe St to Campus Bridge Dr	24,089	67.9	27,545	68.5	0.6	26,257	68.3	27,812	68.6	0.3	43,569	70.5	43,926	70.5	0.0
Magnolia Avenue - Campus Bridge Dr to Adams St	27,104	68.4	28,832	68.7	0.3	29,543	68.8	30,320	68.9	0.1	41,954	70.3	42,548	70.4	0.1
Magnolia Avenue - Adams St to Jefferson St	27,045	68.4	28,773	68.7	0.3	29,479	68.8	30,256	68.9	0.1	38,556	70.0	39,820	70.1	0.1
Monroe Street - Garfield to Magnolia Ave	10,129	65.7	10,993	66.0	0.3	11,041	66.0	11,430	66.2	0.2	10,129	65.7	10,129	65.7	0.0
Monroe Street - Magnolia Ave to Diana Ave	8,983	64.6	9,847	65.0	0.4	9,792	64.9	10,181	65.1	0.2	8,983	64.6	8,983	64.6	0.0
Monroe Street - Diana Ave to Indiana Ave	9,212	64.7	10,076	65.1	0.4	10,041	65.1	10,430	65.2	0.1	6,000	62.8	8,893	64.5	1.7
Adams Street - Garfield St to Magnolia Ave	20,172	67.2	21,900	67.5	0.3	21,988	67.5	22,765	67.7	0.2	34,813	69.5	34,893	69.5	0.0
Adams Street - Magnolia Ave to Briarwood Dr	28,449	68.7	30,177	68.9	0.2	31,009	69.0	31,786	69.1	0.1	31,574	69.1	31,264	69.1	0.0
Adams Street - Briarwood Dr to Diana Ave	27,957	68.6	38,325	69.9	1.3	30,473	68.9	35,139	69.6	0.7	39,027	70.0	39,984	70.1	0.1
Adams Street - Diana Ave to Freeway 91 Ramps	27,939	68.6	33,987	69.4	0.8	30,454	68.9	33,176	69.3	0.4	39,027	70.0	39,984	70.1	0.1
Adams Street - Freeway 91 Ramps to Indiana Ave	27,074	68.4	31,394	69.1	0.7	29,511	68.8	30,288	68.9	0.1	39,027	70.0	39,984	70.1	0.1
Adams Street - Indiana Ave to Lincoln Ave	14,926	65.8	16,654	66.3	0.5	16,269	66.2	17,046	66.4	0.2	25,702	68.2	25,771	68.2	0.0
Diana Avenue - Monroe St to Campus View	2,689	59.9	0	25.6	-34.3	2,931	60.3	0	25.6	-34.7	0	25.6	0	25.6	0.0
Diana Avenue - Campus View to Adams St	3,522	61.1	0	25.6	-35.5	3,839	61.5	0	25.6	-35.9	0	25.6	0	25.6	0.0
Campus Bridge Drive - Magnolia Ave to Lancer Lane	8,688	55.2	13,872	57.2	2.0	9,470	55.6	5,184	53.0	-2.6	8,220	55.0	9,982	55.8	0.8
Campus View - Lancer Lane to Diana Ave	3,301	51.0	0	15.8	-35.2	3,598	51.4	0	15.8	-35.6	0	15.8	0	15.8	0.0
Lancer Lane - Campus Bridge Dr to Adams St	2,830	49.0	14,926	56.2	7.2	3,090	49.4	15,186	56.3	6.9	5,116	51.6	6,475	52.6	1.0

Source: Rick Engineering (December 2016) and Compiled by LSA (August 2017).
Note: Traffic noise within 50 feet of the roadway centerline should be evaluated with site-specific information.
ADT = average daily traffic
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels

Land Use Compatibility

CBU encompasses approximately 167 acres developed with academic, residential, recreational, open space, parking and industrial uses. Land uses surrounding the subject area include single-family homes, apartments, offices, schools, open space, and religious institutions. The proposed CBU SP would include new and reconfigured educational, housing, administrative support, athletic, and other facilities within the main campus area, thereby providing compatible uses with the surrounding area. Support and ancillary facilities may also be established on University-owned properties not contiguous to the main campus.

The dominant source of noise in the project vicinity is traffic noise State Route 91, Adams Street, Magnolia Avenue, Monroe Street, and Diana Avenue. As shown in Table L, the modeled traffic noise level along the CBU campus boundary measured 50 feet from the centerline of the outermost lane, reaches approximately 68.7 dBA CNEL along Adams Street.

The City sets forth normally acceptable noise level standards for land use compatibility and interior noise exposure of new development. The City does not have specific noise level standards for multi-family residential land uses; therefore this analysis evaluates potential residential land uses under the CBU SP with the City's single-family residential noise level standards. The normally acceptable exterior noise level for single-family residential and school uses is 60 dBA CNEL. Noise levels of 60 to 65 dBA CNEL are considered conditionally acceptable both single-family residential uses and noise levels of 60 to 70 dBA CNEL are considered conditionally acceptable for school uses when a detailed analysis of noise reduction requirements and noise insulation features are included in the design to meet the interior noise standard. For amphitheater land uses, the conditionally acceptable noise level is up to 65 dBA CNEL and the conditionally unacceptable exterior noise level is above 65 dBA CNEL. For athletic field land uses, the conditionally acceptable exterior noise level is up to 70 dBA CNEL and the conditionally unacceptable exterior noise level is above 70 dBA CNEL. In addition, for office land uses, the normally acceptable exterior noise level is up to 65 dBA CNEL, the conditionally acceptable exterior noise level is between 65 and 75 dBA CNEL and the normally unacceptable exterior noise level is above 75 dBA CNEL.

The City sets interior noise standards for residential and school land uses. The normally acceptable interior noise level for residential uses is 45 dBA CNEL during the daytime (7:00 a.m. to 10:00 p.m.) and 35 dBA CNEL during the nighttime (10:00 p.m. to 7:00 a.m.). The normally acceptable interior noise level for school uses is 45 dBA CNEL.

Interior Noise Analysis

Based on the EPA's Protective Noise Levels,³ with a combination of walls, doors, and windows, standard construction materials (Sound Transmission Class [STC]-24 to STC-28) would provide more than 25 dBA in exterior-to-interior noise reduction with windows closed and 15 dBA or more with windows open. Table M below evaluates residential and school land uses based on the City's interior noise level standards.

³ Environmental Protection Agency, 1978. *Protective Noise Levels, Condensed Version of EPA Levels Document*. November.

As shown in Table M below, with windows open, units would not meet the City's normally acceptable school interior noise standard of 45 dBA CNEL (i.e., 68.7 dBA – 15 dBA = 53.7 dBA). Therefore, an alternate form of ventilation, such as an air-conditioning system, would be required for buildings to ensure that windows can remain closed for a prolonged period of time. A ventilation system would reduce noise levels for students and faculty with windows closed and would meet the City's normally acceptable interior noise level criterion of 45 dBA (i.e., 68.7 dBA – 25 dBA = 43.7 dBA). Therefore, Mitigation Measure NOISE-3 would require all buildings include fresh air ventilation. Implementation of the heating, ventilation, and air conditioning (HVAC) system would allow windows to remain closed in order to reduce interior noise levels by 25 dBA, resulting in interior noise levels of 43.7 dBA CNEL, which would meet the City's interior noise standard for school uses of 45 dBA CNEL.

The normally acceptable interior noise level for residential uses is 45 dBA CNEL during the daytime (7:00 a.m. to 10:00 p.m.) and 35 dBA CNEL during the nighttime (10:00 p.m. to 7:00 a.m.). As identified above, with implementation of an HVAC system, interior noise levels would be reduced to 43.7 dBA CNEL, which would exceed the City's nighttime interior noise level for residential uses. Therefore, to meet the interior nighttime noise level, any residential uses developed under the CBU SP would be required to comply with Mitigation Measure NOISE-3, which requires an acoustical study to determine project specific noise insulation requirements.

Table M: Interior Noise Levels

Land Use	Existing On-site Exterior Ambient Noise Level	Interior Noise Level ¹		Interior Noise Standard		Meet Standard?
School	68.7 dBA CNEL	Windows Open	53.7 dBA CNEL	45 dBA		No
		Windows Closed	43.7 dBA CNEL	45 dBA		Yes
Residential	68.7 dBA CNEL	Windows Open	53.7 dBA CNEL	Daytime ²	45 dBA	No
				Nighttime ³	35 dBA	No
		Windows Closed	43.7 dBA CNEL	Daytime ²	45 dBA	Yes
				Nighttime ³	35 dBA	Yes

Notes:

¹ Windows Based on the EPA's Protective Noise Levels, with a combination of walls, doors, and windows, standard construction materials (Sound Transmission Class [STC]-24 to STC-28) would provide more than 25 dBA in exterior-to-interior noise reduction with windows closed and 15 dBA or more with windows open.

² Daytime hours are defined as 7:00 a.m. to 10:00 p.m.

³ Nighttime hours are defined as 10:00 p.m. to 7:00 a.m.

Source: Compiled by LSA, 2017.

Exterior Noise Analysis

Development allowed under the proposed CBU SP may include the development of new sensitive land uses, such as residential and school land uses, in the vicinity of existing noise sources; however specific land uses and placement is unknown at this time. Table N below evaluates potential land uses that could be implemented under the proposed CBU SP based on the City's exterior land use compatibility standards. The City sets normally acceptable noise level standards for land use compatibility. The normally acceptable exterior noise level for single-family residential uses is up to 60 dBA CNEL and noise levels of 60 to 65 dBA CNEL are considered conditionally acceptable when noise insulation features are included in the design to meet the interior noise standard. The

normally acceptable exterior noise level for school uses is up to 60 dBA CNEL and noise levels noise levels of 60 to 70 dBA CNEL are considered conditionally acceptable when noise insulation features are included in the design to meet the interior noise standard. As discussed above, noise levels on the project site are expected to reach approximately 68.7 dBA CNEL. This noise level would be within the City's conditionally acceptable noise level of 60 to 70 dBA CNEL for school uses when noise reduction requirements and noise insulation features are included in the design to meet the interior noise standard. This noise level would exceed the City's conditionally acceptable noise level of 60 to 65 dBA CNEL for single-family residential land uses. In addition, this noise level would be considered a conditionally unacceptable noise for amphitheater land uses, within the City's conditionally acceptable noise level of 70 dBA CNEL for athletic field land uses, and within the City's conditionally acceptable noise level of 65 to 75 dBA CNEL for office land uses. Therefore, implementation of Mitigation Measure NOISE-3 would be required to ensure that projects under the proposed CBU SP would meet the City's land use compatibility standards.

Table N: Exterior Noise Levels

Land Use	Existing On-site Exterior Ambient Noise Level	Exterior Noise Standard		Meet Standard?
School	68.7 dBA CNEL	Normally Acceptable	Up to 60 dBA CNEL	No
		Conditionally Acceptable	60-70 dBA CNEL	Yes
		Normally Unacceptable	70-80 dBA CNEL	-
		Conditionally Unacceptable	Above 80 dBA CNEL	-
Residential	68.7 dBA CNEL	Normally Acceptable	Up to 60 dBA CNEL	No
		Conditionally Acceptable	60-65 dBA CNEL	No
		Normally Unacceptable	65-70 dBA CNEL	Yes
		Conditionally Unacceptable	Above 70 dBA CNEL	-
Amphitheater/ Performing Arts Center	68.7 dBA CNEL	Normally Acceptable	-	-
		Conditionally Acceptable	Up to 65 dBA CNEL	No
		Normally Unacceptable	-	-
		Conditionally Unacceptable	Above 65 dBA CNEL	Yes
Athletic Field	68.7 dBA CNEL	Normally Acceptable	-	-
		Conditionally Acceptable	Up to 70 dBA CNEL	Yes
		Normally Unacceptable	-	-
		Conditionally Unacceptable	Above 70 dBA CNEL	-
Office	68.7 dBA CNEL	Normally Acceptable	Up to 65 dBA CNEL	No
		Conditionally Acceptable	65-75 dBA CNEL	Yes
		Normally Unacceptable	Above 75 dBA CNEL	-
		Conditionally Unacceptable	-	-

Source: Compiled by LSA, 2017.

Long-Term Stationary Noise Impacts

Implementation of the CBU SP would result in a student enrollment of 12,000 students in 2025, which could result in an increase in ambient noise levels in the vicinity of the project site, with additional educational, housing, administrative support, athletic, and other facilities within the main campus. On-site stationary noise sources associated with the CBU SP would be primarily associated with parking lot activities and HVAC equipment.

Parking Lot Activity

Parking lot noise, including engine sounds, car doors slamming, car alarms, loud music, and people conversing, would occur as a result of the proposed project at the project site and on nearby streets. Typical parking lot activities, such as people conversing or doors slamming, generates approximately 60 dBA to 70 dBA L_{max} at 50 feet.

The nearest sensitive receptors to the project site are existing on-campus student housing and academic facilities on the project site itself, as well as existing educational facilities (Chemawa Middle School located at 8830 Magnolia Avenue and Sherman Indian High School located at 9010 Magnolia Avenue), single-family and multi-family residences located adjacent to the properties within the CBU SP Planning Area, some of which are between 10 and 25 feet from select CBU properties. Current project plans do not have sufficient detail to identify locations of future parking lots; therefore, this analysis assumes a worst-case scenario of parking lots located nearest to the existing sensitive receptors. As shown in Table O below, adjusted for distance, the nearest sensitive receptors located approximately 10 feet from parking lots would be exposed to a noise level of 74 to 84 dBA L_{max} generated by parking lot activities. Specific land uses and placement is unknown at this time, therefore, Mitigation Measure NOISE-4 shall be implemented to ensure implementation of the CBU SP would not expose persons to noise levels in excess of the City's General Plan or Municipal Code. In addition, due to the intermittent nature of parking to activity, when averaged over a 24-hour period, this noise level would not cause an increase in noise levels of more than 3 dBA. With implementation of Mitigation Measure NOISE-4, the proposed project would not be expected to substantially increase parking lot noise over existing noise levels, and therefore, the proposed project would not result in significant parking lot noise.

Table O: Stationary Source Noise Levels

Stationary Source	Existing On-site Exterior Ambient Noise Level	Closest Sensitive Receptor	Change in Noise Level ¹	Resulting Noise Level	Standard		Meet Standard?
Parking Lot Activity	60-70 dBA L_{max} at 50 feet	10 feet	14	74 to 84 dBA L_{max}	Daytime ²	55 dBA	No
					Nighttime ³	45 dBA	No
HVAC Equipment	75 dBA L_{max} at 3 feet	10 feet	-10	65 dBA L_{max}	Daytime ²	55 dBA	No
					Nighttime ³	45 dBA	No

Notes:

¹ Sound levels decrease or increase at a rate of approximately 6 dB for each doubling of distance from the source.

² Daytime hours are defined as 7:00 a.m. to 10:00 p.m.

³ Nighttime hours are defined as 10:00 p.m. to 7:00 a.m.

Source: Compiled by LSA, 2017.

HVAC Equipment

HVAC equipment is a typical noise source associated with commercial uses. HVAC equipment is often mounted on rooftops, located on the ground, or located within mechanical rooms. The noise sources could take the form of fans, pumps, air compressors, chillers, or cooling towers. HVAC operations would be required to meet all noise standards.

Precise details of HVAC equipment, including future location and sizing, are unknown at this time; therefore, for purposes of this analysis, 75 dBA at 3 feet was assumed to represent HVAC-related noise.⁴ As shown in Table O above, at 10 feet from the project site, the closest off-site noise-sensitive receptors would be exposed to a noise level of 65 dBA L_{max} generated by HVAC equipment. It is assumed that, as a worst-case scenario, HVAC equipment would operate continuously through the day, evening, and night. Therefore, this noise level of 65 dBA L_{max} would exceed the City's exterior noise standards of 55 dBA during the daytime (7:00 a.m. to 10:00 p.m.) and 45 dBA during the nighttime (10:00 p.m. to 7:00 a.m.) at residential land uses. This would also exceed the City's Municipal Code standard, which specifies that HVAC systems shall not exceed 55 dBA at the property line. Therefore, in order to reduce noise levels associated with HVAC equipment, Mitigation Measure NOISE-5, identified below, would require design considerations and shielding to be implemented to ensure that the HVAC equipment will be located, enclosed, shielded, or otherwise designed to create the greatest possible distance between HVAC-related noise sources and nearest off-site sensitive receptors.

Operational Noise

Development allowed under the proposed CBU SP may include installation or creation of new stationary sources of noise, or could include the development of new sensitive land uses in the vicinity of existing noise sources. As discussed above, on-site stationary noise sources could include parking lot activity and HVAC equipment. In addition, implementation of the CBU SP may include athletic fields or public plaza, which could result in increased noise levels associated with amplified sound such as musical instruments and public address systems. The degree to which noise levels associated with amplified music would attenuate at the nearest noise sensitive receptors would depend on the distance between the concert amplifier and receptors, intervening structures, the direction in which the amplifiers face, and wind speed and direction. Specific land uses and placement is unknown at this time, therefore, Mitigation Measure NOISE-4 shall be implemented to ensure implementation of the CBU SP would not expose persons to noise levels in excess of the City's General Plan or Municipal Code.

MITIGATION MEASURES

The following mitigation measures would apply to the project and will help to reduce and avoid potential impacts related to noise.

Mitigation Measure NOISE-1: The project contractor shall implement the following best management practice measures during all construction of the project:

- Equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards.
- Place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the active project site.

⁴ Trane, 2002. Sound Data and Application Guide for the New and Quieter Air-Cooled Series R Chiller.

- Locate equipment staging in areas that would create the greatest possible distance between construction-related noise sources and noise-sensitive receptors nearest the active project site during all project construction.
- Prohibit extended idling time of internal combustion engines.
- All noise producing construction activities shall be limited to the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday and between the hours of 8:00 a.m. and 5:00 p.m. on Saturdays. No construction activity shall be allowed on Sundays and holidays.
- Designate a “disturbance coordinator” who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator would determine the cause of the noise complaint (e.g., starting too early, bad muffler) and would determine and implement reasonable measures warranted to correct the problem.

Mitigation Measure NOISE-2: Prior to project approval, new development proposed under the CBU SP that would be located within 200 of historic structures shall require a vibration assessment demonstrating that FTA Groundborne Vibration Impact Criteria for the proposed land use are not exceeded. If necessary, the vibration assessment shall demonstrate project modifications required to ensure criteria compliance.

- Mitigation Measure NOISE-3: In order to comply with the City’s noise and land use compatibility standards, prior to project approval, new development proposed under the CBU SP shall require an acoustical analysis for all noise-sensitive projects located in an area with noise levels greater than 60 dBA CNEL. All new residential land uses shall be designed to maintain an interior standard of 45 dBA CNEL during the daytime (7:00 a.m. to 10:00 p.m.) and 35 dBA CNEL during the nighttime (10:00 p.m. to 7:00 a.m.) or less. In addition, all new school land uses should be designed to maintain a standard of 45 dBA CNEL or less in building interiors. Noise reduction measures to achieve this noise level could include forced air ventilation so that windows can remain closed and/or upgraded wall and window assemblies.

Mitigation Measure NOISE-4: Any proposed development that would result in potentially significant noise impacts within 300 feet of existing sensitive receptors, such as stationary noise or amplified sound, shall conduct a noise impact assessment and develop appropriate noise reduction measures to reduce noise levels consistent with the City’s land use compatibility standards.

Mitigation Measure NOISE-5: In order to reduce noise levels associated with HVAC equipment, design considerations and shielding must be implemented to ensure that the HVAC equipment will be located, enclosed, shielded, or otherwise designed to reduce HVAC-related noise sources at the nearest sensitive receptors to 55 dBA at the property line.

Level of Significance after Mitigation

Implementation of mitigation measures for construction impacts, land use compatibility impacts, operational noise impacts, and stationary noise impacts from HVAC equipment would result in less than significant impacts.

REFERENCES

- California Office of Noise Control, 1996. *Guidelines for the Preparation and Content of Noise Element of the General Plan*. February.
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- Harris, C.M., 1998. *Handbook of Acoustical Measurements and Noise Control*.
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- Federal Highway Administration (FHWA), 2006. *Highway Construction Noise Handbook*, Table 9.1.
- Federal Transit Administration (FTA), 2006. *Transit Noise and Vibration Impact Assessment*. May.
- Rick Engineering. 2016. *California Baptist University Traffic Impact Analysis*, December.
- Trane, 2002. *Sound Data and Application Guide for the New and Quieter Air-Cooled Series R Chiller*.
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APPENDIX A

FHWA HIGHWAY TRAFFIC NOISE MODEL PRINTOUTS

2016)-01

TABLE Existing Traffic Volumes (Dec

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Magnolia Avenue - Jackson Street to Overland
Street

NOTES: CBUSP - Existing Traffic Volumes (Dec 2016)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 25078 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.10

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
57.5	115.2	243.8	523.2

2016)-02

TABLE Existing Traffic Volumes (Dec

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Magnolia Avenue - Overland Street to Monroe
Street

NOTES: CBUSP - Existing Traffic Volumes (Dec 2016)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 24128 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY ---	EVENING -----	NIGHT -----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.93

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL -----	65 CNEL -----	60 CNEL -----	55 CNEL -----
56.3	112.4	237.7	509.9

2016)-03

TABLE Existing Traffic Volumes (Dec

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Magnolia Avenue - Monroe Street to Campus Bridge Drive

NOTES: CBUSP - Existing Traffic Volumes (Dec 2016)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 24089 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.93

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
56.3	112.3	237.4	509.4

2016)-04

TABLE Existing Traffic Volumes (Dec

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Magnolia Avenue - Campus Bridge Drive to Adams Street

NOTES: CBUSP - Existing Traffic Volumes (Dec 2016)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 27104 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.44

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
60.1	121.0	256.7	551.0

2016)-05

TABLE Existing Traffic Volumes (Dec

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Magnolia Avenue - Adams Street to Jefferson
Street

NOTES: CBUSP - Existing Traffic Volumes (Dec 2016)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 27045 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY ---	EVENING -----	NIGHT -----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.43

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL -----	65 CNEL -----	60 CNEL -----	55 CNEL -----
60.0	120.9	256.3	550.2

TABLE Existing Traffic Volumes (Dec
2016)-06

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Monroe Street - Garfileld to Magnolia Avenue

NOTES: CBUSP - Existing Traffic Volumes (Dec 2016)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 10129 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY ---	EVENING -----	NIGHT -----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.67

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL -----	65 CNEL -----	60 CNEL -----	55 CNEL -----
0.0	62.0	133.0	286.3

TABLE Existing Traffic Volumes (Dec
2016)-07

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Monroe Street - Magnolia to Diana Avenue

NOTES: CBUSP - Existing Traffic Volumes (Dec 2016)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 8983 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY ---	EVENING -----	NIGHT -----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.57

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL -----	65 CNEL -----	60 CNEL -----	55 CNEL -----
0.0	58.2	123.1	264.3

TABLE Existing Traffic Volumes (Dec
2016)-08

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Monroe Street - Diana Avenue to Indiana Avenue

NOTES: CBUSP - Existing Traffic Volumes (Dec 2016)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 9212 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY ---	EVENING -----	NIGHT -----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.68

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL -----	65 CNEL -----	60 CNEL -----	55 CNEL -----
0.0	59.1	125.2	268.7

2016)-09

TABLE Existing Traffic Volumes (Dec

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Adams Street - Garfield Street to Mangnolia Avenue

NOTES: CBUSP - Existing Traffic Volumes (Dec 2016)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 20172 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.16

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	100.4	211.3	452.8

2016)-10

TABLE Existing Traffic Volumes (Dec

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Adams Street - Magnolia Avenue to Briarwood Drive

NOTES: CBUSP - Existing Traffic Volumes (Dec 2016)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 28449 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY ---	EVENING -----	NIGHT -----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.65

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL -----	65 CNEL -----	60 CNEL -----	55 CNEL -----
61.7	124.9	265.0	569.0

TABLE Existing Traffic Volumes (Dec
2016)-11

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Adams Street - Briarwood Drive to Diana Avenue

NOTES: CBUSP - Existing Traffic Volumes (Dec 2016)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 27957 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY ---	EVENING -----	NIGHT -----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.57

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL -----	65 CNEL -----	60 CNEL -----	55 CNEL -----
61.1	123.5	262.0	562.5

TABLE Existing Traffic Volumes (Dec
2016)-12

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Adams Street - Diana Avenue to Freeway 91 Ramps

NOTES: CBUSP - Existing Traffic Volumes (Dec 2016)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 27939 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY ---	EVENING -----	NIGHT -----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.57

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL -----	65 CNEL -----	60 CNEL -----	55 CNEL -----
61.1	123.4	261.9	562.2

TABLE Existing Traffic Volumes (Dec
2016)-13

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Adams Street - Freeway 91 Ramps to Indiana
Avenue

NOTES: CBUSP - Existing Traffic Volumes (Dec 2016)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 27074 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.44

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
60.0	121.0	256.5	550.6

TABLE Existing Traffic Volumes (Dec
2016)-14

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Adams Street - Indiana Avenue to Lincoln Avenue

NOTES: CBUSP - Existing Traffic Volumes (Dec 2016)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 14926 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY ---	EVENING -----	NIGHT -----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.85

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL -----	65 CNEL -----	60 CNEL -----	55 CNEL -----
0.0	83.3	173.4	370.7

TABLE Existing Traffic Volumes (Dec
2016)-15

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Diana Avenue - Monroe Street to Campus View

NOTES: CBUSP - Existing Traffic Volumes (Dec 2016)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2689 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY ---	EVENING -----	NIGHT -----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 59.91

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL -----	65 CNEL -----	60 CNEL -----	55 CNEL -----
0.0	0.0	55.2	118.4

TABLE Existing Traffic Volumes (Dec
2016)-16

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Diana Avenue - Campus View to Adams Street

NOTES: CBUSP - Existing Traffic Volumes (Dec 2016)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3522 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY ---	EVENING -----	NIGHT -----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 61.08

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL -----	65 CNEL -----	60 CNEL -----	55 CNEL -----
0.0	0.0	66.0	141.7

2016)-17

TABLE Existing Traffic Volumes (Dec

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Campus Bridge Drive - Magnolia Avenue to Lancer Lane

NOTES: CBUSP - Existing Traffic Volumes (Dec 2016)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 8688 SPEED (MPH): 15 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY ---	EVENING -----	NIGHT -----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 55.20

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL -----	65 CNEL -----	60 CNEL -----	55 CNEL -----
0.0	0.0	0.0	57.7

TABLE Existing Traffic Volumes (Dec
2016)-18

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Campus View - Lancer Lane to Diana Avenue

NOTES: CBUSP - Existing Traffic Volumes (Dec 2016)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3301 SPEED (MPH): 15 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY ---	EVENING -----	NIGHT -----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 50.99

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL -----	65 CNEL -----	60 CNEL -----	55 CNEL -----
0.0	0.0	0.0	0.0

2016)-19

TABLE Existing Traffic Volumes (Dec

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Lancer Lane - Campus Bridge Drive to Adams
Street

NOTES: CBUSP - Existing Traffic Volumes (Dec 2016)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2830 SPEED (MPH): 15 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY ---	EVENING -----	NIGHT -----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 21 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 49.03

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL -----	65 CNEL -----	60 CNEL -----	55 CNEL -----
0.0	0.0	0.0	0.0

TABLE Existing Traffic Volumes +
 Project Traffic Assignment-01
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Magnolia Avenue - Jackson Street to Overland Street

NOTES: CBUSP - Existing Traffic Volumes + Project Traffic Assignment

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 26806 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.39

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
59.7	120.2	254.8	546.9

TABLE Existing Traffic Volumes +
Project Traffic Assignment-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Magnolia Avenue - Overland Street to Monroe Street

NOTES: CBUSP - Existing Traffic Volumes + Project Traffic Assignment

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 25856 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.24

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
58.5	117.4	248.8	534.0

TABLE Existing Traffic Volumes +
Project Traffic Assignment-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Magnolia Avenue - Monroe Street to Campus Bridge Drive

NOTES: CBUSP - Existing Traffic Volumes + Project Traffic Assignment

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 27545 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.51

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
60.6	122.3	259.4	556.9

TABLE Existing Traffic Volumes +
Project Traffic Assignment-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Magnolia Avenue - Campus Bridge Drive to Adams Street

NOTES: CBUSP - Existing Traffic Volumes + Project Traffic Assignment

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 28832 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.71

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
62.2	125.9	267.4	574.1

TABLE Existing Traffic Volumes +
Project Traffic Assignment-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Magnolia Avenue - Adams Street to Jefferson Street

NOTES: CBUSP - Existing Traffic Volumes + Project Traffic Assignment

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 28773 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.70

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
62.1	125.8	267.0	573.3

TABLE Existing Traffic Volumes +
Project Traffic Assignment-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Monroe Street - Garfileld to Magnolia Avenue

NOTES: CBUSP - Existing Traffic Volumes + Project Traffic Assignment

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 10993 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.02

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	65.4	140.4	302.3

TABLE Existing Traffic Volumes +
Project Traffic Assignment-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Monroe Street - Magnolia to Diana Avenue

NOTES: CBUSP - Existing Traffic Volumes + Project Traffic Assignment

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 9847 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.97

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	61.7	130.8	280.9

TABLE Existing Traffic Volumes +
Project Traffic Assignment-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Monroe Street - Diana Avenue to Indiana Avenue

NOTES: CBUSP - Existing Traffic Volumes + Project Traffic
Assignment

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 10076 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.07

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	62.6	132.9	285.2

TABLE Existing Traffic Volumes +
Project Traffic Assignment-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Adams Street - Garfield Street to Mangnolia Avenue

NOTES: CBUSP - Existing Traffic Volumes + Project Traffic Assignment

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 21900 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.51

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	105.7	223.0	478.2

TABLE Existing Traffic Volumes +
Project Traffic Assignment-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Adams Street - Magnolia Avenue to Briarwood Drive

NOTES: CBUSP - Existing Traffic Volumes + Project Traffic Assignment

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 30177 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.91

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
63.8	129.7	275.6	591.8

TABLE Existing Traffic Volumes +
Project Traffic Assignment-11
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Adams Street - Briarwood Drive to Diana Avenue

NOTES: CBUSP - Existing Traffic Volumes + Project Traffic
Assignment

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 38325 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.94

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
73.4	151.4	322.8	693.9

TABLE Existing Traffic Volumes +
Project Traffic Assignment-12
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Adams Street - Diana Avenue to Freeway 91 Ramps

NOTES: CBUSP - Existing Traffic Volumes + Project Traffic
Assignment

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 33987 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.42

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
68.4	140.0	298.1	640.5

TABLE Existing Traffic Volumes +
Project Traffic Assignment-13
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Adams Street - Freeway 91 Ramps to Indiana Avenue

NOTES: CBUSP - Existing Traffic Volumes + Project Traffic Assignment

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 31394 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.08

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
65.3	133.0	282.9	607.6

TABLE Existing Traffic Volumes +
Project Traffic Assignment-14
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Adams Street - Indiana Avenue to Lincoln Avenue

NOTES: CBUSP - Existing Traffic Volumes + Project Traffic
Assignment

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 16654 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.32

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	89.1	186.3	398.6

TABLE Existing Traffic Volumes +
Project Traffic Assignment-15
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Diana Avenue - Monroe Street to Campus View

NOTES: CBUSP - Existing Traffic Volumes + Project Traffic Assignment

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 0 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 25.61

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	0.0

TABLE Existing Traffic Volumes +
Project Traffic Assignment-16
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Diana Avenue - Campus View to Adams Street

NOTES: CBUSP - Existing Traffic Volumes + Project Traffic Assignment

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 0 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 25.61

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	0.0

TABLE Existing Traffic Volumes +
Project Traffic Assignment-17
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Campus Bridge Drive - Magnolia Avenue to Lancer Lane

NOTES: CBUSP - Existing Traffic Volumes + Project Traffic Assignment

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 13872 SPEED (MPH): 15 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.23

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	78.6

TABLE Existing Traffic Volumes +
Project Traffic Assignment-18
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Campus View - Lancer Lane to Diana Avenue

NOTES: CBUSP - Existing Traffic Volumes + Project Traffic Assignment

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 0 SPEED (MPH): 15 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 15.81

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	0.0

TABLE Existing Traffic Volumes +
Project Traffic Assignment-19
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Lancer Lane - Campus Bridge Drive to Adams Street

NOTES: CBUSP - Existing Traffic Volumes + Project Traffic Assignment

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 14926 SPEED (MPH): 15 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 21 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 56.25

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	84.8

TABLE Existing + Ambient Traffic
 Volumes (2025)-01
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Magnolia Avenue - Jackson Street to Overland Street
 NOTES: CBUSP - Existing + Ambient Traffic Volumes (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 27335 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.48

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
60.4	121.7	258.1	554.1

TABLE Existing + Ambient Traffic
 Volumes (2025)-02
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Magnolia Avenue - Overland Street to Monroe Street
 NOTES: CBUSP - Existing + Ambient Traffic Volumes (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 26300 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.31

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
59.1	118.7	251.6	540.0

TABLE Existing + Ambient Traffic
 Volumes (2025)-03
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Magnolia Avenue - Monroe Street to Campus Bridge Drive
 NOTES: CBUSP - Existing + Ambient Traffic Volumes (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 26257 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.30

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
59.0	118.6	251.3	539.5

TABLE Existing + Ambient Traffic
 Volumes (2025)-04
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Magnolia Avenue - Campus Bridge Drive to Adams Street
 NOTES: CBUSP - Existing + Ambient Traffic Volumes (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 29543 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.81

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
63.1	127.9	271.7	583.5

TABLE Existing + Ambient Traffic
 Volumes (2025)-05
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Magnolia Avenue - Adams Street to Jefferson
 Street
 NOTES: CBUSP - Existing + Ambient Traffic Volumes (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 29479 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.80

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
63.0	127.7	271.3	582.6

TABLE Existing + Ambient Traffic
 Volumes (2025)-06
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Monroe Street - Garfileld to Magnolia Avenue
 NOTES: CBUSP - Existing + Ambient Traffic Volumes (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 11041 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.04

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	65.6	140.9	303.2

TABLE Existing + Ambient Traffic
 Volumes (2025)-07
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Monroe Street - Magnolia to Diana Avenue
 NOTES: CBUSP - Existing + Ambient Traffic Volumes (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 9792 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.94

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	61.4	130.4	279.9

TABLE Existing + Ambient Traffic
 Volumes (2025)-08
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Monroe Street - Diana Avenue to Indiana Avenue
 NOTES: CBUSP - Existing + Ambient Traffic Volumes (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 10041 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.05

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	62.4	132.5	284.6

TABLE Existing + Ambient Traffic
 Volumes (2025)-09
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Adams Street - Garfield Street to Mangnolia Avenue
 NOTES: CBUSP - Existing + Ambient Traffic Volumes (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 21988 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.53

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	106.0	223.6	479.5

TABLE Existing + Ambient Traffic
 Volumes (2025)-10
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Adams Street - Magnolia Avenue to Briarwood Drive
 NOTES: CBUSP - Existing + Ambient Traffic Volumes (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 31009 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.02

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
64.9	132.0	280.6	602.6

TABLE Existing + Ambient Traffic
 Volumes (2025)-11
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Adams Street - Briarwood Drive to Diana Avenue
 NOTES: CBUSP - Existing + Ambient Traffic Volumes (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 30473 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.95

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
64.2	130.5	277.3	595.7

TABLE Existing + Ambient Traffic
 Volumes (2025)-12
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Adams Street - Diana Avenue to Freeway 91 Ramps
 NOTES: CBUSP - Existing + Ambient Traffic Volumes (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 30454 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.95

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
64.2	130.4	277.2	595.4

TABLE Existing + Ambient Traffic
 Volumes (2025)-13
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Adams Street - Freeway 91 Ramps to Indiana Avenue
 NOTES: CBUSP - Existing + Ambient Traffic Volumes (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 29511 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.81

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
63.0	127.8	271.5	583.1

TABLE Existing + Ambient Traffic
 Volumes (2025)-14
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Adams Street - Indiana Avenue to Lincoln Avenue
 NOTES: CBUSP - Existing + Ambient Traffic Volumes (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 16269 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.22

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	87.8	183.5	392.5

TABLE Existing + Ambient Traffic
 Volumes (2025)-15
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Diana Avenue - Monroe Street to Campus View
 NOTES: CBUSP - Existing + Ambient Traffic Volumes (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2931 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 60.28

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	58.4	125.4

TABLE Existing + Ambient Traffic
 Volumes (2025)-16
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Diana Avenue - Campus View to Adams Street
 NOTES: CBUSP - Existing + Ambient Traffic Volumes (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3839 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 61.46

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	69.9	150.0

TABLE Existing + Ambient Traffic
 Volumes (2025)-17
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Campus Bridge Drive - Magnolia Avenue to Lancer Lane
 NOTES: CBUSP - Existing + Ambient Traffic Volumes (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 9470 SPEED (MPH): 15 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 55.57

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	61.0

TABLE Existing + Ambient Traffic
 Volumes (2025)-18
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Campus View - Lancer Lane to Diana Avenue
 NOTES: CBUSP - Existing + Ambient Traffic Volumes (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3598 SPEED (MPH): 15 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 51.37

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	0.0

TABLE Existing + Ambient Traffic
 Volumes (2025)-19
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Lancer Lane - Campus Bridge Drive to Adams
 Street
 NOTES: CBUSP - Existing + Ambient Traffic Volumes (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3090 SPEED (MPH): 15 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 21 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 49.41

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	0.0

TABLE Existing + Ambient + Project
Traffic Volumes (2025)-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
ROADWAY SEGMENT: Magnolia Avenue - Jackson Street to Overland Street
NOTES: CBUSP - Existing + Ambient + Project Traffic Volumes (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 28112 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.60

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
61.3	123.9	262.9	564.5

TABLE Existing + Ambient + Project
Traffic Volumes (2025)-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
ROADWAY SEGMENT: Magnolia Avenue - Overland Street to Monroe Street
NOTES: CBUSP - Existing + Ambient + Project Traffic Volumes (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 27077 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.44

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
60.0	121.0	256.5	550.6

TABLE Existing + Ambient + Project
Traffic Volumes (2025)-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
ROADWAY SEGMENT: Magnolia Avenue - Monroe Street to Campus Bridge Drive
NOTES: CBUSP - Existing + Ambient + Project Traffic Volumes (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 27812 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.55

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
61.0	123.1	261.1	560.5

TABLE Existing + Ambient + Project
Traffic Volumes (2025)-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
ROADWAY SEGMENT: Magnolia Avenue - Campus Bridge Drive to Adams Street
NOTES: CBUSP - Existing + Ambient + Project Traffic Volumes (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 30320 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.93

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
64.0	130.1	276.4	593.7

TABLE Existing + Ambient + Project
Traffic Volumes (2025)-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
ROADWAY SEGMENT: Magnolia Avenue - Adams Street to Jefferson Street
NOTES: CBUSP - Existing + Ambient + Project Traffic Volumes (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 30256 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.92

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
63.9	129.9	276.0	592.8

TABLE Existing + Ambient + Project
Traffic Volumes (2025)-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Monroe Street - Garfileld to Magnolia Avenue

NOTES: CBUSP - Existing + Ambient + Project Traffic Volumes
(2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 11430 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.19

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	67.1	144.1	310.3

TABLE Existing + Ambient + Project
Traffic Volumes (2025)-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
ROADWAY SEGMENT: Monroe Street - Magnolia to Diana Avenue
NOTES: CBUSP - Existing + Ambient + Project Traffic Volumes
(2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 10181 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.11

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	63.0	133.8	287.2

TABLE Existing + Ambient + Project
Traffic Volumes (2025)-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Monroe Street - Diana Avenue to Indiana Avenue

NOTES: CBUSP - Existing + Ambient + Project Traffic Volumes
(2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 10430 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.22

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	64.0	135.9	291.9

TABLE Existing + Ambient + Project
Traffic Volumes (2025)-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
ROADWAY SEGMENT: Adams Street - Garfield Street to Mangnolia Avenue
NOTES: CBUSP - Existing + Ambient + Project Traffic Volumes (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 22765 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.68

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	108.3	228.8	490.7

TABLE Existing + Ambient + Project
Traffic Volumes (2025)-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
ROADWAY SEGMENT: Adams Street - Magnolia Avenue to Briarwood Drive
NOTES: CBUSP - Existing + Ambient + Project Traffic Volumes (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 31786 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.13

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
65.8	134.1	285.2	612.6

TABLE Existing + Ambient + Project
Traffic Volumes (2025)-11
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Adams Street - Briarwood Drive to Diana Avenue

NOTES: CBUSP - Existing + Ambient + Project Traffic Volumes
(2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 35139 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.57

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
69.7	143.1	304.8	654.9

TABLE Existing + Ambient + Project
Traffic Volumes (2025)-12
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Adams Street - Diana Avenue to Freeway 91 Ramps

NOTES: CBUSP - Existing + Ambient + Project Traffic Volumes
(2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 33176 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.32

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
67.4	137.9	293.4	630.3

TABLE Existing + Ambient + Project
Traffic Volumes (2025)-13
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
ROADWAY SEGMENT: Adams Street - Freeway 91 Ramps to Indiana Avenue
NOTES: CBUSP - Existing + Ambient + Project Traffic Volumes (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 30288 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.92

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
64.0	130.0	276.2	593.2

TABLE Existing + Ambient + Project
Traffic Volumes (2025)-14
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Adams Street - Indiana Avenue to Lincoln Avenue

NOTES: CBUSP - Existing + Ambient + Project Traffic Volumes
(2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 17046 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.43

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	90.3	189.2	404.9

TABLE Existing + Ambient + Project
Traffic Volumes (2025)-15
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017

ROADWAY SEGMENT: Diana Avenue - Monroe Street to Campus View

NOTES: CBUSP - Existing + Ambient + Project Traffic Volumes
(2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 0 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 25.61

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	0.0

TABLE Existing + Ambient + Project
Traffic Volumes (2025)-16
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
ROADWAY SEGMENT: Diana Avenue - Campus View to Adams Street
NOTES: CBUSP - Existing + Ambient + Project Traffic Volumes
(2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 0 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 25.61

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	0.0

TABLE Existing + Ambient + Project
Traffic Volumes (2025)-17
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
ROADWAY SEGMENT: Campus Bridge Drive - Magnolia Avenue to Lancer Lane
NOTES: CBUSP - Existing + Ambient + Project Traffic Volumes (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 5184 SPEED (MPH): 15 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 52.95

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	0.0

TABLE Existing + Ambient + Project
Traffic Volumes (2025)-18
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
ROADWAY SEGMENT: Campus View - Lancer Lane to Diana Avenue
NOTES: CBUSP - Existing + Ambient + Project Traffic Volumes
(2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 0 SPEED (MPH): 15 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 15.81

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	0.0

TABLE Existing + Ambient + Project
Traffic Volumes (2025)-19
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
ROADWAY SEGMENT: Lancer Lane - Campus Bridge Drive to Adams Street
NOTES: CBUSP - Existing + Ambient + Project Traffic Volumes (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 15186 SPEED (MPH): 15 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 21 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 56.32

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	85.7

TABLE General Plan Buildout w/o
 Project (2025)-01
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Magnolia Avenue - Jackson Street to Overland Street
 NOTES: CBUSP - General Plan Buildout w/o Project (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 46066 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.74

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
82.0	170.7	364.7	784.3

TABLE General Plan Buildout w/o
 Project (2025)-02
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Magnolia Avenue - Overland Street to Monroe Street
 NOTES: CBUSP - General Plan Buildout w/o Project (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 43995 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.54

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
79.8	165.6	353.8	760.6

TABLE General Plan Buildout w/o
 Project (2025)-03
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Magnolia Avenue - Monroe Street to Campus Bridge Drive
 NOTES: CBUSP - General Plan Buildout w/o Project (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 43569 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.50

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
79.3	164.6	351.5	755.7

TABLE General Plan Buildout w/o
Project (2025)-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
ROADWAY SEGMENT: Magnolia Avenue - Campus Bridge Drive to Adams Street
NOTES: CBUSP - General Plan Buildout w/o Project (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 41954 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.34

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
77.5	160.6	342.8	736.9

TABLE General Plan Buildout w/o
 Project (2025)-05
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Magnolia Avenue - Adams Street to Jefferson
 Street
 NOTES: CBUSP - General Plan Buildout w/o Project (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 38556 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.97

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
73.7	152.0	324.1	696.6

TABLE General Plan Buildout w/o
 Project (2025)-06
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Monroe Street - Garfileld to Magnolia Avenue
 NOTES: CBUSP - General Plan Buildout w/o Project (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 10129 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.67

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	62.0	133.0	286.3

TABLE General Plan Buildout w/o
 Project (2025)-07
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Monroe Street - Magnolia to Diana Avenue
 NOTES: CBUSP - General Plan Buildout w/o Project (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 8983 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.57

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	58.2	123.1	264.3

TABLE General Plan Buildout w/o
Project (2025)-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
ROADWAY SEGMENT: Monroe Street - Diana Avenue to Indiana Avenue
NOTES: CBUSP - General Plan Buildout w/o Project (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 6000 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.81

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	94.4	202.1

TABLE General Plan Buildout w/o
 Project (2025)-09
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Adams Street - Garfield Street to Mangnolia Avenue
 NOTES: CBUSP - General Plan Buildout w/o Project (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 34813 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.53

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
69.4	142.2	302.9	650.9

TABLE General Plan Buildout w/o
 Project (2025)-10
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Adams Street - Magnolia Avenue to Briarwood Drive
 NOTES: CBUSP - General Plan Buildout w/o Project (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 31574 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.10

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
65.5	133.5	283.9	609.9

TABLE General Plan Buildout w/o
 Project (2025)-11
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Adams Street - Briarwood Drive to Diana Avenue
 NOTES: CBUSP - General Plan Buildout w/o Project (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 39027 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.02

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
74.2	153.2	326.7	702.3

TABLE General Plan Buildout w/o
 Project (2025)-12
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Adams Street - Diana Avenue to Freeway 91 Ramps
 NOTES: CBUSP - General Plan Buildout w/o Project (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 39027 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.02

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
74.2	153.2	326.7	702.3

TABLE General Plan Buildout w/o
 Project (2025)-13
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Adams Street - Freeway 91 Ramps to Indiana Avenue
 NOTES: CBUSP - General Plan Buildout w/o Project (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 39027 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.02

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
74.2	153.2	326.7	702.3

TABLE General Plan Buildout w/o
Project (2025)-14
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
ROADWAY SEGMENT: Adams Street - Indiana Avenue to Lincoln Avenue
NOTES: CBUSP - General Plan Buildout w/o Project (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 25702 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.21

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
58.3	117.0	247.8	531.8

TABLE General Plan Buildout w/o
 Project (2025)-15
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Diana Avenue - Monroe Street to Campus View
 NOTES: CBUSP - General Plan Buildout w/o Project (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 0 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 25.61

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	0.0

TABLE General Plan Buildout w/o
Project (2025)-16
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
ROADWAY SEGMENT: Diana Avenue - Campus View to Adams Street
NOTES: CBUSP - General Plan Buildout w/o Project (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 0 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 25.61

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	0.0

TABLE General Plan Buildout w/o
 Project (2025)-17
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Campus Bridge Drive - Magnolia Avenue to Lancer Lane
 NOTES: CBUSP - General Plan Buildout w/o Project (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 8220 SPEED (MPH): 15 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 54.95

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	55.6

TABLE General Plan Buildout w/o
Project (2025)-18
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
ROADWAY SEGMENT: Campus View - Lancer Lane to Diana Avenue
NOTES: CBUSP - General Plan Buildout w/o Project (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 0 SPEED (MPH): 15 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 15.81

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	0.0

TABLE General Plan Buildout w/o
 Project (2025)-19
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Lancer Lane - Campus Bridge Drive to Adams
 Street
 NOTES: CBUSP - General Plan Buildout w/o Project (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 5116 SPEED (MPH): 15 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 21 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 51.60

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	0.0

TABLE General Plan Buildout w/
 Project (2025)-01
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Magnolia Avenue - Jackson Street to Overland
 Street
 NOTES: CBUSP - General Plan Buildout w/ Project (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 46387 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.77

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
82.4	171.4	366.4	787.9

TABLE General Plan Buildout w/
 Project (2025)-02
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Magnolia Avenue - Overland Street to Monroe Street
 NOTES: CBUSP - General Plan Buildout w/ Project (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 44318 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.58

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
80.1	166.4	355.5	764.4

TABLE General Plan Buildout w/
 Project (2025)-03
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Magnolia Avenue - Monroe Street to Campus Bridge Drive
 NOTES: CBUSP - General Plan Buildout w/ Project (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 43926 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.54

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
79.7	165.4	353.4	759.8

TABLE General Plan Buildout w/
 Project (2025)-04
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Magnolia Avenue - Campus Bridge Drive to Adams
 Street
 NOTES: CBUSP - General Plan Buildout w/ Project (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 42548 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.40

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
78.2	162.0	346.0	743.9

TABLE General Plan Buildout w/
 Project (2025)-05
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Magnolia Avenue - Adams Street to Jefferson
 Street
 NOTES: CBUSP - General Plan Buildout w/ Project (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 39820 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.11

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
75.1	155.2	331.1	711.8

TABLE General Plan Buildout w/
Project (2025)-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
ROADWAY SEGMENT: Monroe Street - Garfileld to Magnolia Avenue
NOTES: CBUSP - General Plan Buildout w/ Project (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 10129 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.67

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	62.0	133.0	286.3

TABLE General Plan Buildout w/
 Project (2025)-07
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Monroe Street - Magnolia to Diana Avenue
 NOTES: CBUSP - General Plan Buildout w/ Project (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 8983 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.57

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	58.2	123.1	264.3

TABLE General Plan Buildout w/
 Project (2025)-08
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Monroe Street - Diana Avenue to Indiana Avenue
 NOTES: CBUSP - General Plan Buildout w/ Project (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 8893 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.52

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	57.8	122.3	262.5

TABLE General Plan Buildout w/
 Project (2025)-09
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Adams Street - Garfield Street to Mangnolia Avenue
 NOTES: CBUSP - General Plan Buildout w/ Project (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 34893 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.54

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
69.5	142.4	303.4	651.8

TABLE General Plan Buildout w/
 Project (2025)-10
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Adams Street - Magnolia Avenue to Briarwood Drive
 NOTES: CBUSP - General Plan Buildout w/ Project (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 31264 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.06

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
65.2	132.7	282.1	605.9

TABLE General Plan Buildout w/
 Project (2025)-11
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Adams Street - Briarwood Drive to Diana Avenue
 NOTES: CBUSP - General Plan Buildout w/ Project (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 39984 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.13

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
75.3	155.6	332.0	713.7

TABLE General Plan Buildout w/
 Project (2025)-12
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Adams Street - Diana Avenue to Freeway 91 Ramps
 NOTES: CBUSP - General Plan Buildout w/ Project (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 39984 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.13

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
75.3	155.6	332.0	713.7

TABLE General Plan Buildout w/
Project (2025)-13
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
ROADWAY SEGMENT: Adams Street - Freeway 91 Ramps to Indiana Avenue
NOTES: CBUSP - General Plan Buildout w/ Project (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 39984 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.13

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
75.3	155.6	332.0	713.7

TABLE General Plan Buildout w/
 Project (2025)-14
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Adams Street - Indiana Avenue to Lincoln Avenue
 NOTES: CBUSP - General Plan Buildout w/ Project (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 25771 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.22

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
58.4	117.2	248.3	532.8

TABLE General Plan Buildout w/
Project (2025)-15
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
ROADWAY SEGMENT: Diana Avenue - Monroe Street to Campus View
NOTES: CBUSP - General Plan Buildout w/ Project (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 0 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 25.61

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	0.0

TABLE General Plan Buildout w/
 Project (2025)-16
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Diana Avenue - Campus View to Adams Street
 NOTES: CBUSP - General Plan Buildout w/ Project (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 0 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 25.61

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	0.0

TABLE General Plan Buildout w/
 Project (2025)-17
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Campus Bridge Drive - Magnolia Avenue to Lancer Lane
 NOTES: CBUSP - General Plan Buildout w/ Project (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 9982 SPEED (MPH): 15 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 55.80

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	63.2

TABLE General Plan Buildout w/
Project (2025)-18
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
ROADWAY SEGMENT: Campus View - Lancer Lane to Diana Avenue
NOTES: CBUSP - General Plan Buildout w/ Project (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 0 SPEED (MPH): 15 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 15.81

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	0.0

TABLE General Plan Buildout w/
 Project (2025)-19
 FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/23/2017
 ROADWAY SEGMENT: Lancer Lane - Campus Bridge Drive to Adams
 Street
 NOTES: CBUSP - General Plan Buildout w/ Project (2025)

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 6475 SPEED (MPH): 15 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 21 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 52.62

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	0.0

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