APPENDIX J1: NOISE IMPACT ANALYSIS

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Bloomington Business Park Specific Plan

NOISE IMPACT ANALYSIS

COUNTY OF SAN BERNARDINO

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LIST OF ABBREVIATED TERMS

(1)	Reference
ADT	Average Daily Traffic
ANSI	American National Standards Institute
Calveno	California Vehicle Noise
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
dBA	A-weighted decibels
EPA	Environmental Protection Agency
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
INCE	Institute of Noise Control Engineering
L_{eq}	Equivalent continuous (average) sound level
L_{max}	Maximum level measured over the time interval
L_{min}	Minimum level measured over the time interval
mph	Miles per hour
OYD2	Maximum Reasonable Initial Development
OPR	Office of Planning and Research
OYD1	Project Level Development
PPV	Peak particle velocity
Project	Bloomington Business Park Specific Plan
REMEL	Reference Energy Mean Emission Level
RMS	Root-mean-square
SP	Specific Plan
VdB	Vibration Decibels

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EXECUTIVE SUMMARY

Urban Crossroads, Inc. has prepared this noise study to determine the potential noise impacts and the necessary noise mitigation measures, if any, for the proposed Bloomington Business Park Specific Plan development ("Project"). The Project site is located south of Santa Ana Avenue, west of Linden Avenue, north of Jurupa Avenue, and east of Alder Avenue in the unincorporated area of Bloomington in the County of San Bernardino. The Project represents the redevelopment of the approximately 213-acre Specific Plan Area, which would develop up to 3,235,836 square feet (sf) of industrial uses.

The results of this Bloomington Business Park Specific Plan Noise Impact Analysis are summarized below based on the significance criteria in Section 4 of this report consistent with Appendix G of the California Environmental Quality Act (CEQA) Guidelines (1). Table ES-1 shows the findings of significance for each potential noise and/or vibration impact under CEQA.

TABLE ES-1: SUMMARY OF CEQA SIGNIFICANCE FINDINGS

Analysis	Report Section	Significance Findings	
		Unmitigated	Mitigated
Off-Site Traffic Noise	7	*Less Than Significant*	-
Operational Noise	9	*Less Than Significant*	-
Construction Noise	10	*Less Than Significant*	-
Construction Vibration		*Potentially Significant*	*Less Than Significant*

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1 INTRODUCTION

This noise analysis has been completed to determine the noise impacts associated with the development of Bloomington Business Park Specific Plan ("Project"). This noise study briefly describes the proposed Project, provides information regarding noise fundamentals, sets out the local regulatory setting, presents the study methods and procedures for transportation related CNEL traffic noise analysis, and evaluates the future exterior noise environment. In addition, this study includes an analysis of the potential Project-related long-term stationary-source operational noise and short-term construction noise and vibration impacts.

1.1 SITE LOCATION

The Bloomington Business Park Specific Plan Project is located south of Santa Ana Avenue, west of Linden Avenue, north of Jurupa Avenue, and east of Alder Avenue in the southern unincorporated area of Bloomington in the County of San Bernardino, as shown on Exhibit 1-A. The Specific Plan site is currently occupied by a combination of residential homes, nurseries, and a church. The Project is located adjacent to existing noise sensitive residential land use with homes located to the north, south, east, and west with industrial uses to the east.

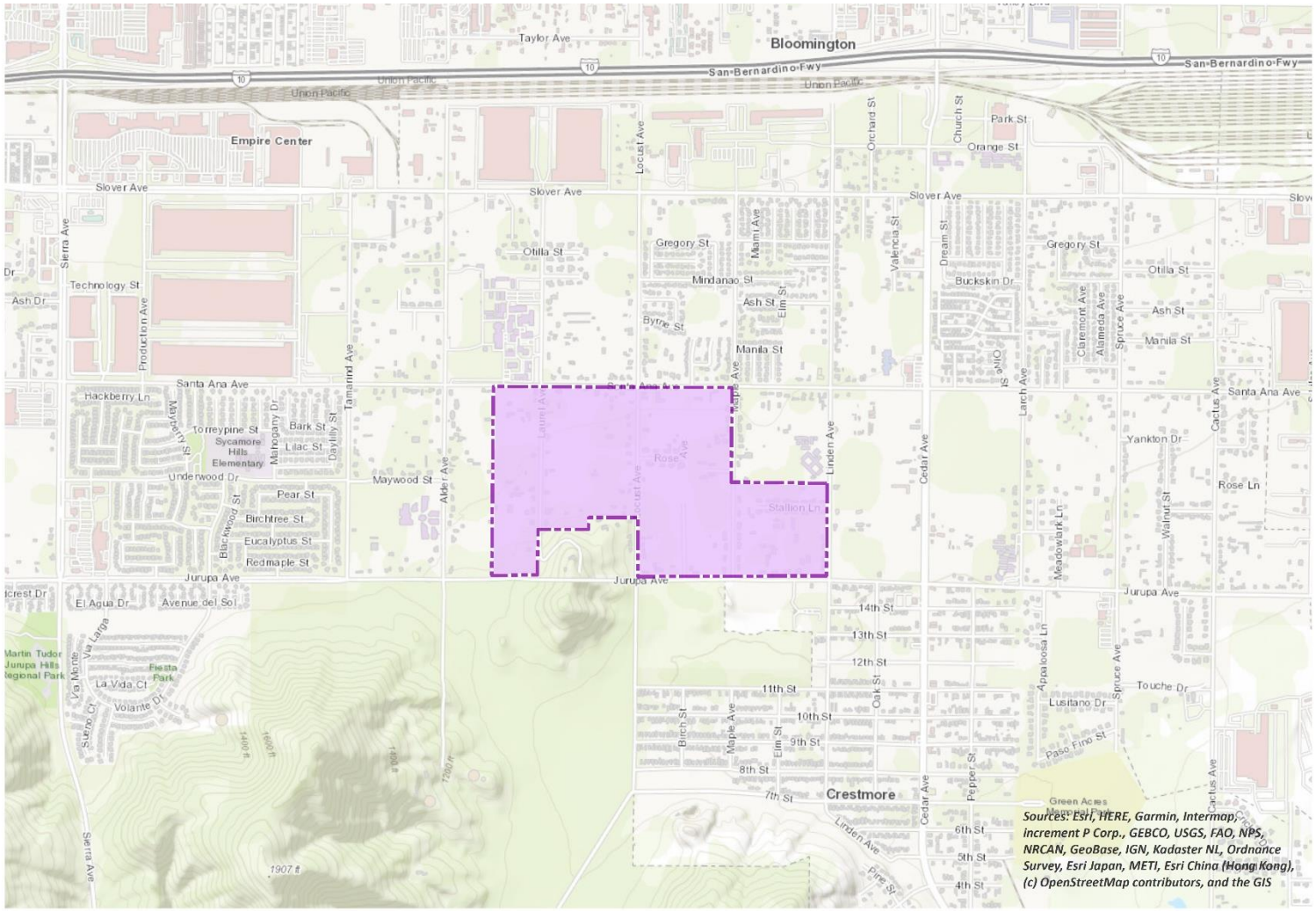
1.2 PROJECT DESCRIPTION

The proposed Project represents the redevelopment of the approximately 213-acre Specific Plan Area, as shown on Exhibits 1-B through 1-D. The Project would develop up to 3,235,836 sf of industrial uses. To provide flexibility and ensure that the maximum impacts are disclosed, this report analyzes the following three scenarios:

- Specific Plan Development Plan (Opening Year Development Option 1 "OYD1"): The OYD1 area includes sites 1, 2, 3, and 4 and would develop up to 383,000 sf of fulfillment center (Site 1), 1,251,640 sf of high-cube warehouse (Site 2), 479,000 sf of fulfillment center (Site 3), and an ancillary truck parking area (Site 4).
- Specific Plan Development Plan (Opening Year Development Option 2 "OYD2"): The OYD2 includes sites 1, 2, 3, and 4 and would develop up to 710,400 sf of fulfillment center (Site 1), 1,251,640 sf of high-cube warehouse (Site 2), 750,000 sf of fulfillment center (Site 3), and an ancillary truck parking area (Site 4).
- Specific Plan Buildout (SP): Consists of the full buildout of the Project which includes the development of up to 598,400 sf of fulfillment center and 523,796 sf of industrial park uses.

The on-site Project-related noise sources are expected to include: loading dock activity, trailer activity, truck movements, roof-top air conditioning units, parking lot vehicle movements, and trash enclosure activity. This noise analysis is intended to describe noise level impacts associated with the expected typical operational activities at the Project site. This report assumes the Project will operate 24-hours daily for seven days per week.

EXHIBIT 1-A: LOCATION MAP



LEGEND:

Specific Plan

EXHIBIT 1-B: OPENING YEAR DEVELOPMENT OPTION 1 (OYD1) SITE PLAN

EXHIBIT 1-C: OPENING YEAR DEVELOPMENT OPTION 2 (OYD2) SITE PLAN

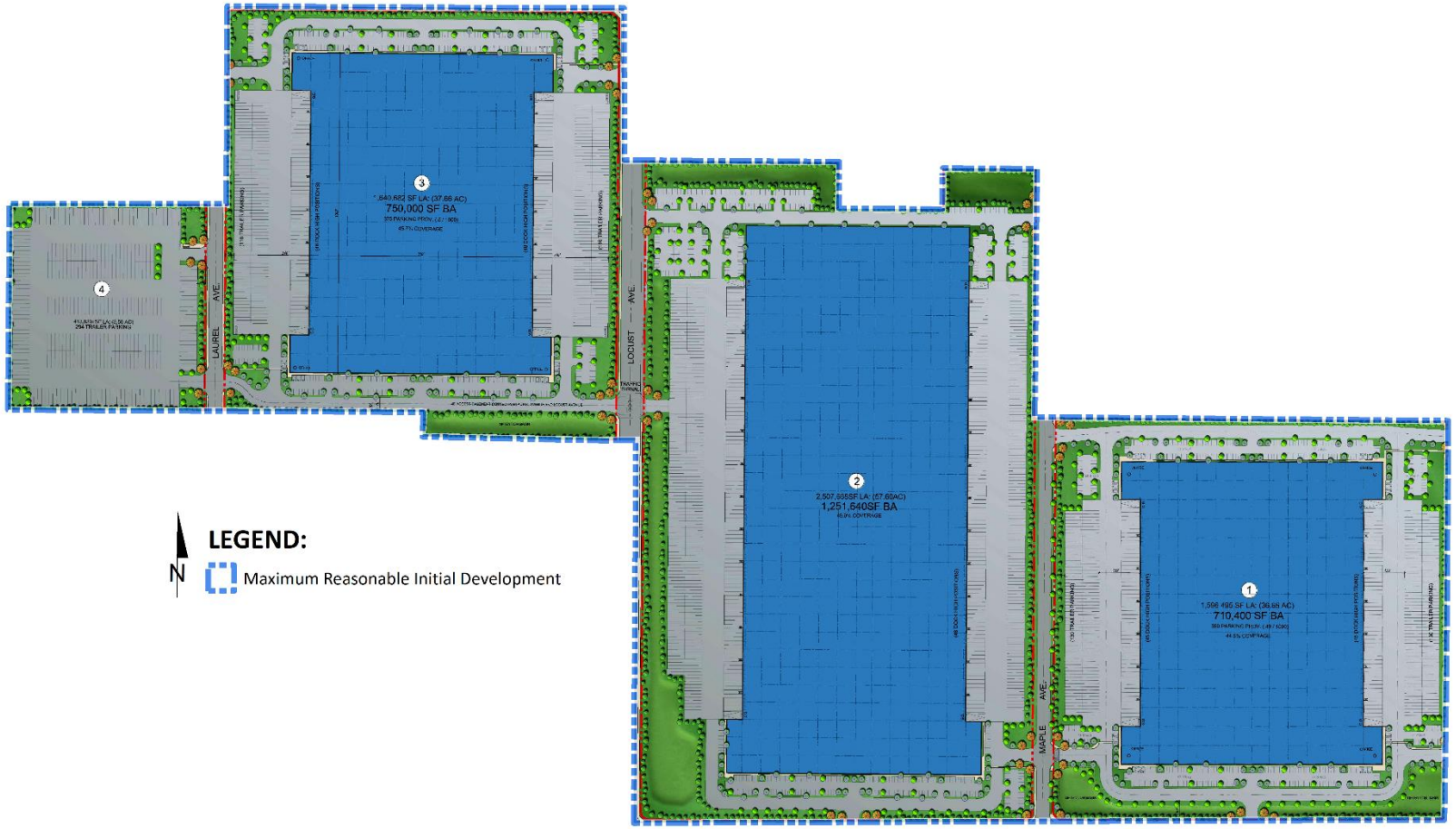
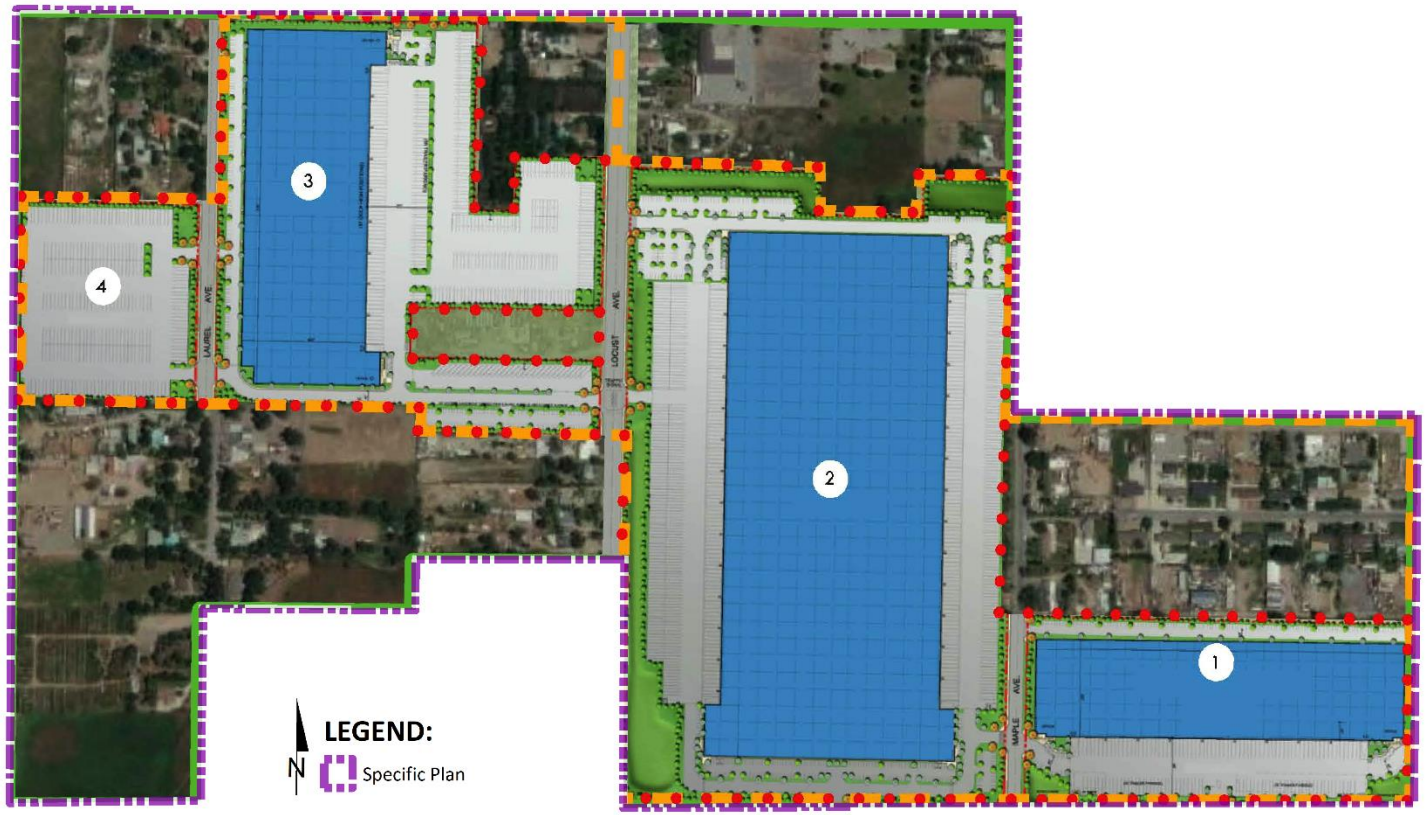


EXHIBIT 1-D: SPECIFIC PLAN (SP) SITE PLAN



2 FUNDAMENTALS

Noise is simply defined as "unwanted sound." Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm or when it has adverse effects on health. Noise is measured on a logarithmic scale of sound pressure level known as a decibel (dB). A-weighted decibels (dBA) approximate the subjective response of the human ear to broad frequency noise source by discriminating against very low and very high frequencies of the audible spectrum. They are adjusted to reflect only those frequencies which are audible to the human ear. Exhibit 2-A presents a summary of the typical noise levels and their subjective loudness and effects that are described in more detail below.

EXHIBIT 2-A: TYPICAL NOISE LEVELS

COMMON OUTDOOR ACTIVITIES	COMMON INDOOR ACTIVITIES	A - WEIGHTED SOUND LEVEL dBA	SUBJECTIVE LOUDNESS	EFFECTS OF NOISE
THRESHOLD OF PAIN		140	INTOLERABLE OR DEAFENING	HEARING LOSS
NEAR JET ENGINE		130		
		120		
JET FLY-OVER AT 300m (1000 ft)	ROCK BAND	110		
LOUD AUTO HORN		100	VERY NOISY	
GAS LAWN MOWER AT 1m (3 ft)		90		
DIESEL TRUCK AT 15m (50 ft), at 80 km/hr (50 mph)	FOOD BLENDER AT 1m (3 ft)	80		SPEECH INTERFERENCE
NOISY URBAN AREA, DAYTIME	VACUUM CLEANER AT 3m (10 ft)	70	LOUD	
HEAVY TRAFFIC AT 90m (300 ft)	NORMAL SPEECH AT 1m (3 ft)	60		
QUIET URBAN DAYTIME	LARGE BUSINESS OFFICE	50	MODERATE	SLEEP DISTURBANCE
QUIET URBAN NIGHTTIME	THEATER, LARGE CONFERENCE ROOM (BACKGROUND)	40		
QUIET SUBURBAN NIGHTTIME	LIBRARY	30	FAINT	NO EFFECT
QUIET RURAL NIGHTTIME	BEDROOM AT NIGHT, CONCERT HALL (BACKGROUND)	20		
	BROADCAST/RECORDING STUDIO	10	VERY FAINT	
LOWEST THRESHOLD OF HUMAN HEARING	LOWEST THRESHOLD OF HUMAN HEARING	0		

Source: Environmental Protection Agency Office of Noise Abatement and Control, Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety (EPA/ONAC 550/9-74-004) March 1974.

2.1 RANGE OF NOISE

Since the range of intensities that the human ear can detect is so large, the scale frequently used to measure intensity is a scale based on multiples of 10, the logarithmic scale. The scale for measuring intensity is the decibel scale. Each interval of 10 decibels indicates a sound energy ten times greater than before, which is perceived by the human ear as being roughly twice as loud (2). The most common sounds vary between 40 dBA (very quiet) to 100 dBA (very loud). Normal conversation at three feet is roughly at 60 dBA, while loud jet engine noises equate to 110 dBA

at approximately 100 feet, which can cause serious discomfort (3). Another important aspect of noise is the duration of the sound and the way it is described and distributed in time.

2.2 NOISE DESCRIPTORS

Environmental noise descriptors are generally based on averages, rather than instantaneous, noise levels. The most used figure is the equivalent level (L_{eq}). Equivalent sound levels are not measured directly but are calculated from sound pressure levels typically measured in A-weighted decibels (dBA). The equivalent sound level (L_{eq}) represents a steady state sound level containing the same total energy as a time varying signal over a given sample period (typically one hour) and is commonly used to describe the "average" noise levels within the environment.

To describe the time-varying character of environmental noise, the statistical or percentile noise descriptors L_{50}, L_{25}, L_8 and L_2, are commonly used. The percentile noise descriptors are the noise levels equaled or exceeded during 50 percent, 25 percent, 8 percent and 2 percent of a stated time. Sound levels associated with the L_2 and L_8 typically describe transient or short-term events, while levels associated with the L_{50} describe the steady state (or median) noise conditions. The relies on the percentile noise levels to describe the stationary source noise level limits. While the L_{50} describes the noise levels occurring 50 percent of the time, the L_{eq} accounts for the total energy (average) observed for the entire hour.

Peak hour or average noise levels, while useful, do not completely describe a given noise environment, however. Noise levels lower than peak hour may be disturbing if they occur during times when quiet is most desirable, namely evening and nighttime (sleeping) hours. To account for this, the Community Noise Equivalent Level (CNEL), representing a composite 24-hour noise level is utilized. The CNEL is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. The time-of-day corrections require the addition of 5 decibels to dBA L_{eq} sound levels in the evening from 7:00 p.m. to 10:00 p.m., and the addition of 10 decibels to dBA L_{eq} sound levels at night between 10:00 p.m. and 7:00 a.m. These additions are made to account for the noise sensitive time periods during the evening and night hours when sound appears louder. CNEL does not represent the actual sound level heard at any time, but rather represents the total sound exposure. The County of San Bernardino relies on the 24-hour CNEL level to assess land use compatibility with transportation related noise sources.

2.3 SOUND PROPAGATION

When sound propagates over a distance, it changes in level and frequency content. Based on guidance from the U.S. Department of Transportation, Federal Highway Administration (FHWA), Office of Environment and Planning, Noise and Air Quality Branch, the way noise reduces with distance depends on the following factors.

2.3.1 GEOMETRIC SPREADING

Sound from a localized source (i.e., a stationary point source) propagates uniformly outward in a spherical pattern. The sound level attenuates (or decreases) at a rate of 6 dB for each doubling of distance from a point source. Highways consist of several localized noise sources on a defined

path and hence can be treated as a line source, which approximates the effect of several point sources. Noise from a line source propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of 3 dB for each doubling of distance from a line source (2).

2.3.2 GROUND ABSORPTION

The propagation path of noise from a highway to a receiver is usually very close to the ground. Noise attenuation from ground absorption and reflective wave canceling adds to the attenuation associated with geometric spreading. Traditionally, the excess attenuation has also been expressed in terms of attenuation per doubling of distance. This approximation is usually sufficiently accurate for distances of less than 200 feet. For acoustically hard sites (i.e., sites with a reflective surface between the source and the receiver, such as a parking lot or body of water), no excess ground attenuation is assumed. For acoustically absorptive or soft sites (i.e., those sites with an absorptive ground surface between the source and the receiver such as soft dirt, grass, or scattered bushes and trees), an excess ground attenuation value of 1.5 dB per doubling of distance is normally assumed. When added to the cylindrical spreading, the excess ground attenuation results in an overall drop-off rate of 4.5 dB per doubling of distance from a line source (4).

2.3.3 ATMOSPHERIC EFFECTS

Receivers located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels. Sound levels can be increased at large distances (e.g., more than 500 feet) due to atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity, and turbulence can also have significant effects (2).

2.3.4 SHIELDING

A large object or barrier in the path between a noise source and a receiver can substantially attenuate noise levels at the receiver. The amount of attenuation provided by shielding depends on the size of the object and the frequency content of the noise source. Shielding by trees and other such vegetation typically only has an "out of sight, out of mind" effect. That is, the perception of noise impact tends to decrease when vegetation blocks the line-of-sight to nearest residents. However, for vegetation to provide a substantial, or even noticeable, noise reduction, the vegetation area must be at least 15 feet in height, 100 feet wide and dense enough to completely obstruct the line-of sight between the source and the receiver. This size of vegetation may provide up to 5 dBA of noise reduction. The Federal Highway Administration (FHWA) does not consider the planting of vegetation to be a noise abatement measure (4).

2.3.5 REFLECTION

Field studies conducted by the FHWA have shown that the reflection from barriers and buildings does not substantially increase noise levels (4). If all the noise striking a structure was reflected back to a given receiving point, the increase would be theoretically limited to 3 dBA. Further, not all the acoustical energy is reflected back to same point. Some of the energy would go over the

structure, some is reflected to points other than the given receiving point, some is scattered by ground coverings (e.g., grass and other plants), and some is blocked by intervening structures and/or obstacles (e.g., the noise source itself). Additionally, some of the reflected energy is lost due to the longer path that the noise must travel. FHWA measurements made to quantify reflective increases in traffic noise have not shown an increase of greater than 1-2 dBA; an increase that is not perceptible to the average human ear.

2.4 NOISE CONTROL

Noise control is the process of obtaining an acceptable noise environment for an observation point or receiver by controlling the noise source, transmission path, receiver, or all three. This concept is known as the source-path-receiver concept. In general, noise control measures can be applied to these three elements.

2.5 NOISE BARRIER ATTENUATION

Effective noise barriers can reduce noise levels by up to 10 to 15 dBA, cutting the loudness of traffic noise in half. A noise barrier is most effective when placed close to the noise source or receiver. Noise barriers, however, do have limitations. For a noise barrier to work, it must be high enough and long enough to block the path of the noise source (4).

2.6 LAND USE COMPATIBILITY WITH NOISE

Some land uses are more tolerant of noise than others. For example, schools, hospitals, churches, and residences are more sensitive to noise intrusion than are commercial or industrial developments and related activities. As ambient noise levels affect the perceived amenity or livability of a development, so too can the mismanagement of noise impacts impair the economic health and growth potential of a community by reducing the area's desirability as a place to live, shop and work. For this reason, land use compatibility with the noise environment is an important consideration in the planning and design process. The FHWA encourages State and Local government to regulate land development in such a way that noise-sensitive land uses are either prohibited from being located adjacent to a highway, or that the developments are planned, designed, and constructed in such a way that noise impacts are minimized. (5)

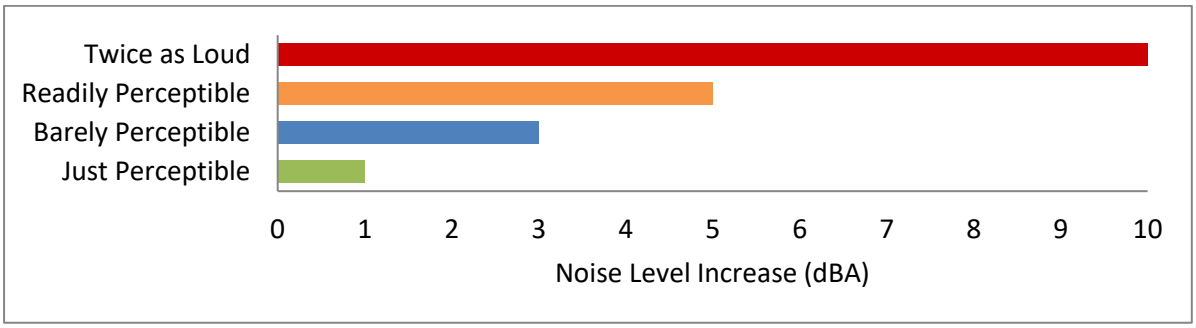
2.7 COMMUNITY RESPONSE TO NOISE

Community responses to noise varies depending upon everyone's susceptibility to noise and personal attitudes about noise. Several factors are related to the level of community annoyance including:

- Fear associated with noise producing activities;
- Socio-economic status and educational level;
- Perception that those affected are being unfairly treated;
- Attitudes regarding the usefulness of the noise-producing activity;
- Belief that the noise source can be controlled.

Approximately ten percent of the population has a very low tolerance for noise and will object to any noise not of their making. Consequently, even in the quietest environment, some complaints will occur. Twenty-five percent of the population will not complain even in very severe noise environments. Thus, a variety of reactions can be expected from people exposed to any given noise environment (6). Surveys have shown that about ten percent of the people exposed to traffic noise of 60 dBA will report being highly annoyed with the noise, and each increase of one dBA is associated with approximately two percent more people being highly annoyed. When traffic noise exceeds 60 dBA or aircraft noise exceeds 55 dBA, people may begin to complain (6). Despite this variability in behavior on an individual level, the population can be expected to exhibit the following responses to changes in noise levels as shown on Exhibit 2-B. A change of 3 dBA is considered *barely perceptible*, and changes of 5 dBA are considered *readily perceptible*. (4)

EXHIBIT 2-B: NOISE LEVEL INCREASE PERCEPTION



2.8 VIBRATION

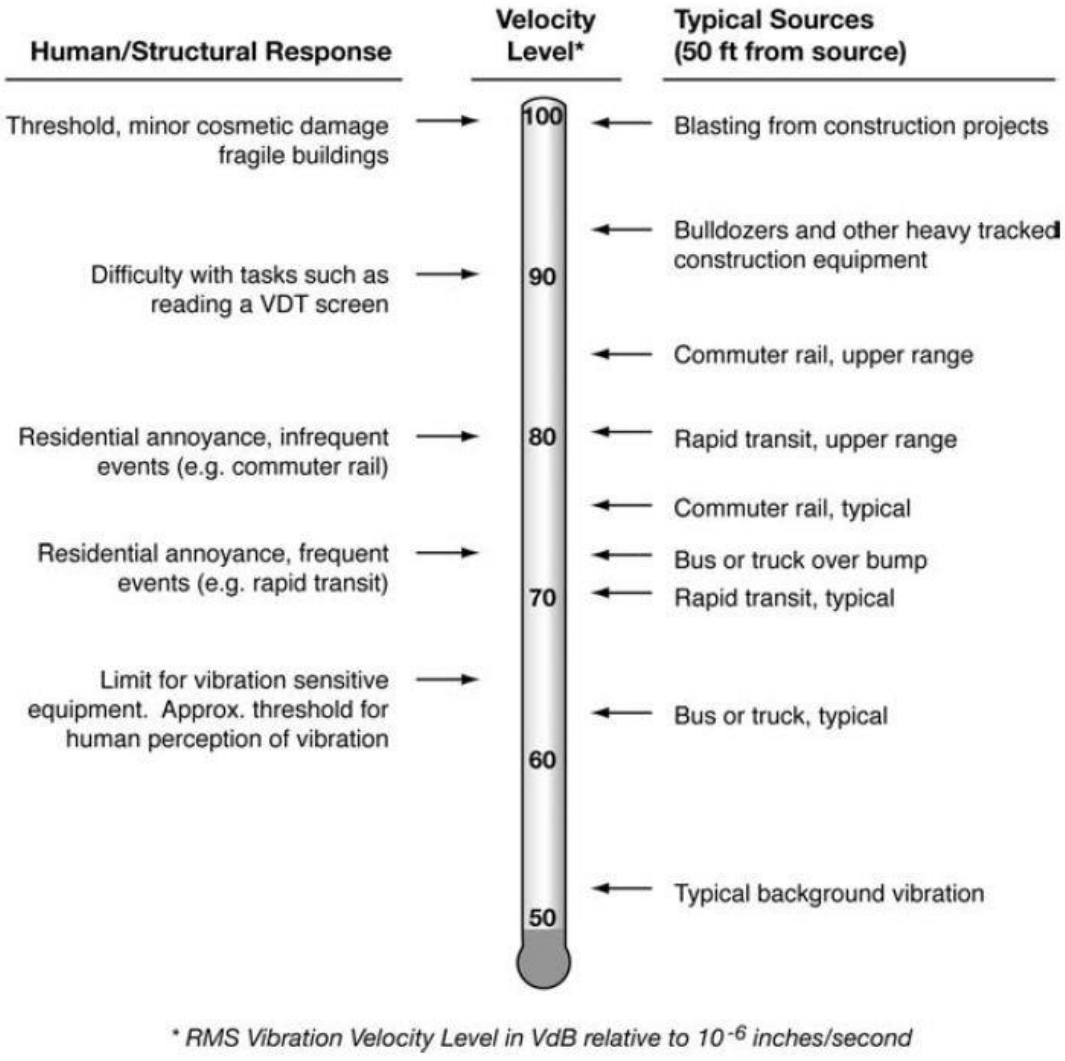
Per the Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment Manual* (7), vibration is the periodic oscillation of a medium or object. The rumbling sound caused by the vibration of room surfaces is called structure-borne noise. Sources of ground-borne vibrations include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) or human-made causes (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous, such as factory machinery, or transient, such as explosions. As is the case with airborne sound, ground-borne vibrations may be described by amplitude and frequency.

There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings but is not always suitable for evaluating human response (annoyance) because it takes some time for the human body to respond to vibration signals. Instead, the human body responds to average vibration amplitude often described as the root mean square (RMS). The RMS amplitude is defined as the average of the squared amplitude of the signal and is most frequently used to describe the effect of vibration on the human body. Decibel notation (VdB) is commonly used to measure RMS. Decibel notation (VdB) serves to reduce the range of numbers used to describe human response to vibration. Typically, ground-borne vibration generated by man-made activities attenuates rapidly with

distance from the source of the vibration. Sensitive receivers for vibration include structures (especially older masonry structures), people (especially residents, the elderly, and sick), and vibration-sensitive equipment and/or activities.

The background vibration-velocity level in residential areas is generally 50 VdB. Ground-borne vibration is normally perceptible to humans at approximately 65 VdB. For most people, a vibration-velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels. Typical outdoor sources of perceptible ground-borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the ground-borne vibration is rarely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration-velocity level, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings. Exhibit 2-C illustrates common vibration sources and the human and structural response to ground-borne vibration.

EXHIBIT 2-C: TYPICAL LEVELS OF GROUND-BORNE VIBRATION



Source: Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual.

3 REGULATORY SETTING

To limit population exposure to physically and/or psychologically damaging as well as intrusive noise levels, the federal government, the State of California, various county governments, and most municipalities in the state have established standards and ordinances to control noise. In most areas, automobile and truck traffic is the major source of environmental noise. Traffic activity generally produces an average sound level that remains constant with time. Air and rail traffic, and commercial and industrial activities are also major sources of noise in some areas. Federal, state, and local agencies regulate different aspects of environmental noise. Federal and state agencies generally set noise standards for mobile sources such as aircraft and motor vehicles, while regulation of stationary sources is left to local agencies.

3.1 STATE OF CALIFORNIA NOISE REQUIREMENTS

The State of California regulates freeway noise, sets standards for sound transmission, provides occupational noise control criteria, identifies noise standards, and provides guidance for local land use compatibility. State law requires that each county and city adopt a General Plan that includes a Noise Element which is to be prepared per guidelines adopted by the Governor's Office of Planning and Research (OPR). (8) The purpose of the Noise and Safety Element is to *limit the exposure of the community to excessive noise levels*. In addition, the California Environmental Quality Act (CEQA) requires that all known environmental effects of a project be analyzed, including environmental noise impacts.

3.2 COUNTY OF SAN BERNARDINO COUNTYWIDE PLAN HAZARDS ELEMENT

The County of San Bernardino is committed to protecting life, property, and commerce from impacts associated with natural hazards, human-generated hazards, and increased risk due to climate change. The County also works to ensure that residents in unincorporated disadvantaged communities have a reduced risk of exposure to pollution and have equitable access to public facilities and services. Effectively reducing these risks requires the County and its partners to evaluate public safety threats, proactively plan and protect against potential hazards, and establish systems that will make the county and its people safer and more self- reliant. (9) To address noise sources found in the County of San Bernardino, the following policies have been identified in the Countywide Plan Hazards Element:

- **Policy HZ-2.6**: Coordination with transportation authorities. We collaborate with airport owners, FAA, Caltrans, SBCTA, SCAG, neighboring jurisdictions, and other transportation providers in the preparation and maintenance of, and updates to transportation-related plans and projects to minimize noise impacts and provide appropriate mitigation measures.
- **Policy HZ-2.7**: Truck delivery areas. We encourage truck delivery areas to be located away from residential properties and require associated noise impacts to be mitigated.
- **Policy HZ-2.8**: Proximity to noise generating uses. We limit or restrict new noise sensitive land uses in proximity to existing conforming noise generating uses and planned industrial areas.

- **Policy HZ-2.9**: Control sound at the source. We prioritize noise mitigation measures that control sound at the source before buffers, sound walls, and other perimeter measures.
- **Policy HZ-2.10:** Agricultural operations. We require new development adjacent to existing conforming agricultural operations to provide adequate buffers to reduce the exposure of new development to operational noise, odor, and the storage or application of pesticides or other hazardous materials.
- **Policy HZ-3.19**: Community education. We make educational materials available to the public in unincorporated environmental justice focus areas so that they clearly understand the potential for adverse pollution, noise, odor, vibration, and lighting and glare, and the effects of toxic materials to promote civil engagement. We require that such educational materials be developed in accordance with Plain Language Guidelines.

3.3 COUNTY OF SAN BERNARDINO DEVELOPMENT CODE

While the County of San Bernardino Countywide Plan Hazards Element provides guidelines and criteria to assess transportation noise on sensitive land uses, the County Code, Title 8 Development Code contains the noise level limits for mobile, stationary, and construction-related noise sources. (10)

3.3.1 TRANSPORTATION NOISE STANDARDS

Section 83.01.080(d), Table 83-3, contains the County of San Bernardino's mobile noise source-related standards, shown on Exhibit 3-A. Exterior transportation (mobile) noise level standards for residential land uses in the Project study area are shown to be 60 dBA CNEL, while non-noise-sensitive land uses, such as office uses, require exterior noise levels of 65 dBA CNEL per the County's Table 83-3 mobile noise source standards.

3.3.2 OPERATIONAL NOISE STANDARDS

To analyze noise impacts originating from a designated fixed location such as the Bloomington Business Park Specific Plan Project, stationary-source (operational) noise such as the expected loading dock activity, trailer activity, truck movements, roof-top air conditioning units, parking lot vehicle movements, and trash enclosure activity are typically evaluated against standards established under a jurisdiction's Municipal Code. The County of San Bernardino County Code, Title 8 Development Code, Section 83.01.080(c) establishes the noise level standards for stationary noise sources. Since the Project's land use will potentially impact adjacent noise-sensitive uses in the Project study area, this noise study relies on the more conservative residential noise level standards to describe potential operational noise impacts.

EXHIBIT 3-A: COUNTY OF SAN BERNARDINO MOBILE NOISE LEVEL STANDARDS

Noise Standards for Adjacent Mobile Noise Sources			
Land Use		*Ldn (or CNEL) dB(A)*	
Categories	*Uses*	*Interior (1)*	*Exterior (2)*
Residential	Single and multi-family, duplex, mobile homes	45	60(3)
Commercial	Hotel, motel, transient housing	45	60(3)
	Commercial retail, bank, restaurant	50	N/A
	Office building, research and development, professional offices	45	65
	Amphitheater, concert hall, auditorium, movie theater	45	N/A
Institutional/Public	Hospital, nursing home, school classroom, religious institution, library	45	65
Open Space	Park	N/A	65

Notes:

(1) The indoor environment shall exclude bathrooms, kitchens, toilets, closets and corridors.

(2) The outdoor environment shall be limited to:

- Hospital/office building patios
- Hotel and motel recreation areas
- Mobile home parks
- Multi-family private patios or balconies
- Park picnic areas
- Private yard of single-family dwellings
- School playgrounds

(3) An exterior noise level of up to 65 dB(A) (or CNEL) shall be allowed provided exterior noise levels have been substantially mitigated through a reasonable application of the best available noise reduction technology, and interior noise exposure does not exceed 45 dB(A) (or CNEL) with windows and doors closed. Requiring that windows and doors remain closed to achieve an acceptable interior noise level shall necessitate the use of air conditioning or mechanical ventilation.

CNEL = (Community Noise Equivalent Level). The average equivalent A-weighted sound level during a 24-hour day, obtained after addition of approximately five decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and ten decibels to sound levels in the night from 10:00 p.m. to 7:00 a.m.

Source: County of San Bernardino County Code, Title 8 Development Code, Table 83-3.

For residential properties, the exterior noise level shall not exceed 55 dBA L_{eq} during the daytime hours (7:00 a.m. to 10:00 p.m.) and 45 dBA L_{eq} during the nighttime hours (10:00 p.m. to 7:00 a.m.) for both the whole hour, and for not more than 30 minutes in any hour. (10) The exterior noise level standards shall apply for a cumulative period of 30 minutes in any hour, as well as the standard plus 5 dBA cannot be exceeded for a cumulative period of more than 15 minutes in any hour, or the standard plus 10 dBA for a cumulative period of more than 5 minutes in any hour, or the standard plus 15 dBA for a cumulative period of more than 1 minute in any hour, or the standard plus 20 dBA for any period of time. Further, Section 83.01.080(e) indicates that if the existing ambient noise level already exceeds any of the exterior noise level limit categories, then the standard shall be adjusted to reflect the ambient conditions. The County of San Bernardino operational noise level standards are shown on Table 3-1 and included in Appendix 3.1.

TABLE 3-1: OPERATIONAL NOISE LEVEL STANDARDS

Time Period	Exterior Noise Level Standards (dBA)[1]				
	L_{50} (30 mins)	L_{25} (15 mins)	L_8 (5 mins)	L_2 (1 min)	L_{max} (Anytime)
Daytime (7:00 a.m. to 10:00 p.m.)	55	60	65	70	75
Nighttime (10:00 p.m. to 7:00 a.m.)	45	50	55	60	65

[1] County of San Bernardino Development Code, Title 8, Section 83.01.080 (Appendix 3.1). The percent noise level is the level exceeded "n" percent of the time during the measurement period. L_{50} is the noise level exceeded 50% of the time. .

The percentile noise descriptors are provided to ensure that the duration of the noise source is fully considered. However, due to the relatively constant intensity of the Project operational activities, the L_{50} or average L_{eq} noise level metrics best describe the loading dock activity, trailer activity, truck movements, roof-top air conditioning units, parking lot vehicle movements, and trash enclosure activity. In addition, the L_{eq} noise level metric accounts for noise fluctuations over time by averaging the louder and quieter events and giving more weight to the louder events. In addition, due to the mathematical relationship between the median (L_{50}) and the mean (L_{eq}), the L_{eq} will always be larger than or equal to the L_{50}. The more variable the noise becomes, the larger the L_{eq} becomes in comparison to the L_{50}. Therefore, this noise study conservatively relies on the average L_{eq} sound level limits to describe the Project operational noise levels.

3.4 CONSTRUCTION NOISE STANDARDS

Section 83.01.080(g)(3) of the County of San Bernardino Development Code, provided in Appendix 3.1, indicates that construction activity is considered exempt from the noise level standards between the hours of 7:00 a.m. to 7:00 p.m. except on Sundays and Federal holidays. (10) However, neither the County of San Bernardino Countywide Plan or Development Code establish numeric maximum acceptable construction source noise levels at potentially affected receivers, which would allow for a quantified determination of what CEQA constitutes a *substantial temporary or periodic noise increase*. Therefore, a numerical construction threshold based on Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment Manual* is used for analysis of daytime construction impacts, as discussed below.

According to the FTA, local noise ordinances are typically not very useful in evaluating construction noise. They usually relate to nuisance and hours of allowed activity, and sometimes specify limits in terms of maximum levels, but are generally not practical for assessing the impact of a construction project. Project construction noise criteria should account for the existing noise environment, the absolute noise levels during construction activities, the duration of the construction, and the adjacent land use. Due to the lack of standardized construction noise thresholds, the FTA provides guidelines that can be considered reasonable criteria for construction noise assessment. The FTA considers a daytime exterior construction noise level of 80 dBA L_{eq} as a reasonable threshold for noise sensitive residential land use. (7 p. 179).

3.5 CONSTRUCTION VIBRATION STANDARDS

The County of San Bernardino Development Code, Section 83.01.090(a) states that vibration shall be no *greater than or equal to two-tenths inches per second measured at or beyond the lot line*. (10) Therefore, to determine if the vibration levels due to the operation and construction of the Project, the peak particle velocity (PPV) vibration level standard of 0.2 inches per second is used.

4 SIGNIFICANCE CRITERIA

The following significance criteria are based on currently adopted guidance provided by Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (8) For the purposes of this report, impacts would be potentially significant if the Project results in or causes:

A. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

B. Generation of excessive ground-borne vibration or ground-borne noise levels?

C. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

While the County of San Bernardino Countywide Plan provides direction on noise compatibility and establish noise standards by land use type that are sufficient to assess the significance of noise impacts, they do not define the levels at which increases are considered substantial for use under Guideline A. CEQA Appendix G Guideline C applies to nearby public and private airports, if any, and the Project's land use compatibility.

4.1 CEQA GUIDELINES NOT FURTHER ANALYZED

The Project site is not located within two miles of a public airport or within an airport land use plan. The closest airport is the Flabob Airport located approximately 4 miles south of the Project site. As such, the Project site would not be exposed to excessive noise levels from airport operations, and therefore, impacts are considered *less than significant,* and no further noise analysis is conducted in relation to Guideline C.

4.2 NOISE-SENSITIVE RECEIVERS

Noise level increases resulting from the Project are evaluated based on the Appendix G CEQA Guidelines described above at the closest sensitive receiver locations. Under CEQA, consideration must be given to the magnitude of the increase, the existing ambient noise levels, and the location of noise-sensitive receivers to determine if a noise increase represents a significant adverse environmental impact. This approach recognizes *that there is no single noise increase that renders the noise impact significant.* (11)

Unfortunately, there is no completely satisfactory way to measure the subjective effects of noise or of the corresponding human reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance and differing individual experiences with noise. Thus, an important way of determining a person's subjective reaction to a new noise is the comparison of it to the existing environment to which one has adapted—the so-called *ambient* environment. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will typically be judged. The Federal Interagency Committee on Noise (FICON) (12) developed guidance to be used for the assessment

of project-generated increases in noise levels that consider the ambient noise level. The FICON recommendations are based on studies that relate aircraft noise levels to the percentage of persons highly annoyed by aircraft noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, these recommendations are often used in environmental noise impact assessments involving the use of cumulative noise exposure metrics, such as the average-daily noise level (CNEL) and equivalent continuous noise level (L_{eq}).

As previously stated, the approach used in this noise study recognizes *that there is no single noise increase that renders the noise impact significant*, based on a 2008 California Court of Appeal ruling on Gray v. County of Madera. (11) For example, if the ambient noise environment is quiet (<60 dBA) and the new noise source greatly increases the noise levels, an impact may occur if the noise criteria may be exceeded. Therefore, for this analysis, FICON identifies a *readily perceptible* 5 dBA or greater project-related noise level increase is considered a significant impact when the noise criteria for a given land use is exceeded. Per the FICON, in areas where the without project noise levels range from 60 to 65 dBA, a 3 dBA *barely perceptible* noise level increase appears to be appropriate for most people. When the without project noise levels already exceed 65 dBA, any increase in community noise louder than 1.5 dBA or greater is considered a significant impact if the noise criteria for a given land use is exceeded, since it likely contributes to an existing noise exposure exceedance.

The FICON guidance provides an established source of criteria to assess the impacts of substantial temporary or permanent increase in ambient noise levels. Based on the FICON criteria, the amount to which a given noise level increase is considered acceptable is reduced when the without Project noise levels are already shown to exceed certain land-use specific exterior noise level criteria. The specific levels are based on typical responses to noise level increases of 5 dBA or *readily perceptible*, 3 dBA or *barely perceptible*, and 1.5 dBA depending on the underlying without Project noise levels for noise-sensitive uses. These levels of increases and their perceived acceptance are consistent with guidance provided by both the Federal Highway Administration (4 p. 9) and Caltrans (13 p. 2_48).

4.3 SIGNIFICANCE CRITERIA SUMMARY

Noise impacts shall be considered significant if any of the following occur as a direct result of the proposed Project. Table 4-1 shows the significance criteria summary matrix.

TABLE 4-1: SIGNIFICANCE CRITERIA SUMMARY

Analysis	Land Use	Condition(s)	Significance Criteria	
			Daytime	Nighttime
Off-Site	Noise-Sensitive[1]	if ambient is < 60 dBA CNEL	≥ 5 dBA CNEL Project increase	
		if ambient is 60 - 65 dBA CNEL	≥ 3 dBA CNEL Project increase	
		if ambient is > 65 dBA CNEL	≥ 1.5 dBA CNEL Project increase	
Operational	Residential	Exterior Noise Level Limit[2]	55 dBA L_{eq}	45 dBA L_{eq}
	Noise-Sensitive[1]	if ambient is < 60 dBA L_{eq}	≥ 5 dBA L_{eq} Project increase	
		if ambient is 60 - 65 dBA L_{eq}	≥ 3 dBA L_{eq} Project increase	
		if ambient is > 65 dBA L_{eq}	≥ 1.5 dBA L_{eq} Project increase	
Construction	Noise-Sensitive	Permitted between 7:00 a.m. to 7:00 p.m.; except Sundays and Federal holidays.[3]		
		Noise Level Threshold[4]	80 dBA L_{eq}	n/a
		Vibration Level Threshold[5]	0.2 PPV in/sec	n/a

[1] FICON, 1992.
[2] County of San Bernardino Development Code, Title 8, Section 83.01.080 (Appendix 3.1)
[3] Section 83.01.080(g)(3) of the County of San Bernardino County Code.
[4] Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual.
[5] Section 83.01.090(a) of the County of San Bernardino County Code.
"Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m. "n/a" = construction activities are not planned during the nighttime hours; "PPV" = peak particle velocity.

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5 EXISTING NOISE LEVEL MEASUREMENTS

To assess the existing noise level environment, 24-hour noise level measurements were taken at 14 locations in the Project study area. The receiver locations were selected to describe and document the existing noise environment within the Project study area. Exhibits 5-A through 5-C provide the boundaries of the Project study areas and the noise level measurement locations. To fully describe the existing noise conditions, noise level measurements were collected by Urban Crossroads, Inc. on Thursday, February 18, 2021 and Wednesday, April 28, 2021. Appendix 5.1 includes study area photos.

5.1 MEASUREMENT PROCEDURE AND CRITERIA

To describe the existing noise environment, the hourly noise levels were measured during typical weekday conditions over a 24-hour period. By collecting individual hourly noise level measurements, it is possible to describe the daytime and nighttime hourly noise levels and calculate the 24-hour CNEL. The long-term noise readings were recorded using Piccolo Type 2 integrating sound level meter and dataloggers. The Piccolo sound level meters were calibrated using a Larson-Davis calibrator, Model CAL 150. All noise meters were programmed in "slow" mode to record noise levels in "A" weighted form. The sound level meters and microphones were equipped with a windscreen during all measurements. All noise level measurement equipment satisfies the American National Standards Institute (ANSI) standard specifications for sound level meters ANSI S1.4-2014/IEC 61672-1:2013. (14)

5.2 NOISE MEASUREMENT LOCATIONS

The long-term noise level measurements were positioned as close to the nearest sensitive receiver locations as possible to assess the existing ambient hourly noise levels surrounding the Project sites. Both Caltrans and the FTA recognize that it is not reasonable to collect noise level measurements that can fully represent every part of a private yard, patio, deck, or balcony normally used for human activity when estimating impacts for new development projects. This is demonstrated in the Caltrans general site location guidelines which indicate that, *sites must be free of noise contamination by sources other than sources of interest. Avoid sites located near sources such as barking dogs, lawnmowers, pool pumps, and air conditioners unless it is the express intent of the analyst to measure these sources*. (2) Further, FTA guidance states, t*hat it is not necessary nor recommended that existing noise exposure be determined by measuring at every noise-sensitive location in the project area. Rather, the recommended approach is to characterize the noise environment for clusters of sites based on measurements or estimates at representative locations in the community*. (7)

Based on recommendations of Caltrans and the FTA, it is not necessary to collect measurements at each individual building or residence, because each receiver measurement represents a group of buildings that share acoustical equivalence. (7) In other words, the area represented by the receiver shares similar shielding, terrain, and geometric relationship to the reference noise source. Receivers represent a location of noise sensitive areas and are used to estimate the future noise level impacts. Collecting reference ambient noise level measurements at the nearby

sensitive receiver locations allows for a comparison of the before and after Project noise levels and is necessary to assess potential noise impacts due to the Project's contribution to the ambient noise levels.

EXHIBIT 5-A: OYD1 NOISE MEASUREMENT LOCATIONS

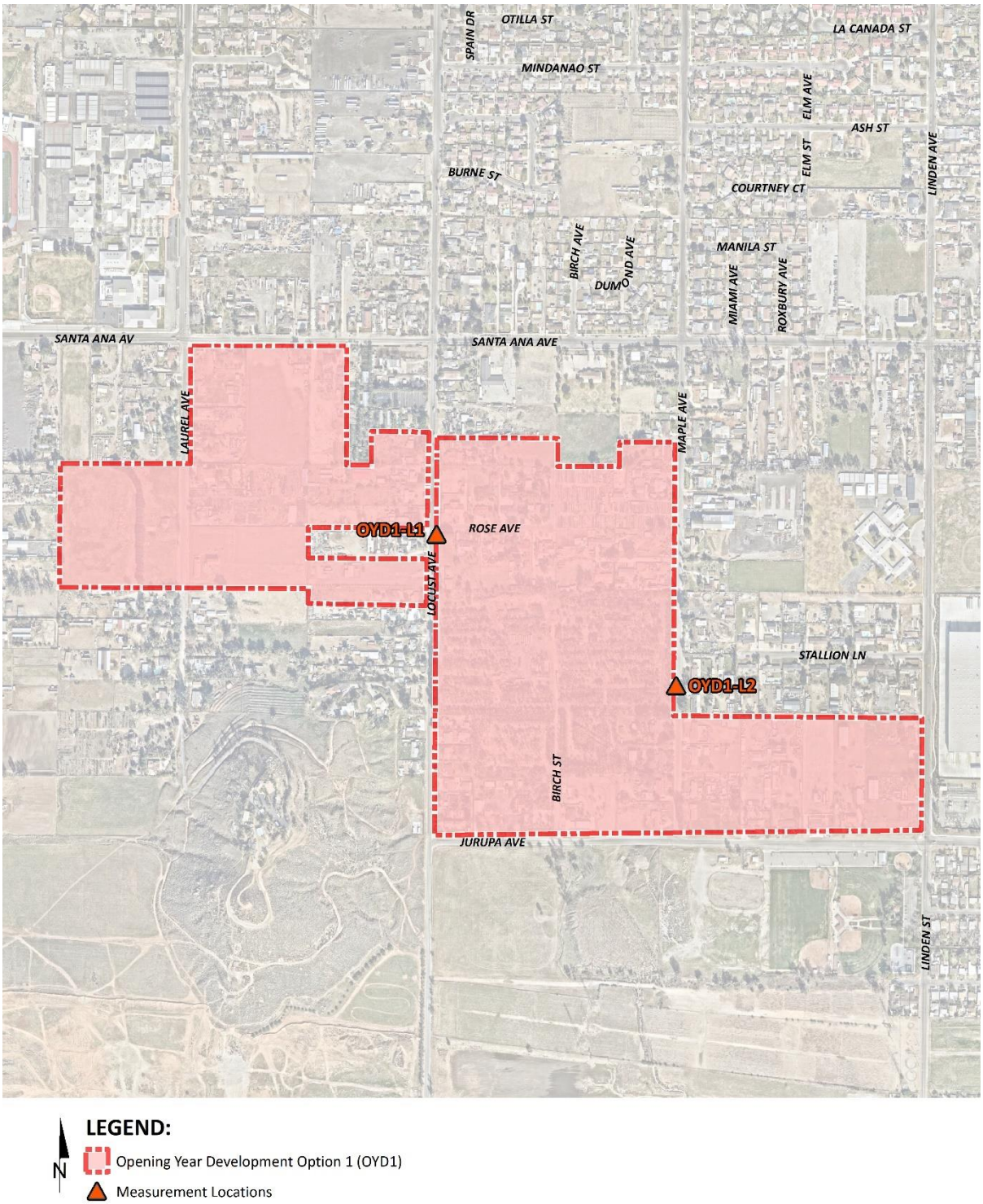


EXHIBIT 5-B: OYD2 NOISE MEASUREMENT LOCATIONS

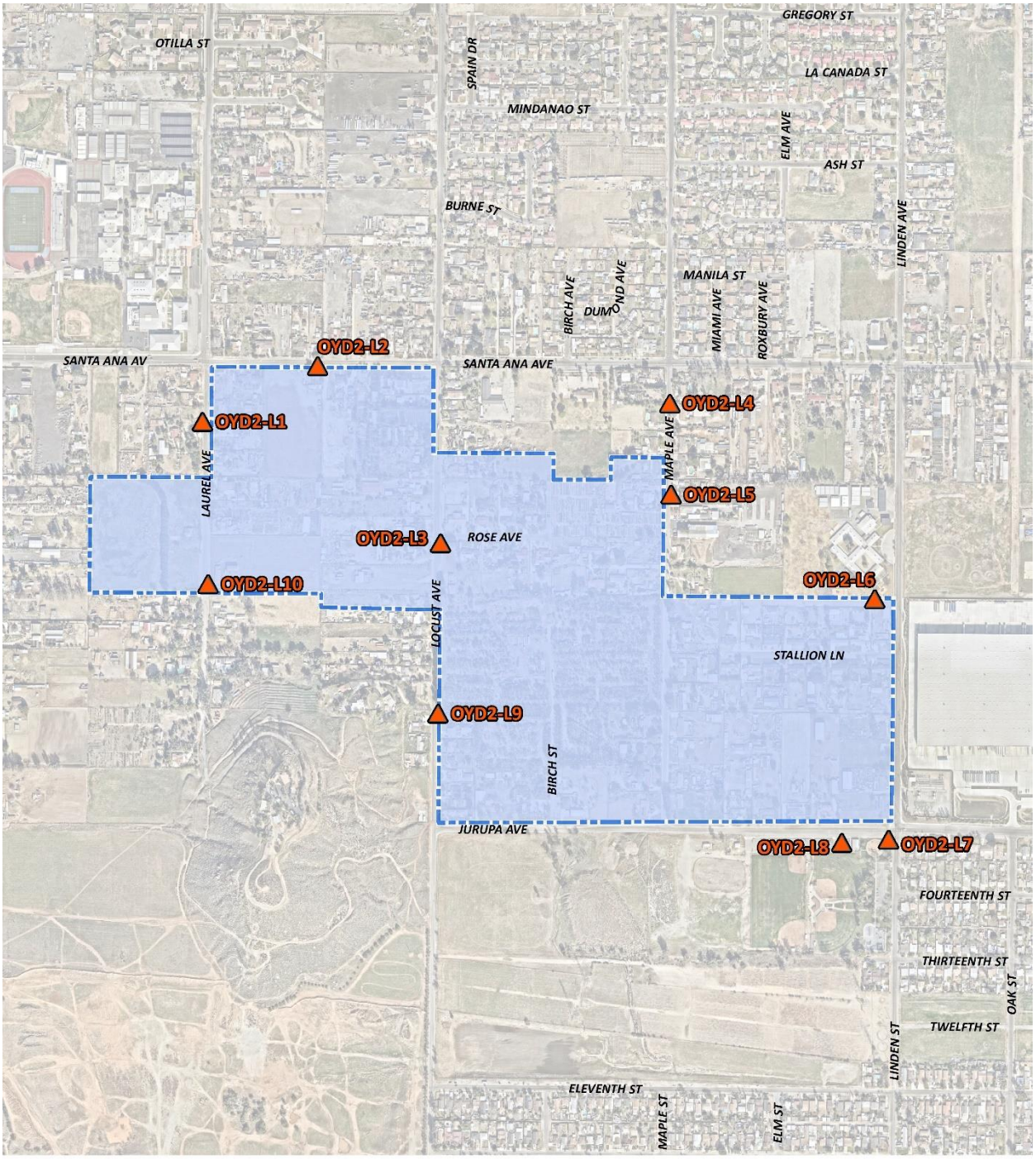
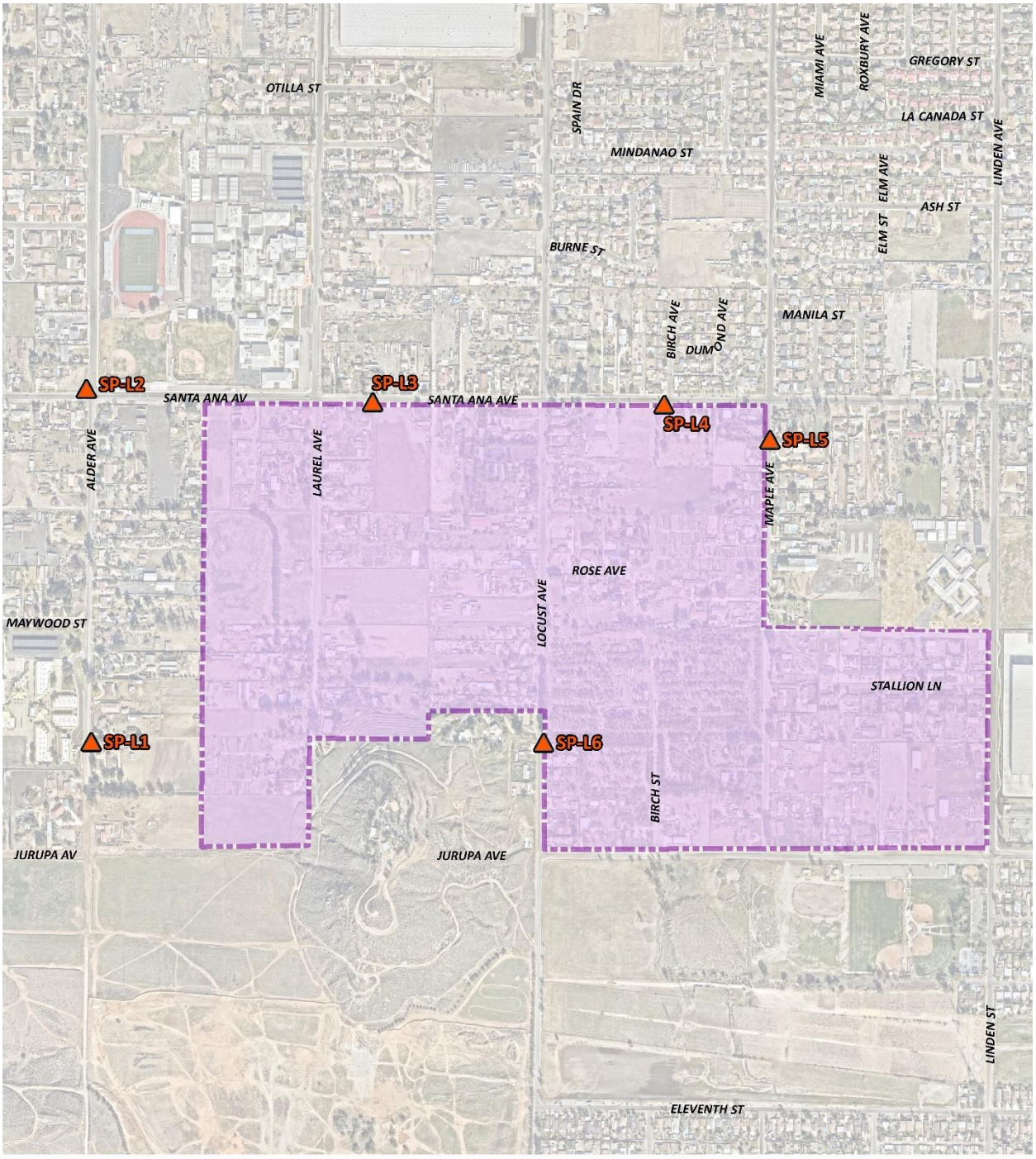


EXHIBIT 5-C: SP NOISE MEASUREMENT LOCATIONS



5.3 NOISE MEASUREMENT RESULTS

The noise measurements presented below focus on the average or equivalent sound levels (L_{eq}). The equivalent sound level (L_{eq}) represents a steady state sound level containing the same total energy as a time varying signal over a given sample period. Table 5-1 identifies the hourly daytime (7:00 a.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 7:00 a.m.) noise levels at each noise level measurement location. Appendix 5.2 provides a summary of the existing hourly ambient noise levels.

The background ambient noise levels in the Project study area are dominated by the transportation-related noise associated with surface streets in addition to background industrial land use activities. This includes the auto and heavy truck activities on study area roadway segments near the noise level measurement locations. The 24-hour existing noise level measurement results are shown on Table 5-1.

TABLE 5-1: 24-HOUR AMBIENT NOISE LEVEL MEASUREMENTS

Location[1]	Description	Energy Average Noise Level (dBA L_{eq})[2]		CNEL
		Daytime	Nighttime	
OLD1-L1, OLD2-L3	Located on Rose Avenue and Locust Avenue near existing single-family residential home at 18121 Rose Avenue.	70.6	67.2	74.5
OLD1-L2	Located on Maple Avenue near existing single-family residential home at 11181 Maple Avenue.	60.9	56.3	64.0
OLD2-L1	Located on Laurel Avenue near existing single-family residential home at 10976 Laurel Avenue.	58.6	55.2	62.6
OLD2-L2	Located on Santa Ana Avenue near existing single-family residential home at 18234 Santa Ana Avenue.	62.5	60.2	67.4
OLD2-L4, SP-L5	Located on Maple Avenue near existing single-family residential home at 10940 Maple Avenue.	58.9	56.4	63.6
OLD2-L5	Located on Santa Ana Avenue and Alder Avenue by existing single-family residential home at 10866 Alder Avenue.	67.2	65.0	72.2
OLD2-L6	Located by Walter Zimmerman Elementary School at 11050 Linden Avenue.	56.5	54.4	61.6
OLD2-L7	Located southeast of the Project site on Linden Avenue and Jurupa Avenue near existing single-family residential home at 18507 Jurupa Avenue.	67.9	62.1	70.3
OLD2-L8	Located south on Jurupa Avenue by Kessler Park at 18401 Jurupa Avenue.	59.2	54.5	62.3
OLD2-L9, SP-L6	Located on Alder Avenue near existing single-family residential home at 11223 Alder Avenue.	57.5	54.7	62.5
OLD2-L10	Located on Laurel Avenue near existing single-family residential home at 11188 Laurel Avenue.	55.3	52.5	59.8
SP-L1	Located near existing single-family residential home at 11178 Locust Avenue.	71.1	77.6	83.6
SP-L2	Located on Maple Avenue near existing single-family residential home at 11007 Maple Avenue.	60.8	57.0	65.0
SP-L3	Located on Santa Ana Avenue near existing single-family residential home at 17937 Santa Ana Avenue.	70.1	64.5	72.7
SP-L4	Located on Santa Ana Avenue near existing family residential home at 17991 Santa Ana Avenue.	75.0	73.1	80.1

[1] See Exhibits 5-A through 5-C for the noise level measurement locations.
[2] Energy (logarithmic) average levels. The long-term 24-hour measurement worksheets are included in Appendix 5.2.
"Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

6 TRAFFIC NOISE METHODS AND PROCEDURES

The following section outlines the methods and procedures used to model and analyze the future off-site traffic noise environment. Consistent with the *Land Use Compatibility for Community Noise Exposure*, all transportation related noise levels are presented in terms of the 24-hour CNEL's.

6.1 FHWA TRAFFIC NOISE PREDICTION MODEL

The expected roadway noise level increases from vehicular traffic were calculated by Urban Crossroads, Inc. using a computer program that replicates the Federal Highway Administration (FHWA) Traffic Noise Prediction Model- FHWA-RD-77-108. (15) The FHWA Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). In California the national REMELs are substituted with the California Vehicle Noise (Calveno) Emission Levels. (16) Adjustments are then made to the REMEL to account for: the roadway classification (e.g., collector, secondary, major or arterial), the roadway active width (i.e., the distance between the center of the outermost travel lanes on each side of the roadway), the total average daily traffic (ADT), the travel speed, the percentages of automobiles, medium trucks, and heavy trucks in the traffic volume, the roadway grade, the angle of view (e.g., whether the roadway view is blocked), the site conditions ("hard" or "soft" relates to the absorption of the ground, pavement, or landscaping), and the percentage of total ADT which flows each hour throughout a 24-hour period. Research conducted by Caltrans has shown that the use of soft site conditions is appropriate for the application of the FHWA traffic noise prediction model used in this analysis. (17)

6.1.1 OFF-SITE TRAFFIC NOISE PREDICTION MODEL INPUTS

Table 6-1 presents the roadway parameters used to assess the Project's off-site dBA CNEL transportation noise impacts. Table 6-1 identifies the five study area roadway segments, the distance from the centerline to adjacent land use based on the functional roadway classifications per the County of San Bernardino General Plan Circulation Element, and the posted vehicle speeds. The ADT volumes used in this study area presented on Table 6-2 are based on *Bloomington Business Park Specific Plan Traffic Impact Analysis*, prepared by Environment Planning Development (EPD) Solutions, Inc. for the following traffic scenarios under both Without and With Project conditions: Existing, Opening Year and General Plan Buildout (2040). (18)

The ADT volumes vary for each roadway segment based on the existing traffic volumes and the combination of project traffic distributions. This analysis relies on a comparative evaluation of the off-site traffic noise impacts at the boundary of the right-of-way of the receiving adjacent land use, without and with project ADT traffic volumes from the Project traffic study.

TABLE 6-1: OFF-SITE ROADWAY PARAMETERS

ID	Roadway	Segment	Receiving Land Use[1]	Distance from Centerline to Nearest Adjacent Land Use (Feet)[2]	Posted Speed Limit (mph)[3]
1	Sierra Av.	n/o Santa Ana Av.	Sensitive	60'	50
2	Cedar Av.	n/o Santa Ana Av.	Sensitive	52'	45
3	Cedar Av.	n/o 7th St.	Sensitive	52'	45
4	Santa Ana Av.	e/o Sierra Av.	Sensitive	44'	40
5	Jurupa Av.	e/o Linden Av.	Sensitive	52'	40

[1] Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.
[2] Distance to receiving land use is based upon the right-of-way distances.
[3] Based on a review of existing aerial imagery.

To quantify the off-site noise levels, the Project related truck trips were added to the heavy truck category in the FHWA noise prediction model. The addition of the Project related truck trips increases the percentage of heavy trucks in the vehicle mix. This approach recognizes that the FHWA noise prediction model is significantly influenced by the number of heavy trucks in the vehicle mix.

Table 6-3 provides the time of day (daytime, evening, and nighttime) vehicle splits. The daily Project truck trip-ends were assigned to the individual off-site study area roadway segments based on the Project truck trip distribution percentages documented in the *Traffic Impact Analysis*. Using the Project truck trips in combination with the Project trip distribution, Urban Crossroads, Inc. calculated the number of additional Project truck trips and vehicle mix percentages for each of the study area roadway segments. Table 6-4 shows the traffic flow by vehicle type (vehicle mix) used for all without Project traffic scenarios, and Tables 6-5 to 6-7 show the vehicle mixes used for the with Project traffic scenarios.

TABLE 6-2: AVERAGE DAILY TRAFFIC VOLUMES

ID	Roadway	Segment	Average Daily Traffic Volumes[1]					
			Existing		Opening Year		General Plan Buildout (2040)	
			Without Project	With Project	Without Project	With Project	Without Project	With Project
1	Sierra Av.	n/o Santa Ana Av.	28,540	28,707	29,660	29,827	48,580	48,747
2	Cedar Av.	n/o Santa Ana Av.	19,470	19,641	23,440	23,611	26,700	26,871
3	Cedar Av.	n/o 7th St.	20,430	20,551	24,290	24,411	44,150	44,271
4	Santa Ana Av.	e/o Sierra Av.	7,920	8,087	8,730	8,897	20,520	20,687
5	Jurupa Av.	e/o Linden Av.	3,490	3,704	7,530	7,744	13,600	13,814

[1] Bloomington Business Park Specific Plan Traffic Impact Analysis, EPD Solutions, Inc.

TABLE 6-3: TIME OF DAY VEHICLE SPLITS

Vehicle Type	Time of Day Splits[1]			Total of Time of Day Splits
	Daytime	Evening	Nighttime	
Autos	77.50%	12.90%	9.60%	100.00%
Medium Trucks	84.80%	4.90%	10.30%	100.00%
Heavy Trucks	86.50%	2.70%	10.80%	100.00%

[1] Typical Southern California vehicle mix.
"Daytime" = 7:00 a.m. to 7:00 p.m.; "Evening" = 7:00 p.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

TABLE 6-4: WITHOUT PROJECT VEHICLE MIX

Classification	Total % Traffic Flow[1]			Total
	Autos	Medium Trucks	Heavy Trucks	
All Segments	97.42%	1.84%	0.74%	100.00%

[1] County of Riverside Office of Industrial Hygiene. Values rounded to the nearest one-hundredth.

Due to the added Project truck trips, the increase in Project traffic volumes and the distributions of trucks on the study area road segments, the percentage of autos, medium trucks and heavy trucks will vary for each of the traffic scenarios. This explains why the existing and future traffic volumes and vehicle mixes vary between seemingly identical study area roadway segments.

TABLE 6-5: EXISTING WITH PROJECT VEHICLE MIX

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
1	Sierra Av.	n/o Santa Ana Av.	97.43%	1.83%	0.74%	100.00%
2	Cedar Av.	n/o Santa Ana Av.	97.06%	1.93%	1.02%	100.00%
3	Cedar Av.	n/o 7th St.	97.31%	1.86%	0.83%	100.00%
4	Santa Ana Av.	e/o Sierra Av.	97.47%	1.80%	0.72%	100.00%
5	Jurupa Av.	e/o Linden Av.	95.27%	2.33%	2.40%	100.00%

[1] Bloomington Business Park Specific Plan Traffic Impact Analysis, EPD Solutions, Inc.
[2] Total of vehicle mix percentage values rounded to the nearest one-hundredth.

TABLE 6-6: OPENING YEAR WITH PROJECT VEHICLE MIX

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
1	Sierra Av.	n/o Santa Ana Av.	97.43%	1.83%	0.74%	100.00%
2	Cedar Av.	n/o Santa Ana Av.	97.12%	1.91%	0.97%	100.00%
3	Cedar Av.	n/o 7th St.	97.33%	1.86%	0.81%	100.00%
4	Santa Ana Av.	e/o Sierra Av.	97.47%	1.81%	0.73%	100.00%
5	Jurupa Av.	e/o Linden Av.	96.39%	2.07%	1.53%	100.00%

[1] Bloomington Business Park Specific Plan Traffic Impact Analysis, EPD Solutions, Inc.
[2] Total of vehicle mix percentage values rounded to the nearest one-hundredth.

TABLE 6-7: GENERAL PLAN BUILDOUT WITH PROJECT VEHICLE MIX

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
1	Sierra Av.	n/o Santa Ana Av.	97.43%	1.83%	0.74%	100.00%
2	Cedar Av.	n/o Santa Ana Av.	97.15%	1.90%	0.94%	100.00%
3	Cedar Av.	n/o 7th St.	97.37%	1.85%	0.78%	100.00%
4	Santa Ana Av.	e/o Sierra Av.	97.44%	1.83%	0.73%	100.00%
5	Jurupa Av.	e/o Linden Av.	96.84%	1.97%	1.18%	100.00%

[1] Bloomington Business Park Specific Plan Traffic Impact Analysis, EPD Solutions, Inc.
[2] Total of vehicle mix percentage values rounded to the nearest one-hundredth.

7 OFF-SITE TRAFFIC NOISE ANALYSIS

To assess the off-site transportation CNEL noise level impacts associated with development of the proposed Project, noise contours were developed based on the Bloomington Business Park Specific Plan Traffic Impact Analysis prepared by EPD Solutions, Inc. (18) Noise contour boundaries represent the equal levels of noise exposure and are measured in CNEL from the center of the roadway.

7.1 TRAFFIC NOISE CONTOURS

Noise contours were used to assess the Project's incremental traffic-related noise impacts at land uses adjacent to roadways conveying Project traffic. The noise contours represent the distance to noise levels of a constant value and are measured from the center of the roadway for the 70, 65, and 60 dBA noise levels. The noise contours do not consider the effect of any existing noise barriers or topography that may attenuate ambient noise levels. In addition, because the noise contours reflect modeling of vehicular noise on area roadways, they appropriately do not reflect noise contributions from the surrounding stationary noise sources within the Project study area. Tables 7-1 to 7-6 present a summary of the exterior traffic noise levels for each traffic condition. Appendix 7.1 includes the traffic noise level contours worksheets for each traffic condition.

TABLE 7-1: EXISTING WITHOUT PROJECT CONTOURS

ID	Road	Segment	Adjacent Existing Land Use[1]	CNEL at Nearest Adjacent Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Sierra Av.	n/o Santa Ana Av.	Sensitive	72.6	90	193	417
2	Cedar Av.	n/o Santa Ana Av.	Sensitive	69.9	RW	110	236
3	Cedar Av.	n/o 7th St.	Sensitive	70.1	53	113	244
4	Santa Ana Av.	e/o Sierra Av.	Sensitive	65.6	RW	48	104
5	Jurupa Av.	e/o Linden Av.	Sensitive	61.1	RW	RW	62

[1] Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.
[2] The CNEL is calculated at the boundary of the right-of-way of the receiving adjacent land use.
"RW" = Location of the respective noise contour falls within the right-of-way of the road.

TABLE 7-2: EXISTING WITH PROJECT CONTOURS

ID	Road	Segment	Adjacent Existing Land Use[1]	CNEL at Nearest Adjacent Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Sierra Av.	n/o Santa Ana Av.	Sensitive	72.6	90	194	418
2	Cedar Av.	n/o Santa Ana Av.	Sensitive	70.2	54	116	249
3	Cedar Av.	n/o 7th St.	Sensitive	70.2	54	115	249
4	Santa Ana Av.	e/o Sierra Av.	Sensitive	65.6	RW	49	105
5	Jurupa Av.	e/o Linden Av.	Sensitive	63.1	RW	RW	84

[1] Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.
[2] The CNEL is calculated at the boundary of the right-of-way of the receiving adjacent land use.
"RW" = Location of the respective noise contour falls within the right-of-way of the road.

TABLE 7-3: OPENING YEAR WITHOUT PROJECT CONTOURS

ID	Road	Segment	Adjacent Existing Land Use[1]	CNEL at Nearest Adjacent Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Sierra Av.	n/o Santa Ana Av.	Sensitive	72.8	92	199	428
2	Cedar Av.	n/o Santa Ana Av.	Sensitive	70.7	58	124	267
3	Cedar Av.	n/o 7th St.	Sensitive	70.8	59	127	274
4	Santa Ana Av.	e/o Sierra Av.	Sensitive	66.0	RW	51	111
5	Jurupa Av.	e/o Linden Av.	Sensitive	64.5	RW	RW	103

[1] Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.
[2] The CNEL is calculated at the boundary of the right-of-way of the receiving adjacent land use.
"RW" = Location of the respective noise contour falls within the right-of-way of the road.

TABLE 7-4: OPENING YEAR WITH PROJECT CONTOURS

ID	Road	Segment	Receiving Land Use[1]	CNEL at Receiving Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Sierra Av.	n/o Santa Ana Av.	Non-Sensitive	72.8	92	199	429
2	Cedar Av.	n/o Santa Ana Av.	Non-Sensitive	71.0	60	130	279
3	Cedar Av.	n/o 7th St.	Non-Sensitive	70.9	60	129	278
4	Santa Ana Av.	e/o Sierra Av.	Non-Sensitive	66.1	RW	52	111
5	Jurupa Av.	e/o Linden Av.	Non-Sensitive	65.5	RW	RW	121

[1] Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.
[2] The CNEL is calculated at the boundary of the right-of-way of the receiving adjacent land use.
"RW" = Location of the respective noise contour falls within the right-of-way of the road.

TABLE 7-5: GENERAL PLAN BUILDOUT WITHOUT PROJECT CONTOURS

ID	Road	Segment	Receiving Land Use[1]	CNEL at Receiving Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Sierra Av.	n/o Santa Ana Av.	Non-Sensitive	74.9	128	276	594
2	Cedar Av.	n/o Santa Ana Av.	Non-Sensitive	71.2	63	135	292
3	Cedar Av.	n/o 7th St.	Non-Sensitive	73.4	88	189	408
4	Santa Ana Av.	e/o Sierra Av.	Non-Sensitive	69.7	42	91	195
5	Jurupa Av.	e/o Linden Av.	Non-Sensitive	67.0	RW	71	153

[1] Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.
[2] The CNEL is calculated at the boundary of the right-of-way of the receiving adjacent land use.
"RW" = Location of the respective noise contour falls within the right-of-way of the road.

TABLE 7-6: GENERAL PLAN BUILDOUT WITH PROJECT CONTOURS

ID	Road	Segment	Receiving Land Use[1]	CNEL at Receiving Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Sierra Av.	n/o Santa Ana Av.	Non-Sensitive	74.9	128	276	595
2	Cedar Av.	n/o Santa Ana Av.	Non-Sensitive	71.5	65	141	303
3	Cedar Av.	n/o 7th St.	Non-Sensitive	73.5	89	191	411
4	Santa Ana Av.	e/o Sierra Av.	Non-Sensitive	69.7	42	91	196
5	Jurupa Av.	e/o Linden Av.	Non-Sensitive	67.6	RW	78	168

[1] Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.
[2] The CNEL is calculated at the boundary of the right-of-way of the receiving adjacent land use.
"RW" = Location of the respective noise contour falls within the right-of-way of the road.

7.2 EXISTING PROJECT TRAFFIC NOISE LEVEL INCREASES

An analysis of existing traffic noise levels plus traffic noise generated by the proposed Project has been included in this report for informational purposes and to fully analyze all the existing traffic scenarios identified in the Bloomington Business Park Specific Plan Traffic Impact Analysis. However, the analysis of existing off-site traffic noise levels plus traffic noise generated by the proposed Project scenario will not actually occur since the Project would not be fully constructed and operational until Opening Year conditions. Table 7-1 shows the Existing without Project conditions CNEL noise levels. The Existing without Project exterior noise levels range from 61.1 to 72.6 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-2 shows the Existing with Project conditions ranging from 63.1 to 72.6 dBA CNEL. Table 7-7 shows that the Project off-site traffic noise level increases range from 0.0 to 2.0 dBA CNEL on the study area roadway segments.

7.3 OPENING YEAR TRAFFIC NOISE LEVEL INCREASES

Table 7-3 presents the Opening Year without Project conditions CNEL noise levels. The Opening Year without Project exterior noise levels range from 64.5 to 72.8 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-4 shows that the Opening Year with Project conditions will range from 65.5 to 72.8 dBA CNEL. Table 7-8 shows that the Project off-site traffic noise level increases range from 0.0 to 1.0 dBA CNEL.

7.4 GENERAL PLAN BUILDOUT 2040 TRAFFIC NOISE LEVEL INCREASES

Table 7-5 presents the General Plan Buildout 2040 without Project conditions CNEL noise levels. The General Plan Buildout 2040 without Project exterior noise levels range from 67.0 to 74.9 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-6 shows that the General Plan Buildout 2040 with Project conditions range from 67.6 to 74.9 dBA CNEL. Table 7-9 shows that the Project off-site traffic noise level increases range from 0.0 to 0.6 dBA CNEL.

TABLE 7-7: EXISTING WITH PROJECT TRAFFIC NOISE LEVEL INCREASES

ID	Road	Segment	CNEL at Adjacent Land Use (dBA)[1]			Noise-Sensitive Land Use?[2]	Incremental Noise Level Increase Threshold[3]	
			Existing Ambient	Existing +Project	Project Increase		Limit	Exceeded?
1	Sierra Av.	n/o Santa Ana Av.	72.6	72.6	0.0	Yes	1.5	No
2	Cedar Av.	n/o Santa Ana Av.	69.9	70.2	0.3	Yes	1.5	No
3	Cedar Av.	n/o 7th St.	70.1	70.2	0.1	Yes	1.5	No
4	Santa Ana Av.	e/o Sierra Av.	65.6	65.6	0.0	Yes	1.5	No
5	Jurupa Av.	e/o Linden Av.	61.1	63.1	2.0	Yes	3.0	No

[1] The CNEL is calculated at the boundary of the right-of-way of each roadway and the nearest adjacent land use.
[2] "Yes" = Existing, noise-sensitive land uses adjacent to the study area roadway segment.
[3] Does the Project create an incremental noise level increase exceeding the significance criteria (Table 4-1)?

TABLE 7-8: OPENING YEAR WITH PROJECT TRAFFIC NOISE LEVEL INCREASES

ID	Road	Segment	CNEL at Adjacent Land Use (dBA)[1]			Noise-Sensitive Land Use?[2]	Incremental Noise Level Increase Threshold[3]	
			No Project	With Project	Project Increase		Limit	Exceeded?
1	Sierra Av.	n/o Santa Ana Av.	72.8	72.8	0.0	Yes	1.5	No
2	Cedar Av.	n/o Santa Ana Av.	70.7	71.0	0.3	Yes	1.5	No
3	Cedar Av.	n/o 7th St.	70.8	70.9	0.1	Yes	1.5	No
4	Santa Ana Av.	e/o Sierra Av.	66.0	66.1	0.1	Yes	1.5	No
5	Jurupa Av.	e/o Linden Av.	64.5	65.5	1.0	Yes	3.0	No

[1] The CNEL is calculated at the boundary of the right-of-way of each roadway and the nearest adjacent land use.
[2] "Yes" = Existing, noise-sensitive land uses adjacent to the study area roadway segment.
[3] Does the Project create an incremental noise level increase exceeding the significance criteria (Table 4-1)?

TABLE 7-9: GENERAL PLAN BUILDOUT WITH PROJECT TRAFFIC NOISE LEVEL INCREASES

ID	Road	Segment	CNEL at Adjacent Land Use (dBA)[1]			Noise-Sensitive Land Use?[2]	Incremental Noise Level Increase Threshold[3]	
			No Project	With Project	Project Increase		Limit	Exceeded?
1	Sierra Av.	n/o Santa Ana Av.	74.9	74.9	0.0	Yes	1.5	No
2	Cedar Av.	n/o Santa Ana Av.	71.2	71.5	0.3	Yes	1.5	No
3	Cedar Av.	n/o 7th St.	73.4	73.5	0.1	Yes	1.5	No
4	Santa Ana Av.	e/o Sierra Av.	69.7	69.7	0.0	Yes	1.5	No
5	Jurupa Av.	e/o Linden Av.	67.0	67.6	0.6	Yes	1.5	No

[1] The CNEL is calculated at the boundary of the right-of-way of each roadway and the nearest adjacent land use.
[2] "Yes" = Existing, noise-sensitive land uses adjacent to the study area roadway segment.
[3] Does the Project create an incremental noise level increase exceeding the significance criteria (Table 4-1)?

8 SENSITIVE RECEIVER LOCATIONS

To assess the potential for long-term operational and short-term construction noise impacts, the following sensitive receiver locations, as shown on Exhibits 8-A through 8-C, were identified as representative locations for analysis. Sensitive receivers are generally defined as locations where people reside or where the presence of unwanted sound could otherwise adversely affect the use of the land. Noise-sensitive land uses are generally considered to include schools, hospitals, single-family dwellings, mobile home parks, churches, libraries, and recreation areas. Moderately noise-sensitive land uses typically include multi-family dwellings, hotels, motels, dormitories, out-patient clinics, cemeteries, golf courses, country clubs, athletic/tennis clubs, and equestrian clubs. Land uses that are considered relatively insensitive to noise include business, commercial, and professional developments. Land uses that are typically not affected by noise include: industrial, manufacturing, utilities, agriculture, undeveloped land, parking lots, warehousing, liquid and solid waste facilities, salvage yards, and transit terminals.

To describe the potential off-site Project noise levels, 20 receiver locations in the vicinity of the Project site were identified. All distances are measured from the Project site boundaries to the outdoor living areas (e.g., private backyards) or at the building façade, whichever is closer to the Project site. The selection of receiver locations is based on FHWA guidelines and is consistent with additional guidance provided by Caltrans and the FTA, as previously described in Section 5.2. Other sensitive land uses in the Project study area that are located at greater distances than those identified in this noise study will experience lower noise levels than those presented in this report due to the additional attenuation from distance and the shielding of intervening structures. Distance is measured in a straight line from the project boundary to each receiver location.

OYD1-R1: Location OYD1-R1 represents the existing noise sensitive residence at 10984 Locust Avenue, approximately 42 feet north of the Project site. Since there are no private outdoor living areas (backyards) facing the Project site, OYD1-R1 is placed at the building façade. A 24-hour noise measurement was taken near this location, OYD1-L1, to describe the existing ambient noise environment.

OYD1-R2: Location OYD1-R2 represents the existing noise sensitive residence at 11062 Locust Avenue, approximately 66 feet south of the Project site. Since there are no private outdoor living areas (backyards) facing the Project site, OYD1-R2 is placed at the building façade. A 24-hour noise measurement was taken near this location, OYD1-L1, to describe the existing ambient noise environment.

OYD1-R3: Location OYD1-R3 represents the existing noise sensitive residence at 11161 Maple Avenue, approximately 94 feet east of the Project site. Since there are no private outdoor living areas (backyards) facing the Project site, OYD1-R3 is placed at the building façade. A 24-hour noise measurement was taken near this location, OYD1-L2, to describe the existing ambient noise environment.

OYD1-R4: Location OYD1-R4 represents the existing noise sensitive residence at 11181 Maple Avenue, approximately 11 feet north of the Project site. Since there are no private outdoor living areas (backyards) facing the Project site, OYD1-R4 is

placed at the building façade. A 24-hour noise measurement was taken near this location, OYD1-L2, to describe the existing ambient noise environment.

OYD2-R1: Location OYD2-R1 represents the existing noise sensitive residence at 10910 Laurel Avenue, approximately 80 feet west of the Project site. Since there are no private outdoor living areas (backyards) facing the Project site, receiver OYD2-R1 is placed at the building façade. A 24-hour noise measurement was taken near this location, OYD2-L1, to describe the existing ambient noise environment.

OYD2-R2: Location OYD2-R2 represents the existing noise sensitive residence at 17982 Santa Ana Avenue, approximately 38 feet east of the Project site. Since there are no private outdoor living areas (backyards) facing the Project site, receiver R2 is placed at the building façade. A 24-hour noise measurement was taken near this location, OYD2-L2, to describe the existing ambient noise environment.

OYD2-R3: Location OYD2-R3 represents the existing noise sensitive residence at 10923 Locust Avenue, approximately 91 feet east of the Project site. Since there are no private outdoor living areas (backyards) facing the Project site, receiver OYD2-R3 is placed at the building façade. A 24-hour noise measurement was taken near this location, OYD2-L3, to describe the existing ambient noise environment.

OYD2-R4: Location OYD2-R4 represents the existing noise sensitive residence at 10988 Maple Avenue, approximately 65 feet north of the Project site. OYD2-R4 is placed at the private outdoor living areas (backyards) facing the Project site. A 24-hour noise measurement was taken near this location, OYD2-L4, to describe the existing ambient noise environment.

OYD2-R5: Location OYD2-R5 represents the existing noise sensitive residence at 11043 Maple Avenue, approximately 75 feet east of the Project site. Since there are no private outdoor living areas (backyards) facing the Project site, receiver OYD2-R5 is placed at the building façade. A 24-hour noise measurement was taken near this location, OYD2-L5, to describe the existing ambient noise environment.

OYD2-R6: Location OYD2-R6 represents the Walter Zimmerman Elementary School at 11050 Linden Avenue, approximately 85 feet north of the Project site. OYD2-R6 is placed at the building façade. A 24-hour noise measurement was taken near this location, OYD2-L6, to describe the existing ambient noise environment.

OYD2-R7: Location OYD2-R7 represents the existing noise sensitive residence at 18507 Jurupa Avenue, approximately 166 feet southeast of the Project site. Since there are no private outdoor living areas (backyards) facing the Project site, receiver OYD2-R7 is placed at the building façade. A 24-hour noise measurement was taken near this location, OYD2-L7, to describe the existing ambient noise environment.

OYD2-R8: Location OYD2-R8 represents Kessler Park at 18401 Jurupa Avenue, approximately 230 feet south of the Project site. OYD2-R8 is placed at the building façade. A 24-hour noise measurement was taken near this location, OYD2-L8, to describe the existing ambient noise environment.

OYD2-R9: Location OYD2-R9 represents the existing noise sensitive residence at 11142 Locust Avenue, approximately 127 feet west of the Project site. Since there are no private outdoor living areas (backyards) facing the Project site, receiver OYD2-

R9 is placed at the building façade. A 24-hour noise measurement was taken near this location, OYD2-L9, to describe the existing ambient noise environment.

OYD2-R10: Location OYD2-R10 represents the existing noise sensitive residence at 11138 Laurel Avenue, approximately 120 feet south of the Project site. Since there are no private outdoor living areas (backyards) facing the Project site, receiver OYD2-R10 is placed at the building façade. A 24-hour noise measurement was taken near this location, OYD2-L10, to describe the existing ambient noise environment.

SP-R1: Location SP-R1 represents the existing noise sensitive residence at 11137 Alder Avenue, approximately 276 feet east of the Project site. SP-R1 is placed at the private outdoor living areas (backyards) facing the Project site. A 24-hour noise measurement was taken near this location, SP-L1, to describe the existing ambient noise environment.

SP-R2: Location SP-R2 represents the existing noise sensitive residence at 10913 Alder Avenue, approximately 30 feet east of the Project site. Since there are no private outdoor living areas (backyards) facing the Project site, SP-R2 is placed at the building façade. A 24-hour noise measurement was taken near this location, SP-L2, to describe the existing ambient noise environment.

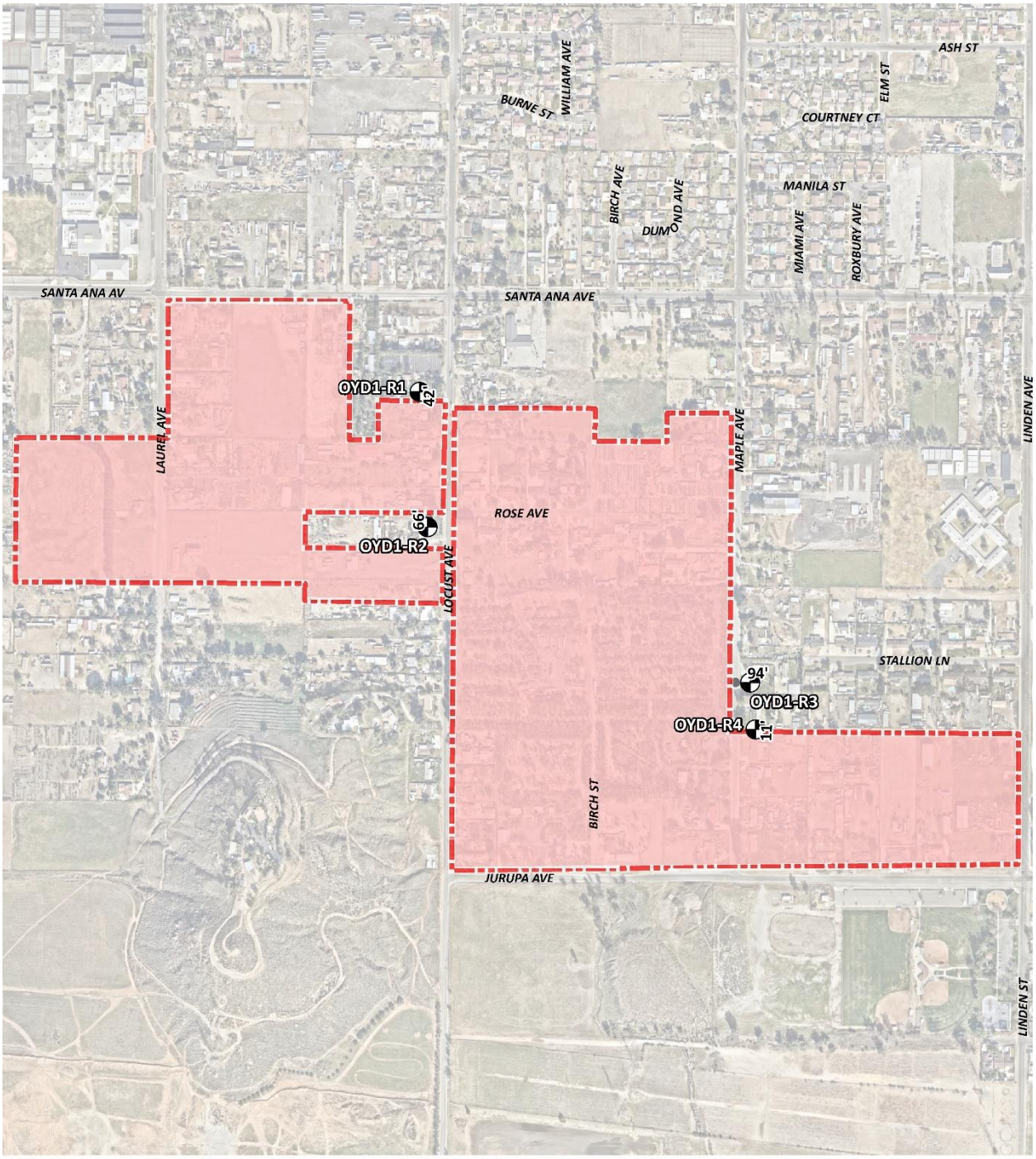
SP-R3: Location SP-R3 represents Bloomington High School at 10750 Laurel Avenue, approximately 92 feet north of the Project site. SP-R3 is placed at the building façade. A 24-hour noise measurement was taken near this location, SP-L3, to describe the existing ambient noise environment.

SP-R4: Location SP-R4 represents the existing noise sensitive residence at 10888 Birch Avenue, approximately 82 feet north of the Project site. Since there are no private outdoor living areas (backyards) facing the Project site, SP-R4 is placed at the building façade. A 24-hour noise measurement was taken near this location, SP-L4, to describe the existing ambient noise environment.

SP-R5: Location SP-R5 represents the existing noise sensitive residence at 10935 Maple Avenue, approximately 90 feet east of the Project site. Since there are no private outdoor living areas (backyards) facing the Project site, SP-R5 is placed at the building façade. A 24-hour noise measurement was taken near this location, SP-L5, to describe the existing ambient noise environment.

SP-R6: Location SP-R6 represents the existing noise sensitive residence at 11198 Locust Avenue, approximately 13 feet south of the Project site. Since there are no private outdoor living areas (backyards) facing the Project site, SP-R6 is placed at the building façade. A 24-hour noise measurement was taken near this location, SP-L6, to describe the existing ambient noise environment.

EXHIBIT 8-A: OYD1 SENSITIVE RECEIVER LOCATIONS



LEGEND:

N

Opening Year Development Option 1 (OYD1)

Distance from receiver to Project site boundary (in feet)

Receiver Locations

EXHIBIT 8-B: OYD2 SENSITIVE RECEIVER LOCATIONS

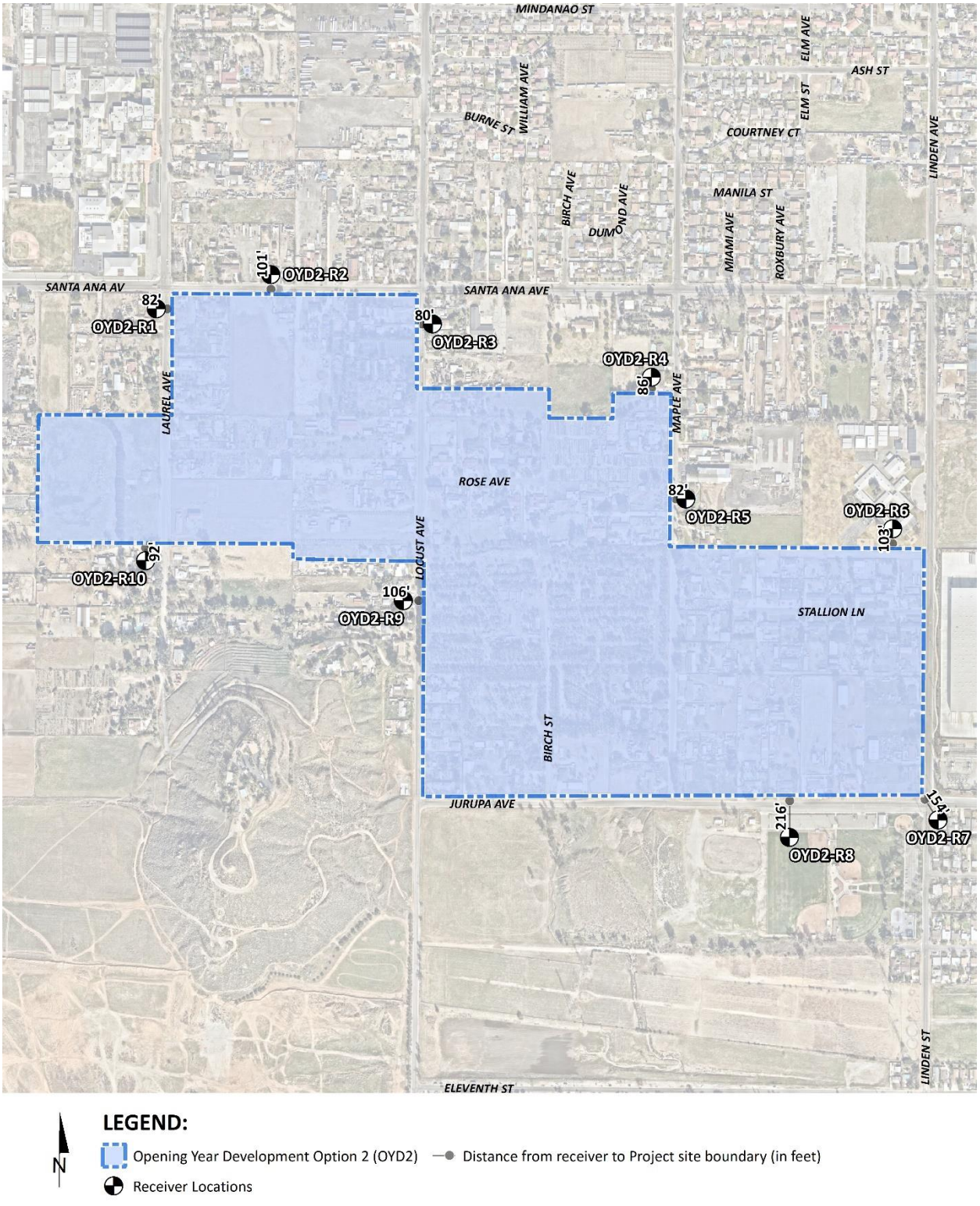
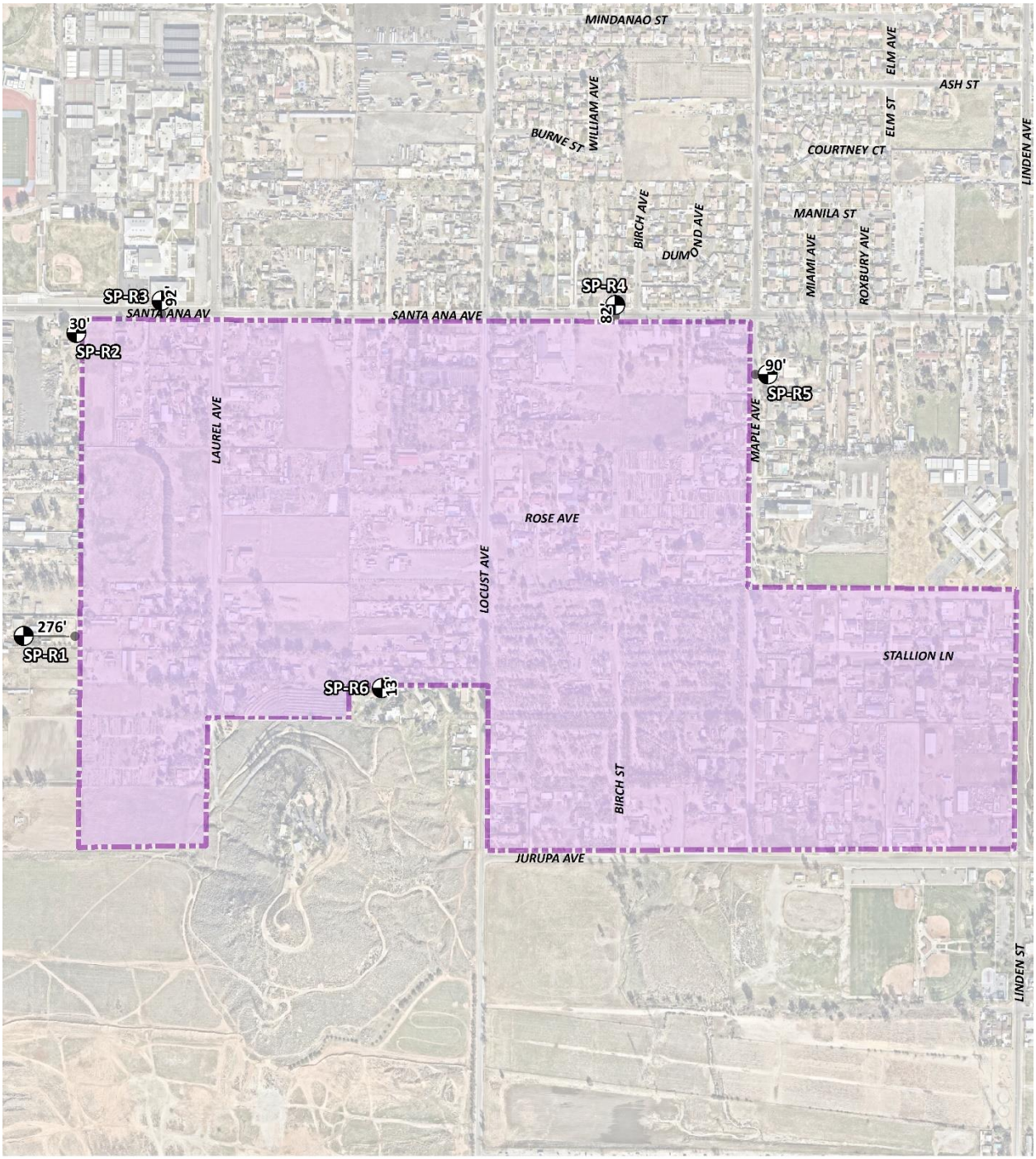


EXHIBIT 8-C: SP SENSITIVE RECEIVER LOCATIONS



9 OPERATIONAL NOISE IMPACTS

This section analyzes the potential stationary-source operational noise impacts at the nearest receiver locations, identified in Section 8, resulting from the operation of the proposed Bloomington Business Park Specific Plan Project. Exhibits 9-A through 9-C identify the representative noise source locations and the planned screen walls used to assess the operational noise levels. Since there is no project specific development proposed in the Specific Plan area at this time, this analysis analyzes the worst-case scenario with loading dock and trailer activity as the primary noise source activity as shown on Exhibit 9-C.

9.1 OPERATIONAL NOISE SOURCES

This operational noise analysis is intended to describe noise level impacts associated with the expected typical of daytime and nighttime activities at the Project site. To present the potential worst-case noise conditions, this analysis assumes the Project would be operational 24 hours per day, seven days per week. Consistent with similar warehouse uses, the Project business operations would primarily be conducted within the enclosed buildings, except for traffic movement, parking, as well as loading and unloading of trucks at designated loading bays. The on-site Project-related noise sources are expected to include: loading dock activity, trailer activity, truck movements, roof-top air conditioning units, parking lot vehicle movements, and trash enclosure activity.

9.2 REFERENCE NOISE LEVELS

To estimate the Project operational noise impacts, reference noise level measurements were collected from similar types of activities to represent the noise levels expected with the development of the proposed Project. This section provides a detailed description of the reference noise level measurements shown on Table 9-1 used to estimate the Project operational noise impacts. It is important to note that the following projected noise levels assume the worst-case noise environment with the loading dock activity, trailer activity, truck movements, roof-top air conditioning units, parking lot vehicle movements, and trash enclosure activity all operating continuously. These sources of noise activity will likely vary throughout the day.

9.2.1 MEASUREMENT PROCEDURES

The reference noise level measurements presented in this section were collected using a Larson Davis LxT Type 1 precisions sound level meter (serial number 01146). The LxT sound level meter was calibrated using a Larson-Davis calibrator, Model CAL 200, was programmed in "slow" mode to record noise levels in "A" weighted form and was located at approximately five feet above the ground elevation for each measurement. The sound level meters and microphones were equipped with a windscreen during all measurements. All noise level measurement equipment satisfies the American National Standards Institute (ANSI) standard specifications for sound level meters ANSI S1.4-2014/IEC 61672-1:2013. (14)

EXHIBIT 9-A: OYD1 OPERATIONAL NOISE SOURCE LOCATIONS

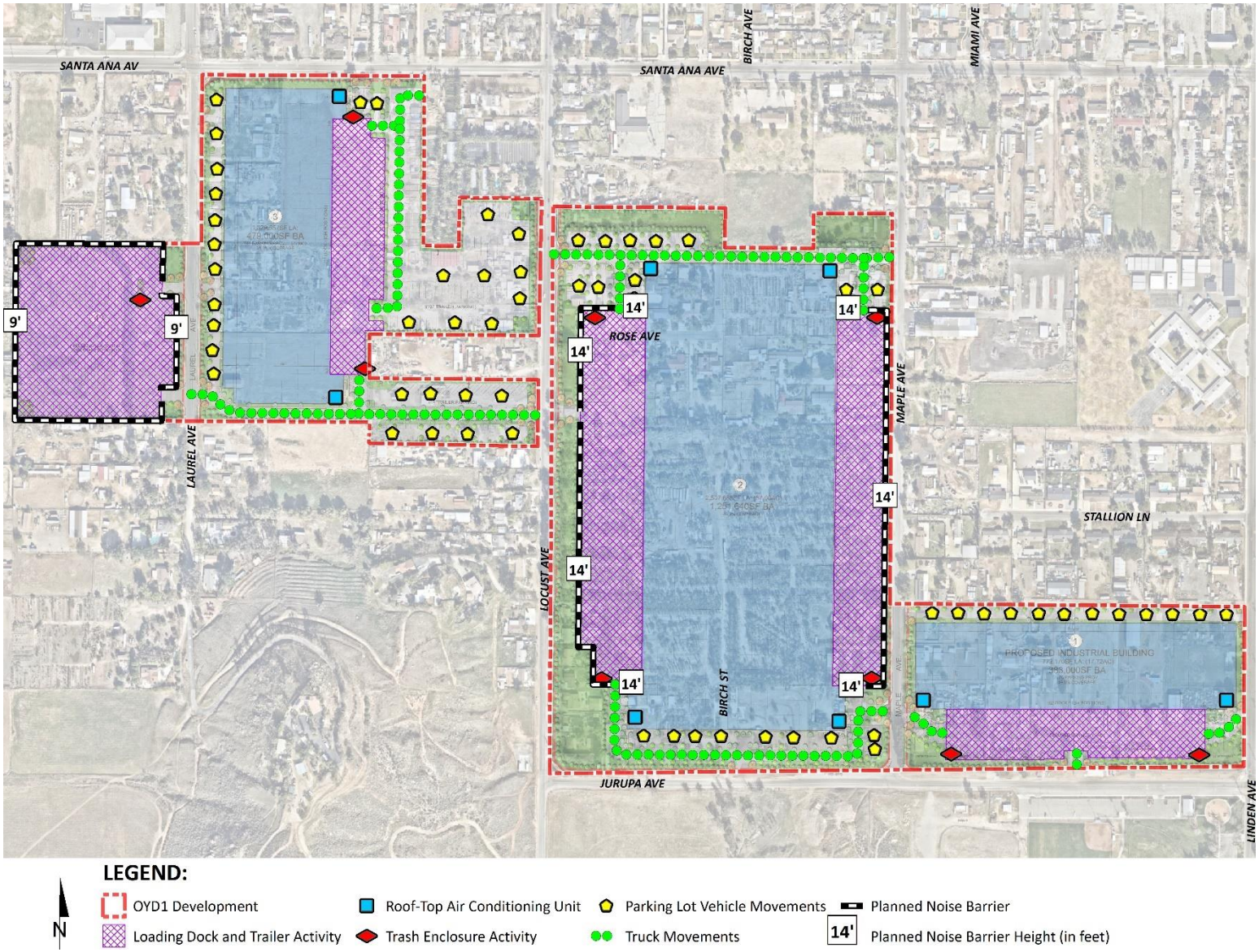


EXHIBIT 9-B: OYD2 OPERATIONAL NOISE SOURCE LOCATIONS

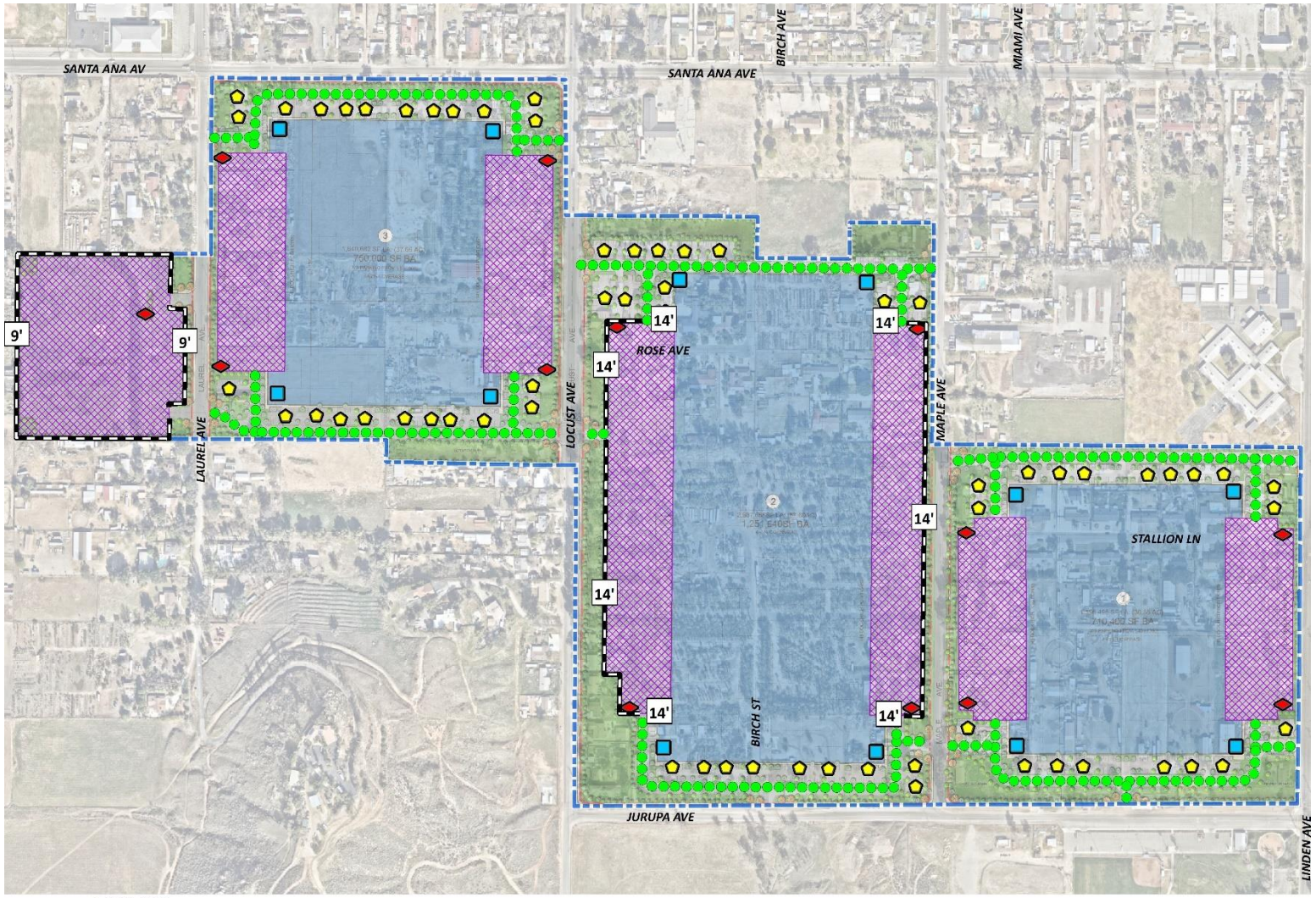


EXHIBIT 9-C: SP OPERATIONAL NOISE SOURCE LOCATIONS

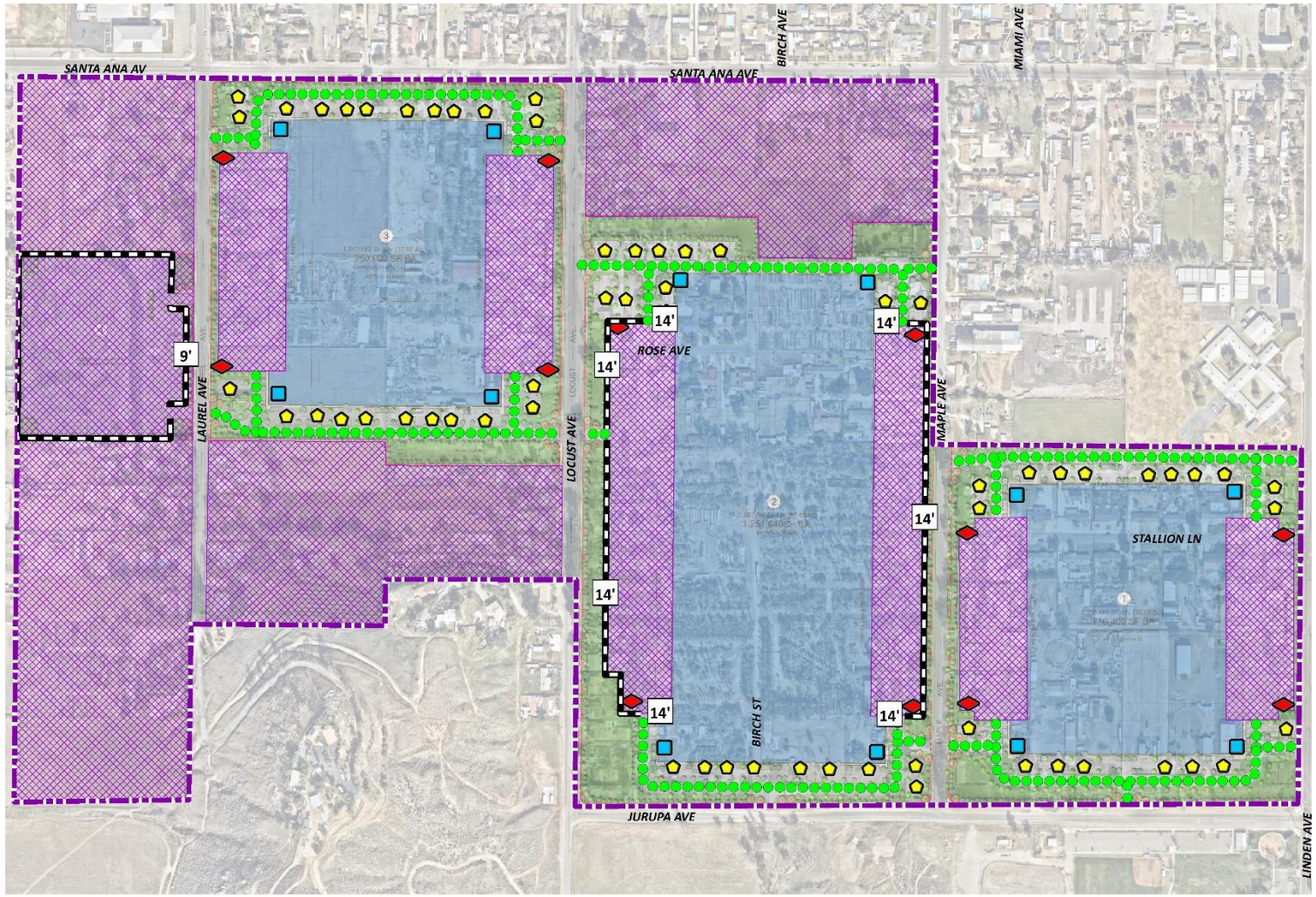


TABLE 9-1: REFERENCE NOISE LEVEL MEASUREMENTS

Noise Source[1]	Noise Source Height (Feet)	Min./Hour[2]		Reference Noise Level (dBA L_{eq}) @ 50 Feet	Sound Power Level (dBA)[3]
		Day	Night		
Loading Dock and Trailer Activity	8'	60	60	62.8	103.4
Truck Movements	8'	60	60	59.8	93.2
Roof-Top Air Conditioning Units	5'	39	28	57.2	88.9
Parking Lot Vehicle Movements	5'	60	60	56.1	87.8
Trash Enclosure Activity	5'	10	10	57.3	89.0

[1] As measured by Urban Crossroads, Inc.
[2] Anticipated duration (minutes within the hour) of noise activity during typical hourly conditions expected at the Project site. "Daytime" = 7:00 a.m. - 10:00 p.m.; "Nighttime" = 10:00 p.m. - 7:00 a.m.
[3] Sound power level represents the total amount of acoustical energy (noise level) produced by a sound source independent of distance or surroundings. Sound power levels calculated using the CadnaA noise model at the reference distance to the noise source. Numbers may vary due to size differences between point and area noise sources.

9.2.2 LOADING DOCK AND TRAILER ACTIVITY

The reference loading dock activities are intended to describe the typical operational noise source levels associated with the Project. This includes truck idling, deliveries, backup alarms, unloading/loading, docking including a combination of tractor trailer semi-trucks, two-axle delivery trucks, and background forklift operations. At a uniform reference distance of 50 feet, Urban Crossroads collected a reference noise level of 62.8 dBA L_{eq}. The loading dock activity noise level measurement was taken over a fifteen-minute period and represents multiple noise sources taken from the center of activity. The reference noise level measurement includes employees unloading a docked truck container included the squeaking of the truck's shocks when weight was removed from the truck, employees playing music over a radio, as well as a forklift horn and backup alarm. In addition, during the noise level measurement a truck entered the loading dock area and proceeded to reverse and dock in a nearby loading bay, adding truck engine, idling, air brakes noise, in addition to on-going idling of an already docked truck.

The noise level measurements represent the typical weekday dry goods logistics warehouse operation in a single building with a loading dock area on the eastern side of the building façade. In addition, since this reference noise level describes the peak noise source activity, it is also used in the noise prediction model as area source to conservatively describe the entire loading dock area even though during normal operations, the loading dock noise source activity will occur at different locations throughout the loading dock area.

9.2.3 TRUCK MOVEMENTS

The truck movements reference noise level measurement was collected over a period of 1 hour and 28 minutes and represents multiple heavy trucks entering and exiting the outdoor loading dock area producing a reference noise level of 59.8 dBA L_{eq} at 50 feet. The noise sources included at this measurement location account for trucks entering and existing the Project driveways and

maneuvering in and out of the outdoor loading dock activity area. Consistent with the Bloomington Business Park Specific Plan *Traffic Impact Analysis*, the Project is expected to generate a total of approximately 576 trip-ends per day (actual vehicles) and includes 100 truck trip-ends per day. (18) This noise study relies on the actual Project trips (as opposed to the passenger car equivalents) to accurately account for the effect of individual truck trips on the study area roadway network. Using the estimated number of truck trips in combination with time-of-day vehicle splits, the number of entry gate and truck movements were calculated. As shown on Table 9-2, this information is then used to calculate the entry gate and truck movements operational noise source activity based on the number of events by time of day.

TABLE 9-2: ENTRY GATE & TRUCK MOVEMENTS BY LOCATION

Entry Gate & Truck Movement Location[1]	Total Project Truck Trips[2]	Trip Dist.[3]	Truck Trips by Location[4]	Time of Day Vehicle Splits[5]			Truck Movements[6]		
				Day	Evening	Night	Day	Evening	Night
All Driveways	100	100%	100	86.50%	2.70%	10.80%	87	3	11

[1] Driveway locations as shown on Exhibits 9-A through 9-C.
[2] Net New Project truck trips according to Table 10 of the Bloomington Business Park Specific Plan Traffic Impact Analysis.
[3] Project truck trip distribution.
[4] Calculated trip trucks per location represents the product of the total (inbound and outbound) project truck trips by and the trip distribution.
[5] Heavy truck time of day vehicle splits as shown on Table 6-3. Values rounded to the nearest one-hundredth.
[6] Calculated time of day entry gate and truck movements by location.

9.2.4 ROOF-TOP AIR CONDITIONING UNITS

The noise level measurements describe a single mechanical roof-top air conditioning unit. The reference noise level represents a Lennox SCA120 series 10-ton model packaged air conditioning unit. At the uniform reference distance of 50 feet, the reference noise levels are 57.2 dBA L_{eq}. Based on the typical operating conditions observed over a four-day measurement period, the roof-top air conditioning units are estimated to operate for and average 39 minutes per hour during the daytime hours, and 28 minutes per hour during the nighttime hours. These operating conditions reflect peak summer cooling requirements with measured temperatures approaching 96 degrees Fahrenheit (°F) with average daytime temperatures of 82°F. For this noise analysis, the air conditioning units are expected to be located on the roof of the Project buildings.

9.2.5 PARKING LOT VEHICLE MOVEMENTS

To describe the on-site parking lot activity a reference noise level of 56.1 dBA L_{eq} at 50 feet is used. Parking activity are expected to take place during the full hour (60 minutes) throughout the daytime and evening hours. The parking lot noise levels are mainly due cars pulling in and out of parking spaces in combination with sales staff talking to customers.

9.2.6 TRASH ENCLOSURE ACTIVITY

To describe the noise levels associated with a trash enclosure activity, Urban Crossroads collected a reference noise level measurement at an existing trash enclosure containing two dumpster bins. The trash enclosure noise levels describe metal gates opening and closing, metal scraping against concrete floor sounds, dumpster movement on metal wheels, and trash dropping into the metal dumpster. The reference noise levels describe trash enclosure noise activities when trash is dropped into an empty metal dumpster, as would occur at the Project Site. The measured reference noise level at the uniform 50-foot reference distance is 57.3 dBA L_{eq} for the trash enclosure activity. The reference noise level describes the expected noise source activities associated with the trash enclosures for the Project's proposed building. Typical trash enclosure activities are estimated to occur for 10 minutes per hour.

9.3 CADNAA NOISE PREDICTION MODEL

To fully describe the exterior operational noise levels from the Project, Urban Crossroads, Inc. developed a noise prediction model using the CadnaA (Computer Aided Noise Abatement) computer program. CadnaA can analyze multiple types of noise sources using the spatially accurate Project site plan, georeferenced Nearmap aerial imagery, topography, buildings, and barriers in its calculations to predict outdoor noise levels.

Using the ISO 9613 protocol, CadnaA will calculate the distance from each noise source to the noise receiver locations, using the ground absorption, distance, and barrier/building attenuation inputs to provide a summary of noise level at each receiver and the partial noise level contributions by noise source. Consistent with the ISO 9613 protocol, the CadnaA noise prediction model relies on the reference sound power level (L_w) to describe individual noise sources. While sound pressure levels (e.g., L_{eq}) quantify in decibels the intensity of given sound sources at a reference distance, sound power levels (L_w) are connected to the sound source and are independent of distance. Sound pressure levels vary substantially with distance from the source and diminish because of intervening obstacles and barriers, air absorption, wind, and other factors. Sound power is the acoustical energy emitted by the sound source and is an absolute value that is not affected by the environment.

The operational noise level calculations provided in this noise study account for the distance attenuation provided due to geometric spreading, when sound from a localized stationary source (i.e., a point source) propagates uniformly outward in a spherical pattern. A default ground attenuation factor of 0.5 was used in the noise analysis to account for mixed ground representing a combination of hard and soft surfaces. Appendix 9.1 includes the detailed noise model inputs used to estimate the Project operational noise levels presented in this section.

9.4 OYD1 PROJECT OPERATIONAL NOISE LEVELS

Using the reference noise levels to represent the proposed Project operations that include loading dock activity, trailer activity, truck movements, roof-top air conditioning units, parking lot vehicle movements, and trash enclosure activity, Urban Crossroads, Inc. calculated the operational source noise levels that are expected to be generated at the OYD1 Project site and

the Project-related noise level increases that would be experienced at each of the sensitive receiver locations. The operational noise level calculations include the planned 9-foot and 14-foot-high screen wall located at site 2 and site 4 as shown on Exhibit 9-A. Table 9-3 shows the OYD1 Project operational noise levels during the daytime hours of 7:00 a.m. to 10:00 p.m. The daytime hourly noise levels at the off-site receiver locations are expected to range from 52.3 to 55.8 dBA L_{eq} with the planned barriers?

TABLE 9-3: OYD1 DAYTIME PROJECT OPERATIONAL NOISE LEVELS

Noise Source[1]	Operational Noise Levels by Receiver Location (dBA Leq)			
	OYD1-R1	OYD1-R2	OYD1-R3	OYD1-R4
Loading Dock and Trailer Activity	47.4	48.1	52.6	51.5
Truck Movements	45.5	46.4	32.9	35.3
Roof-Top Air Conditioning Units	32.9	33.4	29.0	29.3
Parking Lot Vehicle Movements	48.8	49.7	42.9	53.7
Trash Enclosure Activity	25.0	25.9	19.9	20.7
Total (All Noise Sources)	**52.3**	**53.1**	**53.1**	**55.8**

[1] See Exhibit 9-A for the noise source locations. CadnaA noise model calculations are included in Appendix 9.1.

Table 9-4 shows the OYD1 Project operational noise levels during the nighttime hours of 10:00 p.m. to 7:00 a.m. The nighttime hourly noise levels at the off-site receiver locations are expected to range from 45.3 to 57.9 dBA L_{eq}. The differences between the daytime and nighttime noise levels are largely related to the duration of noise activity (Table 9-1).

TABLE 9-4: OYD1 NIGHTTIME PROJECT OPERATIONAL NOISE LEVELS

Noise Source[1]	Operational Noise Levels by Receiver Location (dBA Leq)			
	OYD1-R1	OYD1-R2	OYD1-R3	OYD1-R4
Loading Dock and Trailer Activity	46.4	47.2	51.7	50.6
Truck Movements	36.5	37.4	23.9	26.4
Roof-Top Air Conditioning Units	30.5	31.0	26.6	26.9
Parking Lot Vehicle Movements	47.8	48.7	41.9	52.8
Trash Enclosure Activity	24.0	25.0	18.9	19.7
Total (All Noise Sources)	**50.4**	**51.3**	**52.2**	**54.9**

[1] See Exhibit 9-A for the noise source locations. CadnaA noise model calculations are included in Appendix 9.1.

9.5 OYD1 PROJECT OPERATIONAL NOISE LEVEL COMPLIANCE

To demonstrate compliance with local noise regulations, the OYD1 Project-only operational noise levels are evaluated against exterior noise level thresholds based on the County of San Bernardino exterior noise level standards at nearby noise-sensitive receiver locations. Table 9-5 shows the OYD1 operational noise levels associated with Bloomington Business Park Specific Plan Project will satisfy the County of San Bernardino exterior noise level standards adjusted to reflect the ambient noise levels at all nearby sensitive receiver locations.

TABLE 9-5: OYD1 OPERATIONAL NOISE LEVEL COMPLIANCE

Receiver Location[1]	Project Operational Noise Levels (dBA Leq)[2]		Measurement Location[3]	Noise Level Standards (dBA Leq)[3]		Noise Level Standards Exceeded?[4]	
	Daytime	Nighttime		Daytime	Nighttime	Daytime	Nighttime
OYD1-R1	52.3	50.4	OYD1-L1	71	67	No	No
OYD1-R2	53.1	51.3	OYD1-L1	71	67	No	No
OYD1-R3	53.1	52.2	OYD1-L2	61	56	No	No
OYD1-R4	55.8	54.9	OYD1-L2	61	56	No	No

[1] See Exhibit 8-A for the receiver locations.
[2] Proposed Project operational noise levels as shown on Tables 9-3 and 9-4.
[3] Exterior noise level standards adjusted to reflect the ambient noise levels (see Table 5-1) per the County of San Bernardino Development Code, Title 8, Section 83.01.080 (Appendix 3.1).
[4] Do the estimated Project operational noise source activities exceed the noise level standards?
"Daytime" = 7:00 a.m. - 10:00 p.m.; "Nighttime" = 10:00 p.m. - 7:00 a.m.

9.6 OYD2 PROJECT OPERATIONAL NOISE LEVELS

Using the reference noise levels to represent the proposed Project operations that include loading dock activity, trailer activity, truck movements, roof-top air conditioning units, parking lot vehicle movements, and trash enclosure activity, Urban Crossroads, Inc. calculated the operational source noise levels that are expected to be generated at the OYD2 Project site and the Project-related noise level increases that would be experienced at each of the sensitive receiver locations. The operational noise level calculations include the planned 9-foot and 14-foot-high screen wall located at site 2 and site 4 as shown on Exhibit 9-B. Table 9-6 shows the OYD2 Project operational noise levels during the daytime hours of 7:00 a.m. to 10:00 p.m. The daytime hourly noise levels at the off-site receiver locations are expected to range from 47.7 to 52.9 dBA L_{eq}.

TABLE 9-6: OYD2 DAYTIME PROJECT OPERATIONAL NOISE LEVELS

Noise Source[1]	Operational Noise Levels by Receiver Location (dBA Leq)									
	OLD2-R1	OLD2-R2	OLD2-R3	OLD2-R4	OLD2-R5	OLD2-R6	OLD2-R7	OLD2-R8	OLD2-R9	OLD2-R10
Loading Dock and Trailer Activity	48.7	31.9	49.5	44.6	47.3	46.2	45.1	35.6	50.8	49.3
Truck Movements	46.0	48.4	48.0	45.9	44.4	49.3	43.2	45.8	44.1	44.3
Roof-Top Air Conditioning Units	32.2	32.5	34.0	33.6	32.6	34.4	31.0	32.3	31.9	30.7
Parking Lot Vehicle Movements	45.4	46.3	45.9	40.1	41.7	44.5	39.2	41.9	40.9	39.8
Trash Enclosure Activity	32.0	19.0	33.7	21.6	26.7	27.0	25.6	17.4	25.4	28.0
Total (All Noise Sources)	**51.8**	**50.6**	**52.9**	**49.1**	**49.9**	**52.0**	**48.0**	**47.7**	**52.0**	**50.9**

[1] See Exhibit 9-B for the noise source locations. CadnaA noise model calculations are included in Appendix 9.2.

Table 9-7 shows the OYD2 Project operational noise levels during the nighttime hours of 10:00 p.m. to 7:00 a.m. The nighttime hourly noise levels at the off-site receiver locations are expected to range from 43.2 to 50.5 dBA L_{eq}. The differences between the daytime and nighttime noise levels are largely related to the duration of noise activity (Table 9-1).

TABLE 9-7: OYD2 NIGHTTIME PROJECT OPERATIONAL NOISE LEVELS

Noise Source[1]	Operational Noise Levels by Receiver Location (dBA Leq)									
	OLD2-R1	OLD2-R2	OLD2-R3	OLD2-R4	OLD2-R5	OLD2-R6	OLD2-R7	OLD2-R8	OLD2-R9	OLD2-R10
Loading Dock and Trailer Activity	47.8	30.9	48.5	43.6	46.3	45.2	44.1	34.6	49.8	48.3
Truck Movements	37.0	39.5	39.0	36.9	35.5	40.3	34.3	36.8	35.1	35.3
Roof-Top Air Conditioning Units	29.8	30.1	31.6	31.2	30.2	32.0	28.6	29.8	29.5	28.3
Parking Lot Vehicle Movements	44.4	45.3	44.9	39.2	40.8	43.5	38.2	40.9	39.9	38.8
Trash Enclosure Activity	31.0	18.0	32.7	20.6	25.8	26.0	24.6	16.4	24.4	27.0
Total (All Noise Sources)	**49.8**	**46.5**	**50.5**	**45.7**	**47.8**	**48.3**	**45.6**	**43.2**	**50.4**	**49.0**

[1] See Exhibit 9-B for the noise source locations. CadnaA noise model calculations are included in Appendix 9.2.

9.7 OYD2 PROJECT OPERATIONAL NOISE LEVEL COMPLIANCE

To demonstrate compliance with local noise regulations, the OYD2 Project-only operational noise levels are evaluated against exterior noise level thresholds based on the County of San Bernardino exterior noise level standards at nearby noise-sensitive receiver locations. Table 9-8 shows the OYD2 operational noise levels associated with Bloomington Business Park Specific Plan Project will satisfy the County of San Bernardino exterior noise level standards adjusted to reflect the ambient noise levels at all nearby sensitive receiver locations.

TABLE 9-8: OYD2 OPERATIONAL NOISE LEVEL COMPLIANCE

Receiver Location[1]	Project Operational Noise Levels (dBA Leq)[2]		Measurement Location[3]	Noise Level Standards (dBA Leq)[3]		Noise Level Standards Exceeded?[4]	
	Daytime	Nighttime		Daytime	Nighttime	Daytime	Nighttime
OYD2-R1	51.8	49.8	OYD2-L1	59	55	No	No
OYD2-R2	50.6	46.5	OYD2-L2	63	60	No	No
OYD2-R3	52.9	50.5	OYD2-L3	71	67	No	No
OYD2-R4	49.1	45.7	OYD2-L4	59	56	No	No
OYD2-R5	49.9	47.8	OYD2-L5	67	65	No	No
OYD2-R6	52.0	48.3	OYD2-L6	57	54	No	No
OYD2-R7	48.0	45.6	OYD2-L7	68	62	No	No
OYD2-R8	47.7	43.2	OYD2-L8	59	55	No	No
OYD2-R9	52.0	50.4	OYD2-L9	58	55	No	No
OYD2-R10	50.9	49.0	OYD2-L10	55	53	No	No

[1] See Exhibit 8-B for the receiver locations.
[2] Proposed Project operational noise levels as shown on Tables 9-6 and 9-7.
[3] Exterior noise level standards adjusted to reflect the ambient noise levels (see Table 5-1) per the County of San Bernardino Development Code, Title 8, Section 83.01.080 (Appendix 3.1).
[4] Do the estimated Project operational noise source activities exceed the noise level standards?
"Daytime" = 7:00 a.m. - 10:00 p.m.; "Nighttime" = 10:00 p.m. - 7:00 a.m.

9.8 SP PROJECT OPERATIONAL NOISE LEVELS

Using the reference noise levels to represent the proposed Project operations that include loading dock activity, trailer activity, truck movements, roof-top air conditioning units, parking lot vehicle movements, and trash enclosure activity, Urban Crossroads, Inc. calculated the operational source noise levels that are expected to be generated at the SP Project site and the Project-related noise level increases that would be experienced at each of the sensitive receiver locations. The operational noise level calculations include the planned 9-foot and 14-foot-high screen wall located at site 2 and site 4 as shown on Exhibit 9-C. Table 9-9 shows the SP Project operational noise levels during the daytime hours of 7:00 a.m. to 10:00 p.m. The daytime hourly noise levels at the off-site receiver locations are expected to range from 47.9 to 55.8 dBA L_{eq}.

TABLE 9-9: SP DAYTIME PROJECT OPERATIONAL NOISE LEVELS

Noise Source[1]	Operational Noise Levels by Receiver Location (dBA Leq)					
	SP-R1	SP-R2	SP-R3	SP-R4	SP-R5	SP-R6
Loading Dock and Trailer Activity	47.5	50.4	49.4	52.1	51.1	55.5
Truck Movements	34.8	36.7	40.5	41.7	42.4	42.0
Roof-Top Air Conditioning Units	25.6	27.0	28.8	32.1	31.3	31.2
Parking Lot Vehicle Movements	31.6	34.8	38.9	39.2	38.3	39.3
Trash Enclosure Activity	17.6	22.3	25.7	22.5	20.8	22.9
Total (All Noise Sources)	**47.9**	**50.7**	**50.3**	**52.7**	**51.9**	**55.8**

[1] See Exhibit 9-C for the noise source locations. CadnaA noise model calculations are included in Appendix 9.3.

Table 9-10 shows the SP Project operational noise levels during the nighttime hours of 10:00 p.m. to 7:00 a.m. The nighttime hourly noise levels at the off-site receiver locations are expected to range from 46.7 to 54.6 dBA L_{eq}. The differences between the daytime and nighttime noise levels are largely related to the duration of noise activity (Table 9-1).

TABLE 9-10: SP NIGHTTIME PROJECT OPERATIONAL NOISE LEVELS

Noise Source[1]	Operational Noise Levels by Receiver Location (dBA Leq)					
	SP-R1	SP-R2	SP-R3	SP-R4	SP-R5	SP-R6
Loading Dock and Trailer Activity	46.5	49.4	48.5	51.1	50.1	54.5
Truck Movements	25.8	27.7	31.5	32.8	33.4	33.0
Roof-Top Air Conditioning Units	23.2	24.6	26.4	29.7	28.9	28.8
Parking Lot Vehicle Movements	30.6	33.8	37.9	38.3	37.3	38.4
Trash Enclosure Activity	16.6	21.3	24.7	21.5	19.8	21.9
Total (All Noise Sources)	**46.7**	**49.6**	**49.0**	**51.4**	**50.4**	**54.6**

[1] See Exhibit 9-C for the noise source locations. CadnaA noise model calculations are included in Appendix 9.3.

9.9 SP PROJECT OPERATIONAL NOISE LEVEL COMPLIANCE

To demonstrate compliance with local noise regulations, the SP Project-only operational noise levels are evaluated against exterior noise level thresholds based on the County of San

Bernardino exterior noise level standards at nearby noise-sensitive receiver locations. Table 9-11 shows the SP operational noise levels associated with Bloomington Business Park Specific Plan Project will satisfy the County of San Bernardino exterior noise level standards adjusted to reflect the ambient noise levels at all nearby sensitive receiver locations.

TABLE 9-11: SP OPERATIONAL NOISE LEVEL COMPLIANCE

Receiver Location[1]	Project Operational Noise Levels (dBA Leq)[2]		Measurement Location[3]	Noise Level Standards (dBA Leq)[3]		Noise Level Standards Exceeded?[4]	
	Daytime	Nighttime		Daytime	Nighttime	Daytime	Nighttime
SP-R1	47.9	46.7	SP-L1	71	78	No	No
SP-R2	50.7	49.6	SP-L2	61	57	No	No
SP-R3	50.3	49.0	SP-L3	70	65	No	No
SP-R4	52.7	51.4	SP-L4	75	73	No	No
SP-R5	51.9	50.4	SP-L5	59	56	No	No
SP-R6	55.8	54.6	SP-L6	58	55	No	No

[1] See Exhibit 8-C for the receiver locations.
[2] Proposed Project operational noise levels as shown on Tables 9-9 and 9-10.
[3] Exterior noise level standards adjusted to reflect the ambient noise levels (see Table 5-1) per the County of San Bernardino Development Code, Title 8, Section 83.01.080 (Appendix 3.1).
[4] Do the estimated Project operational noise source activities exceed the noise level standards?
"Daytime" = 7:00 a.m. - 10:00 p.m.; "Nighttime" = 10:00 p.m. - 7:00 a.m.

9.8 PROJECT OPERATIONAL NOISE LEVEL INCREASES

To describe the Project operational noise level increases, the Project operational noise levels are combined with the existing ambient noise levels measurements for the nearby receiver locations potentially impacted by Project operational noise sources. Since the units used to measure noise, decibels (dB), are logarithmic units, the Project-operational and existing ambient noise levels cannot be combined using standard arithmetic equations. (2) Instead, they must be logarithmically added using the following base equation:

$$SPL_{Total} = 10\log_{10}[10^{SPL1/10} + 10^{SPL2/10} + \ldots 10^{SPLn/10}]$$

Where "SPL1," "SPL2," etc. are equal to the sound pressure levels being combined, or in this case, the Project-operational and existing ambient noise levels. The difference between the combined Project and ambient noise levels describes the Project noise level increases to the existing ambient noise environment. As indicated on Tables 9-12 through 9-17, the Project will not generate a daytime and nighttime operational noise level increase at the nearby receiver locations. Project-related operational noise level increases will satisfy the operational noise level increase significance criteria presented on Table 4-1. Therefore, the incremental Project operational noise level increase is considered *less than significant* at all receiver locations.

TABLE 9-12: OYD1 DAYTIME PROJECT OPERATIONAL NOISE LEVEL INCREASES

Receiver Location[1]	Total Project Operational Noise Level[2]	Measurement Location[3]	Reference Ambient Noise Levels[4]	Combined Project and Ambient[5]	Project Increase[6]	Increase Criteria[7]	Increase Criteria Exceeded?
OYD1-R1	52.3	OYD1-L1	70.6	70.7	0.1	1.5	No
OYD1-R2	53.1	OYD1-L1	70.6	70.7	0.1	1.5	No
OYD1-R3	53.1	OYD1-L2	60.9	61.6	0.7	3.0	No
OYD1-R4	55.8	OYD1-L2	60.9	62.1	1.2	3.0	No

[1] See Exhibit 8-A for the receiver locations.
[2] Total Project daytime operational noise levels as shown on Table 9-5.
[3] Reference noise level measurement locations as shown on Exhibit 5-A.
[4] Observed daytime ambient noise levels as shown on Table 5-1.
[5] Represents the combined ambient conditions plus the Project activities.
[6] The noise level increase expected with the addition of the proposed Project activities.
[7] Significance increase criteria as shown on Table 4-1.

TABLE 9-13: OYD1 NIGHTTIME OPERATIONAL NOISE LEVEL INCREASES

Receiver Location[1]	Total Project Operational Noise Level[2]	Measurement Location[3]	Reference Ambient Noise Levels[4]	Combined Project and Ambient[5]	Project Increase[6]	Increase Criteria[7]	Increase Criteria Exceeded?
OYD1-R1	50.4	OYD1-L1	67.2	67.3	0.1	1.5	No
OYD1-R2	51.3	OYD1-L1	67.2	67.3	0.1	1.5	No
OYD1-R3	52.2	OYD1-L2	56.3	57.7	1.4	5.0	No
OYD1-R4	54.9	OYD1-L2	56.3	58.7	2.4	5.0	No

[1] See Exhibit 8-A for the receiver locations.
[2] Total Project nighttime operational noise levels as shown on Table 9-5.
[3] Reference noise level measurement locations as shown on Exhibit 5-A.
[4] Observed nighttime ambient noise levels as shown on Table 5-1.
[5] Represents the combined ambient conditions plus the Project activities.
[6] The noise level increase expected with the addition of the proposed Project activities.
[7] Significance increase criteria as shown on Table 4-1.

TABLE 9-14: OYD2 DAYTIME PROJECT OPERATIONAL NOISE LEVEL INCREASES

Receiver Location[1]	Total Project Operational Noise Level[2]	Measurement Location[3]	Reference Ambient Noise Levels[4]	Combined Project and Ambient[5]	Project Increase[6]	Increase Criteria[7]	Increase Criteria Exceeded?
OYD2-R1	51.8	OYD2-L1	58.6	59.4	0.8	5.0	No
OYD2-R2	50.6	OYD2-L2	62.5	62.8	0.3	3.0	No
OYD2-R3	52.9	OYD2-L3	70.6	70.7	0.1	1.5	No
OYD2-R4	49.1	OYD2-L4	58.9	59.3	0.4	5.0	No
OYD2-R5	49.9	OYD2-L5	67.2	67.3	0.1	1.5	No
OYD2-R6	52.0	OYD2-L6	56.5	57.8	1.3	5.0	No
OYD2-R7	48.0	OYD2-L7	67.9	67.9	0.0	1.5	No
OYD2-R8	47.7	OYD2-L8	59.2	59.5	0.3	5.0	No
OYD2-R9	52.0	OYD2-L9	57.5	58.6	1.1	5.0	No
OYD2-R10	50.9	OYD2-L10	55.3	56.6	1.3	5.0	No

[1] See Exhibit 8-B for the receiver locations.
[2] Total Project daytime operational noise levels as shown on Table 9-8.
[3] Reference noise level measurement locations as shown on Exhibit 5-B.
[4] Observed daytime ambient noise levels as shown on Table 5-1.
[5] Represents the combined ambient conditions plus the Project activities.
[6] The noise level increase expected with the addition of the proposed Project activities.
[7] Significance increase criteria as shown on Table 4-1.

TABLE 9-15: OYD2 NIGHTTIME OPERATIONAL NOISE LEVEL INCREASES

Receiver Location[1]	Total Project Operational Noise Level[2]	Measurement Location[3]	Reference Ambient Noise Levels[4]	Combined Project and Ambient[5]	Project Increase[6]	Increase Criteria[7]	Increase Criteria Exceeded?
OYD2-R1	49.8	OYD2-L1	55.2	56.3	1.1	5.0	No
OYD2-R2	46.5	OYD2-L2	60.2	60.4	0.2	3.0	No
OYD2-R3	50.5	OYD2-L3	67.2	67.3	0.1	1.5	No
OYD2-R4	45.7	OYD2-L4	56.4	56.8	0.4	5.0	No
OYD2-R5	47.8	OYD2-L5	65.0	65.1	0.1	1.5	No
OYD2-R6	48.3	OYD2-L6	54.4	55.4	1.0	5.0	No
OYD2-R7	45.6	OYD2-L7	62.1	62.2	0.1	3.0	No
OYD2-R8	43.2	OYD2-L8	54.5	54.8	0.3	5.0	No
OYD2-R9	50.4	OYD2-L9	54.7	56.1	1.4	5.0	No
OYD2-R10	49.0	OYD2-L10	52.5	54.1	1.6	5.0	No

[1] See Exhibit 8-B for the receiver locations.
[2] Total Project nighttime operational noise levels as shown on Table 9-8.
[3] Reference noise level measurement locations as shown on Exhibit 5-B.
[4] Observed nighttime ambient noise levels as shown on Table 5-1.
[5] Represents the combined ambient conditions plus the Project activities.
[6] The noise level increase expected with the addition of the proposed Project activities.
[7] Significance increase criteria as shown on Table 4-1.

TABLE 9-16: SP DAYTIME PROJECT OPERATIONAL NOISE LEVEL INCREASES

Receiver Location[1]	Total Project Operational Noise Level[2]	Measurement Location[3]	Reference Ambient Noise Levels[4]	Combined Project and Ambient[5]	Project Increase[6]	Increase Criteria[7]	Increase Criteria Exceeded?
SP-R1	47.9	SP-L1	71.1	71.1	0.0	1.5	No
SP-R2	50.7	SP-L2	60.8	61.2	0.4	3.0	No
SP-R3	50.3	SP-L3	70.1	70.1	0.0	1.5	No
SP-R4	52.7	SP-L4	75.0	75.0	0.0	1.5	No
SP-R5	51.9	SP-L5	58.9	59.7	0.8	5.0	No
SP-R6	55.8	SP-L6	57.5	59.7	2.2	5.0	No

[1] See Exhibit 8-C for the receiver locations.
[2] Total Project daytime mitigated operational noise levels as shown on Table 9-11.
[3] Reference noise level measurement locations as shown on Exhibit 5-C.
[4] Observed daytime ambient noise levels as shown on Table 5-1.
[5] Represents the combined ambient conditions plus the Project activities.
[6] The noise level increase expected with the addition of the proposed Project activities.
[7] Significance increase criteria as shown on Table 4-1.

TABLE 9-17: SP NIGHTTIME OPERATIONAL NOISE LEVEL INCREASES

Receiver Location[1]	Total Project Operational Noise Level[2]	Measurement Location[3]	Reference Ambient Noise Levels[4]	Combined Project and Ambient[5]	Project Increase[6]	Increase Criteria[7]	Increase Criteria Exceeded?
SP-R1	46.7	SP-L1	77.6	77.6	0.0	1.5	No
SP-R2	49.6	SP-L2	57.0	57.7	0.7	5.0	No
SP-R3	49.0	SP-L3	64.5	64.6	0.1	3.0	No
SP-R4	51.4	SP-L4	73.1	73.1	0.0	1.5	No
SP-R5	50.4	SP-L5	56.4	57.4	1.0	5.0	No
SP-R6	54.6	SP-L6	54.7	57.7	3.0	5.0	No

[1] See Exhibit 8-C for the receiver locations.
[2] Total Project mitigated nighttime operational noise levels as shown on Table 9-11.
[3] Reference noise level measurement locations as shown on Exhibit 5-C.
[4] Observed nighttime ambient noise levels as shown on Table 5-1.
[5] Represents the combined ambient conditions plus the Project activities.
[6] The noise level increase expected with the addition of the proposed Project activities.
[7] Significance increase criteria as shown on Table 4-1.

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10 CONSTRUCTION IMPACTS

This section analyzes potential impacts resulting from the short-term construction activities associated with the development of the Project. Exhibit 10-A shows the construction noise source locations in relation to the nearest sensitive receiver locations previously described in Section 8. To prevent high levels of construction noise from impacting noise-sensitive land uses, County of San Bernardino Development Code Section 83.01.080(g)(3), states that construction activities are limited to the hours of 7:00 a.m. to 7:00 p.m. on any day and limited at any time on Sundays and federal holidays.

10.1 CONSTRUCTION NOISE LEVELS

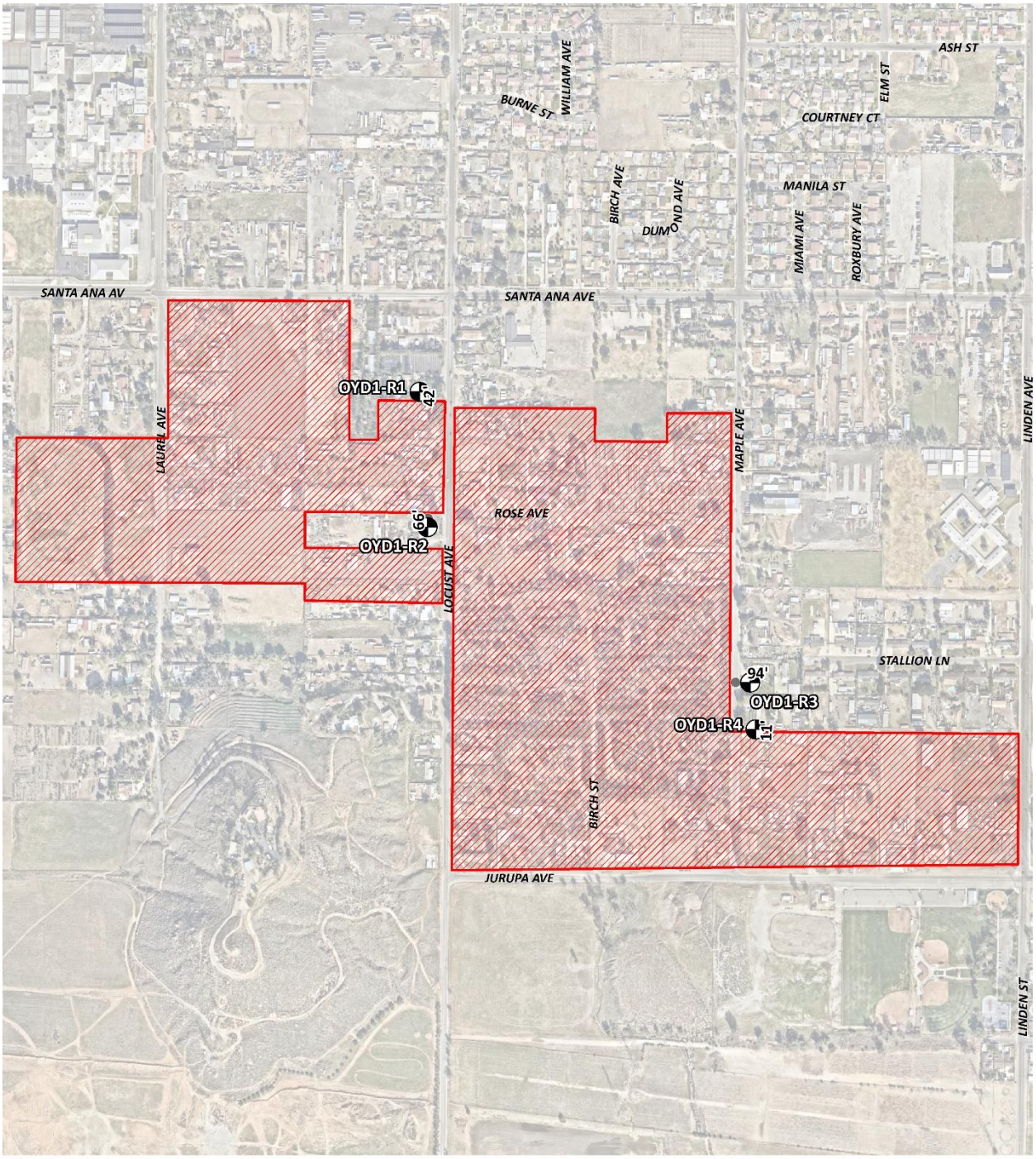
Noise generated by the Project construction equipment will include a combination of trucks, power tools, concrete mixers, and portable generators that when combined can reach high levels. The number and mix of construction equipment are expected to occur in the following stages:

- Demolition
- Site Preparation
- Grading
- Building Construction
- Paving
- Architectural Coating

10.2 TYPICAL CONSTRUCTION REFERENCE NOISE LEVELS

To describe peak construction noise activities, this construction noise analysis was prepared using reference noise level measurements published in the *Update of Noise Database for Prediction of Noise on Construction and Open Sites* by the Department for Environment, Food and Rural Affairs (DEFRA). (19). The DEFRA database provides the most recent and comprehensive source of reference construction noise levels. Table 10-1 provides a summary of the DEFRA construction reference noise level measurements expressed in hourly average dBA L_{eq} using the estimated FHWA Roadway Construction Noise Model (RCNM) usage factors (20) to describe the typical construction activities for each stage of Project construction.

EXHIBIT 10-A: OYD1 CONSTRUCTION NOISE SOURCE LOCATIONS

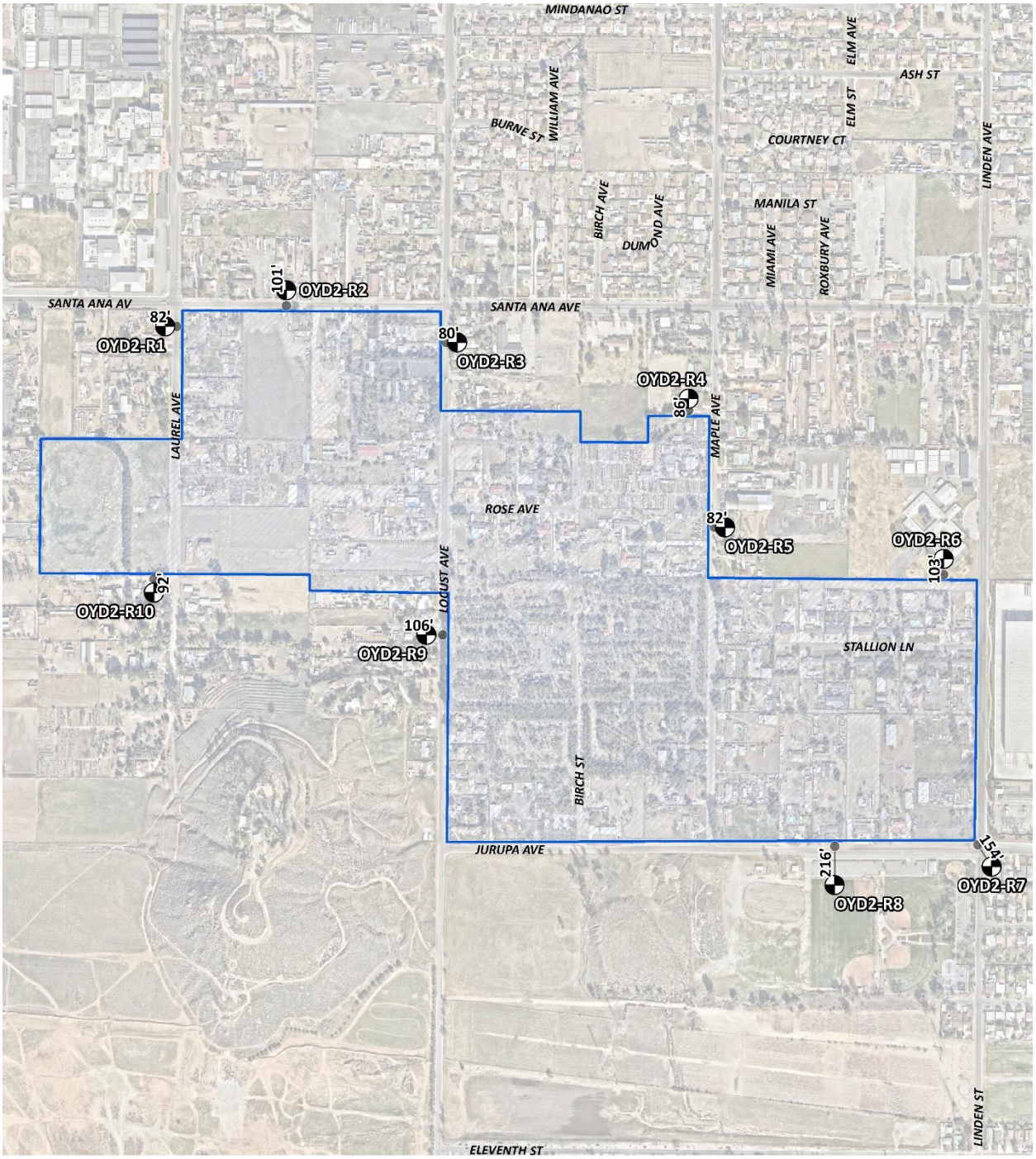


LEGEND:

N

OYD1 Construction Activity | Receiver Locations | Distance from receiver to construction activity (in feet)

EXHIBIT 10-B: OYD2 CONSTRUCTION NOISE SOURCE LOCATIONS

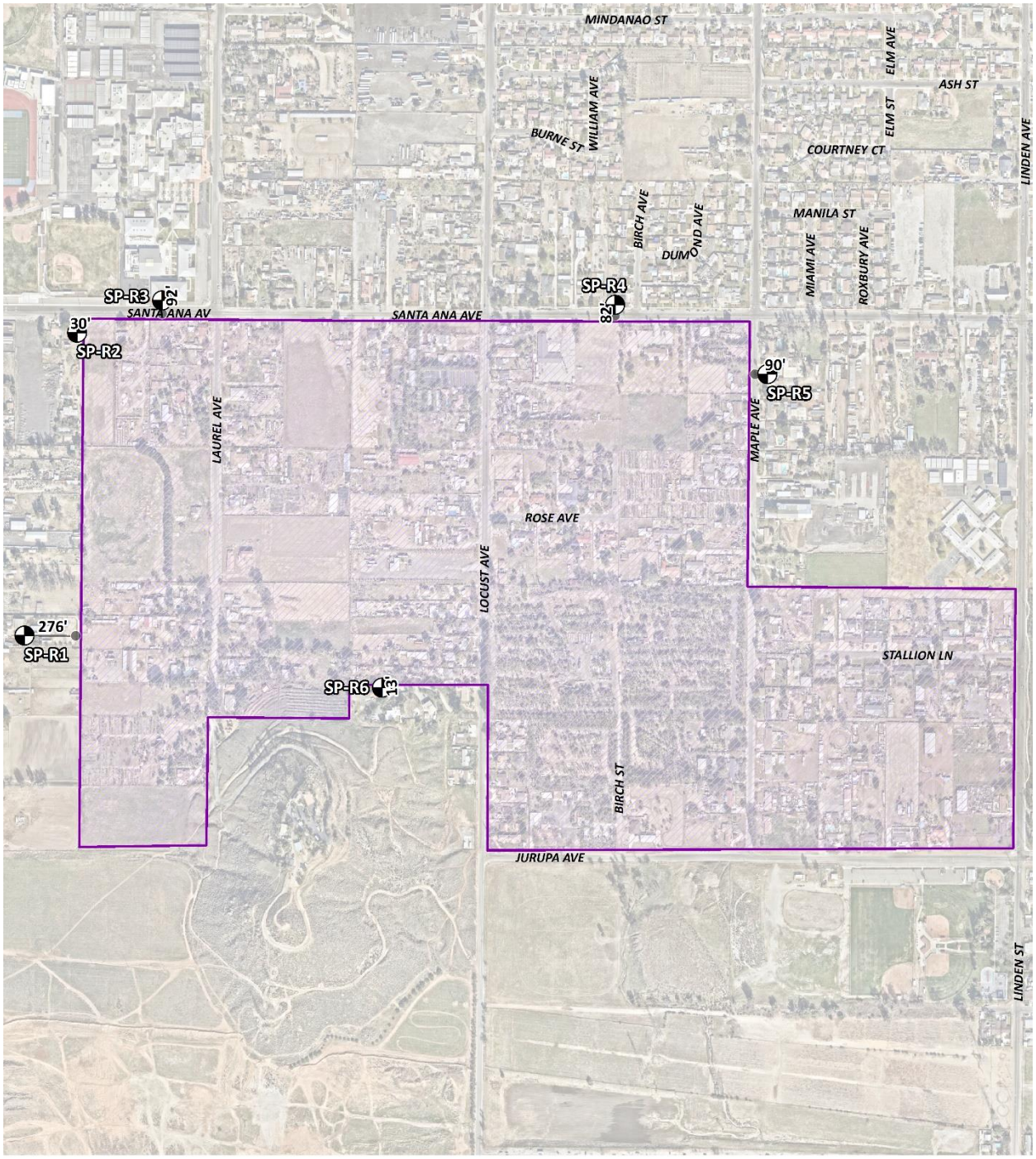


LEGEND:

N

OYD2 Construction Activity | Receiver Locations | Distance from receiver to construction activity (in feet)

EXHIBIT 10-C: SP CONSTRUCTION NOISE SOURCE LOCATIONS



LEGEND:

SP Construction Activity | Receiver Locations | Distance from receiver to construction activity (in feet)

TABLE 10-1: TYPICAL CONSTRUCTION REFERENCE NOISE LEVELS

Construction Stage	Reference Construction Activity[1]	Reference Noise Level @ 50 Feet (dBA L_{eq})	Highest Reference Noise Level (dBA L_{eq})
Demolition	Demolition Equipment	69	71
	Backhoes	61	
	Hauling Trucks	71	
Site Preparation	Crawler Tractors	77	77
	Hauling Trucks	71	
	Rubber Tired Dozers	71	
Grading	Graders	79	79
	Excavators	64	
	Compactors	67	
Building Construction	Cranes	67	72
	Tractors	72	
	Welders	65	
Paving	Pavers	70	70
	Paving Equipment	69	
	Rollers	69	
Architectural Coating	Cranes	67	67
	Air Compressors	67	
	Generator Sets	67	

[1] Update of Noise Database for Prediction of Noise on Construction and Open Sites by the Department for Environment, Food and Rural Affairs (DEFRA) expressed in hourly average Leq based on estimated usage factors from the FHWA Roadway Construction Noise Model (RCNM).

10.3 OYD1 CONSTRUCTION NOISE ANALYSIS

Using the reference construction equipment noise levels and the CadnaA noise prediction model, calculations of the Project construction noise level impacts at the nearest sensitive receiver locations were completed. To assess the worst-case construction noise levels, the Project construction noise analysis relies on the highest noise level impacts when the equipment with the highest reference noise level is operating at the closest point from the edge of primary construction activity (Project site boundary) to each receiver location.

As shown on Table 10-2, the OYD1 construction noise levels are expected to range from 64.2 to 79.5 dBA L_{eq}, and the highest construction levels are expected to range from 76.2 to 79.5 dBA L_{eq} at the nearest receiver locations. Appendix 10.1 includes the detailed CadnaA construction noise model inputs.

TABLE 10-2: OYD1 CONSTRUCTION EQUIPMENT NOISE LEVEL SUMMARY

Receiver Location[1]	Construction Noise Levels (dBA L_{eq})						
	Demolition	Site Preparation	Grading	Building Construction	Paving	Architectural Coating	Highest Levels[2]
OYD1-R1	68.8	74.8	76.8	69.8	67.8	64.8	76.8
OYD1-R2	69.9	75.9	77.9	70.9	68.9	65.9	77.9
OYD1-R3	68.2	74.2	76.2	69.2	67.2	64.2	76.2
OYD1-R4	71.5	77.5	79.5	72.5	70.5	67.5	79.5

[1] Construction noise source and receiver locations are shown on Exhibit 10-A.
[2] Construction noise level calculations based on distance from the project site boundaries (construction activity area) to nearby receiver locations. CadnaA construction noise model inputs are included in Appendix 10.1.

10.4 OYD1 CONSTRUCTION NOISE LEVEL COMPLIANCE

To evaluate whether the Project will generate potentially significant short-term noise levels at nearest receiver locations, a construction-related daytime noise level threshold of 80 dBA L_{eq} is used as a reasonable threshold to assess the daytime construction noise level impacts.

The OYD1 construction noise analysis shows that the nearest receiver locations will satisfy the reasonable daytime 80 dBA L_{eq} significance threshold during Project construction activities as shown on Table 10-3. Therefore, the noise impacts due to OYD1 Project construction noise is considered *less than significant* at all receiver locations.

TABLE 10-3: OYD1 CONSTRUCTION NOISE LEVEL COMPLIANCE

Receiver Location[1]	Construction Noise Levels (dBA L_{eq})		
	Highest Construction Noise Levels[2]	Threshold[3]	Threshold Exceeded?[4]
OYD1-R1	76.8	80	No
OYD1-R2	77.9	80	No
OYD1-R3	76.2	80	No
OYD1-R4	79.5	80	No

[1] Noise receiver locations are shown on Exhibit 10-A.
[2] Highest construction noise level operating at the Project site boundary to nearby receiver locations (Table 10-2).
[3] Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual.
[4] Do the estimated Project construction noise levels exceed the construction noise level threshold?

10.5 OYD2 CONSTRUCTION NOISE ANALYSIS

As shown on Table 10-4, the OYD2 construction noise levels are expected to range from 59.6 to 76.6 dBA L_{eq}, and the highest construction levels are expected to range from 71.6 to 76.6 dBA L_{eq} at the nearest receiver locations. Appendix 10.2 includes the detailed CadnaA construction noise model inputs.

TABLE 10-4: OYD2 CONSTRUCTION EQUIPMENT NOISE LEVEL SUMMARY

Receiver Location[1]	Construction Noise Levels (dBA L_{eq})						
	Demolition	Site Preparation	Grading	Building Construction	Paving	Architectural Coating	Highest Levels[2]
OYD2-R1	66.4	72.4	74.4	67.4	65.4	62.4	74.4
OYD2-R2	66.9	72.9	74.9	67.9	65.9	62.9	74.9
OYD2-R3	67.6	73.6	75.6	68.6	66.6	63.6	75.6
OYD2-R4	66.5	72.5	74.5	67.5	65.5	62.5	74.5
OYD2-R5	68.6	74.6	76.6	69.6	67.6	64.6	76.6
OYD2-R6	66.3	72.3	74.3	67.3	65.3	62.3	74.3
OYD2-R7	63.6	69.6	71.6	64.6	62.6	59.6	71.6
OYD2-R8	65.3	71.3	73.3	66.3	64.3	61.3	73.3
OYD2-R9	68.5	74.5	76.5	69.5	67.5	64.5	76.5
OYD2-R10	67.1	73.1	75.1	68.1	66.1	63.1	75.1

[1] Construction noise source and receiver locations are shown on Exhibit 10-B.
[2] Construction noise level calculations based on distance from the project site boundaries (construction activity area) to nearby receiver locations. CadnaA construction noise model inputs are included in Appendix 10.2.

10.6 OYD2 CONSTRUCTION NOISE LEVEL COMPLIANCE

The OYD2 construction noise analysis shows that the nearest receiver locations will satisfy the reasonable daytime 80 dBA L_{eq} significance threshold during Project construction activities as shown on Table 10-5. Therefore, the noise impacts due to OYD2 Project construction noise is considered *less than significant* at all receiver locations.

TABLE 10-5: OYD2 CONSTRUCTION NOISE LEVEL COMPLIANCE

Receiver Location[1]	Construction Noise Levels (dBA L_{eq})		
	Highest Construction Noise Levels[2]	Threshold[3]	Threshold Exceeded?[4]
OYD2-R1	74.4	80	No
OYD2-R2	74.9	80	No
OYD2-R3	75.6	80	No
OYD2-R4	74.5	80	No
OYD2-R5	76.6	80	No
OYD2-R6	74.3	80	No
OYD2-R7	71.6	80	No
OYD2-R8	73.3	80	No
OYD2-R9	76.5	80	No
OYD2-R10	75.1	80	No

[1] Noise receiver locations are shown on Exhibit 10-B.
[2] Highest construction noise level operating at the Project site boundary to nearby receiver locations (Table 10-4).
[3] Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual.
[4] Do the estimated Project construction noise levels exceed the construction noise level threshold?

10.7 SP CONSTRUCTION NOISE ANALYSIS

As shown on Table 10-6, the SP construction noise levels are expected to range from 61.0 to 79.6 dBA L_{eq}, and the highest construction levels are expected to range from 73.0 to 79.6 dBA L_{eq} at the nearest receiver locations. Appendix 10.3 includes the detailed CadnaA construction noise model inputs.

TABLE 10-6: SP CONSTRUCTION EQUIPMENT NOISE LEVEL SUMMARY

Receiver Location[1]	Construction Noise Levels (dBA L_{eq})						
	Demolition	Site Preparation	Grading	Building Construction	Paving	Architectural Coating	Highest Levels[2]
SP-R1	65.0	71.0	73.0	66.0	64.0	61.0	73.0
SP-R2	68.5	74.5	76.5	69.5	67.5	64.5	76.5
SP-R3	67.3	73.3	75.3	68.3	66.3	63.3	75.3
SP-R4	68.0	74.0	76.0	69.0	67.0	64.0	76.0
SP-R5	67.3	73.3	75.3	68.3	66.3	63.3	75.3
SP-R6	71.6	77.6	79.6	72.6	70.6	67.6	79.6

[1] Construction noise source and receiver locations are shown on Exhibit 10-C.
[2] Construction noise level calculations based on distance from the project site boundaries (construction activity area) to nearby receiver locations. CadnaA construction noise model inputs are included in Appendix 10.3.

10.8 SP CONSTRUCTION NOISE LEVEL COMPLIANCE

The SP construction noise analysis shows that the nearest receiver locations will satisfy the reasonable daytime 80 dBA L_{eq} significance threshold during Project construction activities as shown on Table 10-7. Therefore, the noise impacts due to SP Project construction noise is considered *less than significant* at all receiver locations.

TABLE 10-7: SP CONSTRUCTION NOISE LEVEL COMPLIANCE

Receiver Location[1]	Construction Noise Levels (dBA L_{eq})		
	Highest Construction Noise Levels[2]	Threshold[3]	Threshold Exceeded?[4]
SP-R1	73.0	80	No
SP-R2	76.5	80	No
SP-R3	75.3	80	No
SP-R4	76.0	80	No
SP-R5	75.3	80	No
SP-R6	79.6	80	No

[1] Noise receiver locations are shown on Exhibit 10-C.
[2] Highest construction noise level operating at the Project site boundary to nearby receiver locations (Table 10-6).
[3] Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual.
[4] Do the estimated Project construction noise levels exceed the construction noise level threshold?

10.9 TYPICAL CONSTRUCTION VIBRATION IMPACTS

Construction activity can result in varying degrees of ground vibration, depending on the equipment and methods used, distance to the affected structures and soil type. It is expected that ground-borne vibration from Project construction activities would cause only intermittent, localized intrusion. Ground-borne vibration levels resulting from typical construction activities occurring within the Project site were estimated by data published by the Federal Transit Administration (FTA) (7). However, while vehicular traffic is rarely perceptible, construction has the potential to result in varying degrees of temporary ground vibration, depending on the specific construction activities and equipment used.

Ground vibration levels associated with various types of construction equipment are summarized on Table 10-8. Based on the representative vibration levels presented for various construction equipment types, it is possible to estimate the potential Project construction vibration levels using the following vibration assessment methods defined by the FTA. The FTA provides the following equation: $PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$

TABLE 10-8: VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

Equipment	PPV (in/sec) at 25 feet
Small bulldozer	0.003
Jackhammer	0.035
Loaded Trucks	0.076
Large bulldozer	0.089

Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual

Tables 10-9 through 10-11 present the expected Project related vibration levels at the nearby receiver locations. At distances ranging from 11 feet to 276 feet from Project construction activities (at the Project site boundaries), construction vibration levels are estimated to range from 0.002 to 0.305 in/sec PPV and will exceed the County of San Bernardino 0.2 in/sec PPV threshold for vibration at OYD1-R4 and SOYD1-R6. The Project-related vibration impacts will be *potentially significant* during the construction activities at the Project site and mitigation is required.

TABLE 10-9: UNMITIGATED OYD1 PROJECT CONSTRUCTION VIBRATION LEVELS

Receiver[1]	Distance to Const. Activity (Feet)	Receiver PPV Levels (in/sec)[2]					Threshold PPV (in/sec)[3]	Threshold Exceeded?[4]
		Small Bulldozer	Jack-hammer	Loaded Trucks	Large Bulldozer	Peak Vibration		
OYD1-R1	42'	0.001	0.016	0.035	0.041	0.041	0.2	No
OYD1-R2	66'	0.001	0.008	0.018	0.021	0.021	0.2	No
OYD1-R3	94'	0.000	0.005	0.010	0.012	0.012	0.2	No
OYD1-R4	11'	0.010	0.120	0.260	0.305	0.305	0.2	Yes

[1] Receiver locations are shown on Exhibit 10-A.
[2] Based on the Vibration Source Levels of Construction Equipment included on Table 10-8.
[3] County of San Bernardino Development Code, Section 83.01.090(a) (Appendix 3.1)
[4] Does the vibration level exceed the maximum acceptable vibration threshold?

TABLE 10-10: UNMITIGATED OYD2 PROJECT CONSTRUCTION VIBRATION LEVELS

Receiver[1]	Distance to Const. Activity (Feet)	Receiver PPV Levels (in/sec)[2]					Threshold PPV (in/sec)[3]	Threshold Exceeded?[4]
		Small Bulldozer	Jack-hammer	Loaded Trucks	Large Bulldozer	Peak Vibration		
OYD2-R1	82'	0.001	0.006	0.013	0.015	0.015	0.2	No
OYD2-R2	101'	0.000	0.004	0.009	0.011	0.011	0.2	No
OYD2-R3	80'	0.001	0.006	0.013	0.016	0.016	0.2	No
OYD2-R4	86'	0.000	0.005	0.012	0.014	0.014	0.2	No
OYD2-R5	82'	0.001	0.006	0.013	0.015	0.015	0.2	No
OYD2-R6	103'	0.000	0.004	0.009	0.011	0.011	0.2	No
OYD2-R7	154'	0.000	0.002	0.005	0.006	0.006	0.2	No
OYD2-R8	216'	0.000	0.001	0.003	0.004	0.004	0.2	No
OYD2-R9	106'	0.000	0.004	0.009	0.010	0.010	0.2	No
OYD2-R10	92'	0.000	0.005	0.011	0.013	0.013	0.2	No

[1] Receiver locations are shown on Exhibit 10-B.
[2] Based on the Vibration Source Levels of Construction Equipment included on Table 10-8.
[3] County of San Bernardino Development Code, Section 83.01.090(a) (Appendix 3.1)
[4] Does the vibration level exceed the maximum acceptable vibration threshold?

TABLE 10-11: UNMITIGATED SP PROJECT CONSTRUCTION VIBRATION LEVELS

Receiver[1]	Distance to Const. Activity (Feet)	Receiver PPV Levels (in/sec)[2]					Threshold PPV (in/sec)[3]	Threshold Exceeded?[4]
		Small Bulldozer	Jack-hammer	Loaded Trucks	Large Bulldozer	Peak Vibration		
SP-R1	276'	0.000	0.001	0.002	0.002	0.002	0.2	No
SP-R2	30'	0.002	0.027	0.058	0.068	0.068	0.2	No
SP-R3	92'	0.000	0.005	0.011	0.013	0.013	0.2	No
SP-R4	82'	0.001	0.006	0.013	0.015	0.015	0.2	No
SP-R5	90'	0.000	0.005	0.011	0.013	0.013	0.2	No
SP-R6	13'	0.008	0.093	0.203	0.237	0.237	0.2	Yes

[1] Receiver locations are shown on Exhibit 10-C.
[2] Based on the Vibration Source Levels of Construction Equipment included on Table 10-8.
[3] County of San Bernardino Development Code, Section 83.01.090(a) (Appendix 3.1)
[4] Does the vibration level exceed the maximum acceptable vibration threshold?

Therefore, a 20-foot buffer zone mitigation measure is required which would restrict the use of large, loaded trucks, heavy mobile equipment greater than 80,000 pounds, and the use of jack hammers within 20-feet of occupied sensitive receiver locations represented by P-R4 and SP-R6. With the mitigation measures outlined below, Project construction vibration levels would be reduced to 0.124 in/sec PPV, will satisfy the 0.2 in/sec PPV threshold for vibration, and represent *less than significant* impacts with mitigation. Therefore, loaded trucks and all heavy mobile equipment greater than 80,000 pounds, and jack hammers are prohibited from use during Project construction activities within 20 feet of noise sensitive uses. Instead, small rubber-tired or alternative equipment, as well as soil compaction equipment shall be used during Project construction to reduce vibration effects on nearby structures and their occupants.

With the construction vibration measures identified in this report, the mitigated vibration levels will satisfy the County of San Bernardino perceptible vibration threshold of 0.2 in/sec PPV at all receiver locations and represent *less than significant* impacts with mitigation as shown on Tables 10-12 and 10-13.

TABLE 10-12: OYD1 MITIGATED CONSTRUCTION EQUIPMENT VIBRATION LEVELS

Receiver[1]	Distance to Const. Activity (Feet)	Receiver PPV Levels (in/sec)[2]					Threshold PPV (in/sec)[3]	Threshold Exceeded?[4]
		Small Bulldozer	Jack-hammer	Loaded Trucks	Large Bulldozer	Peak Vibration		
OYD1-R4	20'	0.004	0.049	0.106	0.124	0.124	0.2	No

[1] Receiver locations are shown on Exhibit 10-A.
[2] Based on the Vibration Source Levels of Construction Equipment included on Table 10-8.
[3] County of San Bernardino Development Code, Section 83.01.090(a) (Appendix 3.1)
[4] Does the vibration level exceed the maximum acceptable vibration threshold?

TABLE 10-13: SP MITIGATED CONSTRUCTION EQUIPMENT VIBRATION LEVELS

Receiver[1]	Distance to Const. Activity (Feet)	Receiver PPV Levels (in/sec)[2]					Threshold PPV (in/sec)[3]	Threshold Exceeded?[4]
		Small Bulldozer	Jack-hammer	Loaded Trucks	Large Bulldozer	Peak Vibration		
SP-R6	20'	0.004	0.049	0.106	0.124	0.124	0.2	No

[1] Receiver locations are shown on Exhibit 10-C.
[2] Based on the Vibration Source Levels of Construction Equipment included on Table 10-8.
[3] County of San Bernardino Development Code, Section 83.01.090(a) (Appendix 3.1)
[4] Does the vibration level exceed the maximum acceptable vibration threshold?

Moreover, the impacts at the site of the closest sensitive receivers are unlikely to be sustained during the entire construction period but will occur rather only during the times that heavy construction equipment is operating adjacent to the Project site perimeter.

11 REFERENCES

1. **State of California.** *California Environmental Quality Act, Appendix G.* 2018.
2. **California Department of Transportation Environmental Program.** *Technical Noise Supplement - A Technical Supplement to the Traffic Noise Analysis Protocol.* Sacramento, CA : s.n., September 2013.
3. **Environmental Protection Agency Office of Noise Abatement and Control.** *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety.* March 1974. EPA/ONAC 550/9/74-004.
4. **U.S. Department of Transportation, Federal Highway Administration, Office of Environment and Planning, Noise and Air Quality Branch.** *Highway Traffic Noise Analysis and Abatement Policy and Guidance.* December 2011.
5. **U.S. Department of Transportation, Federal Highway Administration.** *Highway Traffic Noise in the United States, Problem and Response.* April 2000. p. 3.
6. **U.S. Environmental Protection Agency Office of Noise Abatement and Control.** *Noise Effects Handbook-A Desk Reference to Health and Welfare Effects of Noise.* October 1979 (revised July 1981). EPA 550/9/82/106.
7. **U.S. Department of Transportation, Federal Transit Administration.** *Transit Noise and Vibration Impact Assessment Manual.* September 2018.
8. **Office of Planning and Research.** *State of California General Plan Guidelines.* October 2017.
9. **County of San Bernardino.** *Countywide Plan.* October 2020.
10. —. *Code of Ordinances, Title 8 Development Code, Chapter 83.01 General Performance Standards.*
11. **California Court of Appeal.** *Gray v. County of Madera, F053661.* 167 Cal.App.4th 1099; - Cal.Rptr.3d, October 2008.
12. **Federal Interagency Committee on Noise.** *Federal Agency Review of Selected Airport Noise Analysis Issues.* August 1992.
13. **California Department of Transportation.** *Technical Noise Supplement.* November 2009.
14. **American National Standards Institute (ANSI).** *Specification for Sound Level Meters ANSI S1.4-2014/IEC 61672-1:2013.*
15. **U.S. Department of Transportation, Federal Highway Administration.** *FHWA Highway Traffic Noise Prediction Model.* December 1978. FHWA-RD-77-108.
16. **California Department of Transportation Environmental Program, Office of Environmental Engineering.** *Use of California Vehicle Noise Reference Energy Mean Emission Levels (Calveno REMELs) in FHWA Highway Traffic Noise Prediction.* September 1995. TAN 95-03.
17. **California Department of Transportation.** *Traffic Noise Attenuation as a Function of Ground and Vegetation Final Report.* June 1995. FHWA/CA/TL-95/23.
18. **Environmental Planning Development Solutions, Inc.** *Bloomington Business Park Specific Plan Traffic Impact Analysis.* July 2021.
19. **Department of Environment, Food and Rural Affiars (Defra).** *Update of Noise Database for Prediction of Noise on Construction and Open Sites.* 2004.
20. **FHWA.** *Roadway Construction Noise Model.* January 2006.

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12 CERTIFICATION

The contents of this noise study report represent an accurate depiction of the noise environment and impacts associated with the proposed Bloomington Business Park Specific Plan Project. The information contained in this noise study report is based on the best available data at the time of preparation. If you have any questions, please contact me directly at (949) 584-3148.

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EDUCATION

Master of Science in Civil and Environmental Engineering
California Polytechnic State University, San Luis Obispo • December, 1993

Bachelor of Science in City and Regional Planning
California Polytechnic State University, San Luis Obispo • June, 1992

PROFESSIONAL REGISTRATIONS

PE – Registered Professional Traffic Engineer – TR 2537 • January, 2009
AICP – American Institute of Certified Planners – 013011 • June, 1997–January 1, 2012
PTP – Professional Transportation Planner • May, 2007 – May, 2013
INCE – Institute of Noise Control Engineering • March, 2004

PROFESSIONAL AFFILIATIONS

ASA – Acoustical Society of America
ITE – Institute of Transportation Engineers

PROFESSIONAL CERTIFICATIONS

Certified Acoustical Consultant – County of Orange • February, 2011
FHWA-NHI-142051 Highway Traffic Noise Certificate of Training • February, 2013

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APPENDIX 3.1:

COUNTY OF SAN BERNARDINO DEVELOPMENT CODE

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§ 83.01.080 Noise.

This Section establishes standards concerning acceptable noise levels for both noise-sensitive land uses and for noise-generating land uses.

(a) *Noise Measurement.* Noise shall be measured:

(1) At the property line of the nearest site that is occupied by, and/or zoned or designated to allow the development of noise-sensitive land uses;

(2) With a sound level meter that meets the standards of the American National Standards Institute (ANSI § SI4 1979, Type 1 or Type 2);

(3) Using the "A" weighted sound pressure level scale in decibels (ref. pressure = 20 micronewtons per meter squared). The unit of measure shall be designated as dB(A).

(b) *Noise Impacted Areas.* Areas within the County shall be designated as "noise-impacted" if exposed to existing or projected future exterior noise levels from mobile or stationary sources exceeding the standards listed in Subdivision (d) (Noise Standards for Stationary Noise Sources) and Subdivision (e) (Noise Standards for Adjacent Mobile Noise Sources), below. New development of residential or other noise-sensitive land uses shall not be allowed in noise-impacted areas unless effective mitigation measures are incorporated into the project design to reduce noise levels to these standards. Noise-sensitive land uses shall include residential uses, schools, hospitals, nursing homes, religious institutions, libraries, and similar uses.

(c) *Noise Standards for Stationary Noise Sources.*

(1) *Noise Standards.* Table 83-2 (Noise Standards for Stationary Noise Sources) describes the noise standard for emanations from a stationary noise source, as it affects adjacent properties:

Table 83-2

Noise Standards for Stationary Noise Sources

Affected Land Uses (Receiving Noise)	***7:00 a.m. - 10:00 p.m. Leq***	***10:00 p.m. - 7:00 a.m. Leq***
Residential	55 dB(A)	45 dB(A)
Professional Services	55 dB(A)	55 dB(A)
Other Commercial	60 dB(A)	60 dB(A)
Industrial	70 dB(A)	70 dB(A)
Leq = (Equivalent Energy Level). The sound level corresponding to a steady-state sound level containing the same total energy as a time-varying signal over a given sample period, typically one, eight or 24 hours.		
dB(A) = (A-weighted Sound Pressure Level). The sound pressure level, in decibels, as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound, placing greater emphasis on those frequencies within the sensitivity range of the human ear.		
Ldn = (Day-Night Noise Level). The average equivalent A-weighted sound level during a 24-hour day obtained by adding 10 decibels to the hourly noise levels measured during the night (from 10:00 p.m. to 7:00 a.m.). In this way Ldn takes into account the lower tolerance of people for noise during nighttime periods.		

(2) *Noise Limit Categories.* No person shall operate or cause to be operated a source of sound at a location or allow the creation of noise on property owned, leased, occupied, or otherwise controlled by the person, which causes the noise level, when measured on another property, either incorporated or unincorporated, to exceed any one of the following:

(A) The noise standard for the receiving land use as specified in Subdivision (b) (Noise-Impacted Areas), above, for a cumulative period of more than 30 minutes in any hour.

(B) The noise standard plus five dB(A) for a cumulative period of more than 15 minutes in any hour.

(C) The noise standard plus ten dB(A) for a cumulative period of more than five minutes in any hour.

(D) The noise standard plus 15 dB(A) for a cumulative period of more than one minute in any hour.

(E) The noise standard plus 20 dB(A) for any period of time.

(d) *Noise Standards for Adjacent Mobile Noise Sources.* Noise from mobile sources may affect adjacent properties adversely. When it does, the noise shall be mitigated for any new development to a level that shall not exceed the standards described in the following Table 83-3 (Noise Standards for Adjacent Mobile Noise Sources).

Table 83-3			
Noise Standards for Adjacent Mobile Noise Sources			
Land Use		***Ldn (or CNEL) dB(A)***	
Categories	***Uses***	***Interior*** (1)	***Exterior*** (2)
Residential	Single and multi-family, duplex, mobile homes	45	60(3)
Commercial	Hotel, motel, transient housing	45	60(3)
	Commercial retail, bank, restaurant	50	N/A
	Office building, research and development, professional offices	45	65
	Amphitheater, concert hall, auditorium, movie theater	45	N/A
Institutional/Public	Hospital, nursing home, school classroom, religious institution, library	45	65
Open Space	Park	N/A	65

Notes:

(1) The indoor environment shall exclude bathrooms, kitchens, toilets, closets and corridors.

(2) The outdoor environment shall be limited to:
- Hospital/office building patios
- Hotel and motel recreation areas
- Mobile home parks
- Multi-family private patios or balconies
- Park picnic areas
- Private yard of single-family dwellings
- School playgrounds

(3) An exterior noise level of up to 65 dB(A) (or CNEL) shall be allowed provided exterior noise levels have been substantially mitigated through a reasonable application of the best available noise reduction technology, and interior noise exposure does not exceed 45 dB(A) (or CNEL) with windows and doors closed. Requiring that windows and doors remain closed to achieve an acceptable interior noise level shall necessitate the use of air conditioning or mechanical ventilation.

CNEL = (Community Noise Equivalent Level). The average equivalent A-weighted sound level during a 24-hour day, obtained after addition of approximately five decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and ten decibels to sound levels in the night from 10:00 p.m. to 7:00 a.m.

(e) *Increases in Allowable Noise Levels.* If the measured ambient level exceeds any of the first four noise limit categories in Subdivision (d)(2), above, the allowable noise exposure standard shall be increased to reflect the ambient noise level. If the ambient noise level exceeds the fifth noise limit category in Subdivision (d)(2), above, the maximum allowable noise level under this category shall be increased to reflect the maximum ambient noise level.

(f) *Reductions in Allowable Noise Levels.* If the alleged offense consists entirely of impact noise or simple tone noise, each of the noise levels in Table 83-2 (Noise Standards for Stationary Noise Sources) shall be reduced by five dB(A).

(g) *Exempt Noise.* The following sources of noise shall be exempt from the regulations of this Section:

(1) Motor vehicles not under the control of the commercial or industrial use.

(2) Emergency equipment, vehicles, and devices.

(3) Temporary construction, maintenance, repair, or demolition activities between 7:00 a.m. and 7:00 p.m., except Sundays and Federal holidays.

(h) *Noise Standards for Other Structures.* All other structures shall be sound attenuated against the combined input of all present and projected exterior noise to not exceed the criteria.

Table 83-4
Noise Standards for Other Structures

Typical Uses	*12-Hour Equivalent Sound Level (Interior) in dBA Ldn*
Educational, institutions, libraries, meeting facilities, etc.	45
General office, reception, etc.	50
Retail stores, restaurants, etc.	55
Other areas for manufacturing, assembly, testing, warehousing, etc.	65

In addition, the average of the maximum levels on the loudest of intrusive sounds occurring during a 24-hour period shall not exceed 65 dBA interior.

(Ord. 4011, passed - -2007; Am. Ord. 4245, passed - -2014)

§ 83.01.090 Vibration.

(a) *Vibration Standard.* No ground vibration shall be allowed that can be felt without the aid of instruments at or beyond the lot line, nor shall any vibration be allowed which produces a particle velocity greater than or equal to two-tenths inches per second measured at or beyond the lot line.

(b) *Vibration Measurement.* Vibration velocity shall be measured with a seismograph or other instrument capable of measuring and recording displacement and frequency, particle velocity, or acceleration. Readings shall be made at points of maximum vibration along any lot line next to a parcel within a residential, commercial and industrial land use zoning district.

(c) *Exempt Vibrations.* The following sources of vibration shall be exempt from the regulations of this Section.

(1) Motor vehicles not under the control of the subject use.

(2) Temporary construction, maintenance, repair, or demolition activities between 7:00 a.m. and 7:00 p.m., except Sundays and Federal holidays.

(Ord. 4011, passed - -2007)

APPENDIX 5.1:

STUDY AREA PHOTOS

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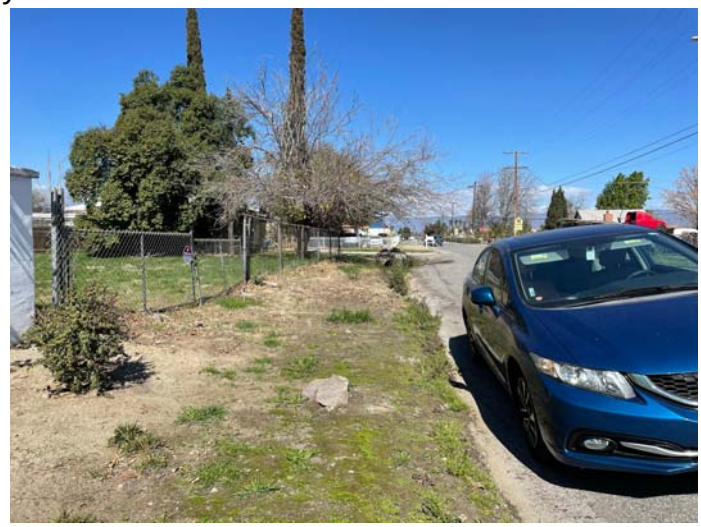
JN: 12991 Study Area Photos

L1_E
34, 3' 17.660000", 117, 24' 50.020000"



L1_N
34, 3' 17.660000", 117, 24' 50.020000"

L1_S
34, 3' 17.670000", 117, 24' 50.020000"

L1_W
34, 3' 17.730000", 117, 24' 50.020000"

L2_E
34, 3' 20.950000", 117, 24' 45.930000"

L2_N
34, 3' 20.930000", 117, 24' 45.900000"

JN: 12991 Study Area Photos

L2_S
34, 3' 20.930000", 117, 24' 45.820000"

L2_W
34, 3' 20.910000", 117, 24' 45.870000"

L3_E
34, 3' 11.040000", 117, 24' 33.790000"

L3_N
34, 3' 11.020000", 117, 24' 33.760000"

L3_S
34, 3' 11.000000", 117, 24' 33.790000"

L3_W
34, 3' 10.970000", 117, 24' 33.790000"

L4_E
34, 3' 19.170000", 117, 24' 18.460000"

L4_N
34, 3' 20.210000", 117, 24' 18.220000"

L4_S
34, 3' 19.130000", 117, 24' 18.410000"

L4_W
34, 3' 19.060000", 117, 24' 18.380000"

L5_E
34, 3' 3.240000", 117, 24' 18.490000"

L5_N
34, 3' 3.220000", 117, 24' 18.460000"

L5_S
34, 3' 3.220000", 117, 24' 18.520000"

L5_W
34, 3' 3.240000", 117, 24' 18.570000"

L6_E
34, 3' 8.180000", 117, 24' 4.240000"

L6_N
34, 3' 8.150000", 117, 24' 4.350000"

L6_S
34, 3' 8.170000", 117, 24' 4.240000"

L6_W
34, 3' 8.150000", 117, 24' 4.210000"

L7_E
34, 2' 54.600000", 117, 24' 3.250000"

L7_N
34, 2' 53.140000", 117, 24' 1.930000"

L7_S
34, 2' 54.590000", 117, 24' 3.220000"

L7_W
34, 2' 54.600000", 117, 24' 3.250000"

L8_E
34, 2' 54.390000", 117, 24' 6.380000"

L8_N
34, 2' 54.390000", 117, 24' 6.380000"

JN: 12991 Study Area Photos

L8_S
34, 2' 54.390000", 117, 24' 6.320000"

L8_W
34, 2' 54.380000", 117, 24' 6.350000"

L9_E
34, 3' 8.730000", 117, 24' 49.500000"

L9_N
34, 3' 9.640000", 117, 24' 47.440000"

L9_S
34, 3' 8.580000", 117, 24' 49.530000"

L9_W
34, 3' 8.290000", 117, 24' 49.550000"

APPENDIX 5.2:

NOISE LEVEL MEASUREMENT WORKSHEETS

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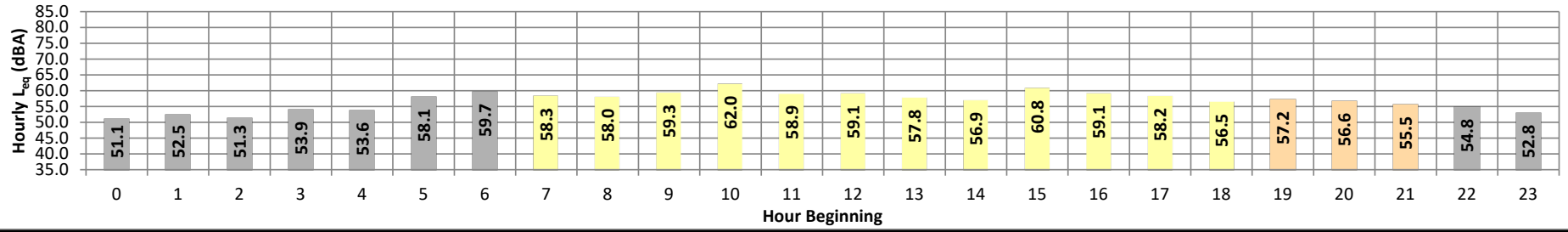
24-Hour Noise Level Measurement Summary

Date: Thursday, February 18, 2021 *Location:* M-L1 - Located on Laurel Avenue near existing single-family residential home at 10976 Laurel Avenue. *Meter:* Piccolo II *JN:* 12991

Project: Bloomington Business Park *Analyst:* P. Mara

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq}	Adj.	Adj. L_{eq}
Night	0	51.1	58.7	48.0	58.4	57.7	55.2	53.4	50.7	49.9	48.7	48.4	48.1	51.1	10.0	61.1
	1	52.5	59.3	48.6	58.9	58.4	56.6	55.3	52.7	51.2	49.5	49.1	48.8	52.5	10.0	62.5
	2	51.3	57.2	48.0	56.8	56.3	55.0	54.1	51.5	50.2	48.8	48.5	48.2	51.3	10.0	61.3
	3	53.9	63.9	48.1	63.4	62.8	60.9	59.1	51.5	50.1	48.8	48.5	48.2	53.9	10.0	63.9
	4	53.6	59.3	50.9	59.0	58.5	56.9	55.9	53.7	52.7	51.6	51.3	51.0	53.6	10.0	63.6
	5	58.1	72.1	55.3	71.8	71.1	68.8	68.0	61.1	57.4	56.3	56.0	55.5	58.1	10.0	68.1
	6	59.7	70.2	54.2	69.7	68.8	65.6	63.1	58.4	56.8	55.0	54.7	54.3	59.7	10.0	69.7
Day	7	58.3	68.1	52.7	67.8	67.3	64.8	62.5	56.9	55.1	53.6	53.3	52.9	58.3	0.0	58.3
	8	58.0	68.6	51.6	68.1	67.3	64.2	61.8	56.8	54.6	52.5	52.2	51.7	58.0	0.0	58.0
	9	59.3	69.8	52.7	69.4	68.6	66.2	63.9	57.2	55.3	53.5	53.2	52.8	59.3	0.0	59.3
	10	62.0	75.6	53.3	74.5	73.0	68.9	65.3	58.1	56.2	54.2	53.9	53.5	62.0	0.0	62.0
	11	58.9	71.2	52.4	70.3	68.9	64.8	61.8	57.0	55.1	53.2	52.9	52.5	58.9	0.0	58.9
	12	59.1	69.9	51.5	69.5	68.8	65.7	63.4	57.6	54.6	52.3	52.0	51.6	59.1	0.0	59.1
	13	57.8	69.4	49.8	69.0	68.1	65.1	61.8	55.2	52.9	50.7	50.4	50.0	57.8	0.0	57.8
	14	56.9	67.9	48.5	67.5	66.7	64.0	61.6	55.1	52.1	49.6	49.2	48.7	56.9	0.0	56.9
	15	60.8	74.5	47.6	73.7	72.3	68.0	65.1	55.9	52.4	49.0	48.4	47.8	60.8	0.0	60.8
	16	59.1	70.1	48.6	69.7	69.0	66.3	64.0	57.4	53.3	49.7	49.2	48.8	59.1	0.0	59.1
	17	58.2	69.8	49.5	69.3	68.5	65.5	63.0	55.7	52.6	50.5	50.2	49.7	58.2	0.0	58.2
	18	56.5	66.9	48.4	66.5	65.7	62.8	60.5	55.9	52.8	49.2	48.9	48.6	56.5	0.0	56.5
Evening	19	57.2	69.4	45.2	68.9	68.0	64.9	62.0	54.4	50.1	46.4	45.9	45.3	57.2	5.0	62.2
	20	56.6	67.8	44.7	66.9	65.8	62.8	60.8	56.8	52.0	45.9	45.3	44.8	56.6	5.0	61.6
	21	55.5	64.2	44.4	63.9	63.4	61.6	60.2	56.4	51.9	46.0	45.2	44.6	55.5	5.0	60.5
Night	22	54.8	60.4	48.2	60.2	59.9	59.4	59.0	56.2	52.6	49.2	48.7	48.3	54.8	10.0	64.8
	23	52.8	60.3	47.5	59.8	59.3	57.9	56.9	53.4	50.6	48.2	47.9	47.6	52.8	10.0	62.8

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	56.5	66.9	47.6	66.5	65.7	62.8	60.5	55.1	52.1	49.0	48.4	47.8
	Max	62.0	75.6	53.3	74.5	73.0	68.9	65.3	58.1	56.2	54.2	53.9	53.5
Energy Average		59.0	Average:		69.6	68.7	65.5	62.9	56.6	53.9	51.5	51.1	50.7
Evening	Min	55.5	64.2	44.4	63.9	63.4	61.6	60.2	54.4	50.1	45.9	45.2	44.6
	Max	57.2	69.4	45.2	68.9	68.0	64.9	62.0	56.8	52.0	46.4	45.9	45.3
Energy Average		56.5	Average:		66.6	65.7	63.1	61.0	55.9	51.3	46.1	45.5	44.9
Night	Min	51.1	57.2	47.5	56.8	56.3	55.0	53.4	50.7	49.9	48.2	47.9	47.6
	Max	59.7	72.1	55.3	71.8	71.1	68.8	68.0	61.1	57.4	56.3	56.0	55.5
Energy Average		55.2	Average:		62.0	61.4	59.6	58.3	54.4	52.4	50.7	50.4	50.0

L_{eq} (dBA)		
24-Hour	Daytime	Nighttime
57.6	58.6	55.2

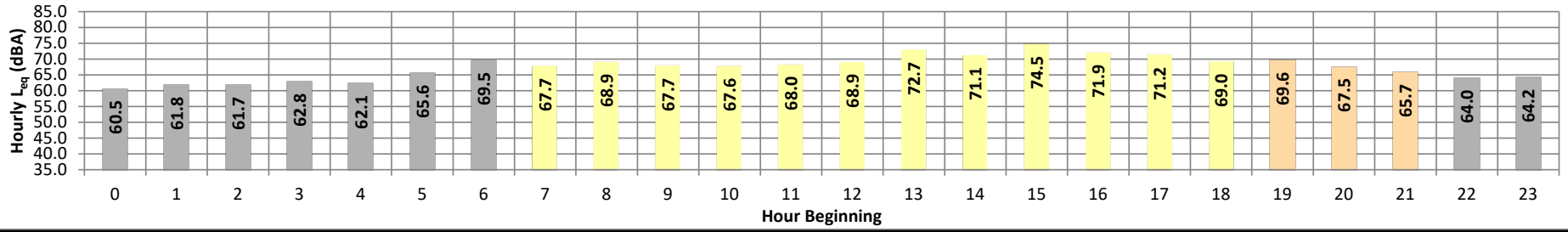
24-Hour CNEL (dBA)
62.6

24-Hour Noise Level Measurement Summary

Date: Thursday, February 18, 2021 *Location:* SP-L3 - Located on Santa Ana Avenue near existing single-family residential home at 17937 Santa Ana Avenue. *Meter:* Piccolo II *JN:* 12991

Project: Bloomington Business Park *Analyst:* P. Mara

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq}	Adj.	Adj. L_{eq}
Night	0	60.5	73.5	50.4	73.0	71.9	67.9	64.5	56.0	53.0	51.2	50.9	50.6	60.5	10.0	70.5
	1	61.8	74.5	51.0	74.0	73.0	69.3	65.9	57.3	54.3	51.8	51.5	51.1	61.8	10.0	71.8
	2	61.7	74.7	50.1	74.2	73.3	68.6	65.8	56.8	53.2	50.8	50.5	50.2	61.7	10.0	71.7
	3	62.8	76.7	50.2	75.8	74.6	70.5	67.1	54.1	52.3	50.9	50.6	50.4	62.8	10.0	72.8
	4	62.1	73.2	54.0	72.8	72.1	69.4	67.3	59.7	56.6	54.7	54.4	54.1	62.1	10.0	72.1
	5	65.6	75.9	55.7	75.5	74.7	72.5	70.9	64.9	59.8	56.6	56.2	55.9	65.6	10.0	75.6
	6	69.5	81.6	56.1	81.3	80.2	76.8	75.2	66.8	61.4	56.9	56.6	56.2	69.5	10.0	79.5
Day	7	67.7	79.4	55.1	78.9	77.9	74.7	72.5	66.6	60.5	56.1	55.7	55.2	67.7	0.0	67.7
	8	68.9	81.1	53.8	80.4	79.3	75.8	73.4	67.7	61.6	55.2	54.6	54.0	68.9	0.0	68.9
	9	67.7	78.6	54.6	78.0	76.8	74.1	72.7	67.9	62.2	55.7	55.1	54.7	67.7	0.0	67.7
	10	67.6	77.7	54.9	77.3	76.4	74.0	72.6	67.9	62.8	56.1	55.5	55.0	67.6	0.0	67.6
	11	68.0	79.2	54.0	78.6	77.4	74.5	72.7	68.0	62.4	55.2	54.7	54.2	68.0	0.0	68.0
	12	68.9	80.1	54.0	79.6	78.7	75.0	73.1	68.9	63.9	55.8	54.8	54.1	68.9	0.0	68.9
	13	72.7	86.2	52.5	85.7	84.7	80.1	75.8	68.9	64.1	55.0	53.6	52.7	72.7	0.0	72.7
	14	71.1	83.5	53.2	82.8	81.5	77.5	75.4	70.0	65.4	56.1	54.9	53.5	71.1	0.0	71.1
	15	74.5	88.4	54.2	87.9	86.6	81.2	77.1	70.6	66.5	57.7	55.9	54.5	74.5	0.0	74.5
	16	71.9	82.9	56.4	82.4	81.3	78.7	76.0	71.5	67.9	59.5	57.9	56.7	71.9	0.0	71.9
	17	71.2	81.6	56.4	81.1	80.1	77.2	75.5	71.5	68.0	59.3	57.8	56.6	71.2	0.0	71.2
	18	69.0	79.2	54.6	78.7	77.9	75.2	73.3	69.5	65.2	57.3	55.9	54.7	69.0	0.0	69.0
Evening	19	69.6	80.9	50.7	80.4	79.3	76.7	74.7	68.8	63.7	53.7	52.3	50.9	69.6	5.0	74.6
	20	67.5	78.8	50.1	78.2	77.1	74.5	72.6	67.1	60.7	52.3	51.3	50.4	67.5	5.0	72.5
	21	65.7	77.0	49.5	76.6	75.6	72.7	70.9	65.0	59.0	51.1	50.3	49.7	65.7	5.0	70.7
Night	22	64.0	75.2	51.2	74.9	74.3	71.7	68.8	62.1	57.1	52.4	51.8	51.3	64.0	10.0	74.0
	23	64.2	77.1	51.5	76.5	75.3	71.4	68.5	61.0	56.1	52.3	52.0	51.6	64.2	10.0	74.2

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	67.6	77.7	52.5	77.3	76.4	74.0	72.5	66.6	60.5	55.0	53.6	52.7
	Max	74.5	88.4	56.4	87.9	86.6	81.2	77.1	71.5	68.0	59.5	57.9	56.7
Energy Average		70.5	Average:		80.9	79.9	76.5	74.2	69.1	64.2	56.6	55.5	54.7
Evening	Min	65.7	77.0	49.5	76.6	75.6	72.7	70.9	65.0	59.0	51.1	50.3	49.7
	Max	69.6	80.9	50.7	80.4	79.3	76.7	74.7	68.8	63.7	53.7	52.3	50.9
Energy Average		67.9	Average:		78.4	77.4	74.6	72.7	67.0	61.1	52.4	51.3	50.3
Night	Min	60.5	73.2	50.1	72.8	71.9	67.9	64.5	54.1	52.3	50.8	50.5	50.2
	Max	69.5	81.6	56.1	81.3	80.2	76.8	75.2	66.8	61.4	56.9	56.6	56.2
Energy Average		64.5	Average:		75.3	74.4	70.9	68.2	59.9	56.0	53.1	52.7	52.4

L_{eq} (dBA)		
24-Hour	Daytime	Nighttime
68.8	70.1	64.5

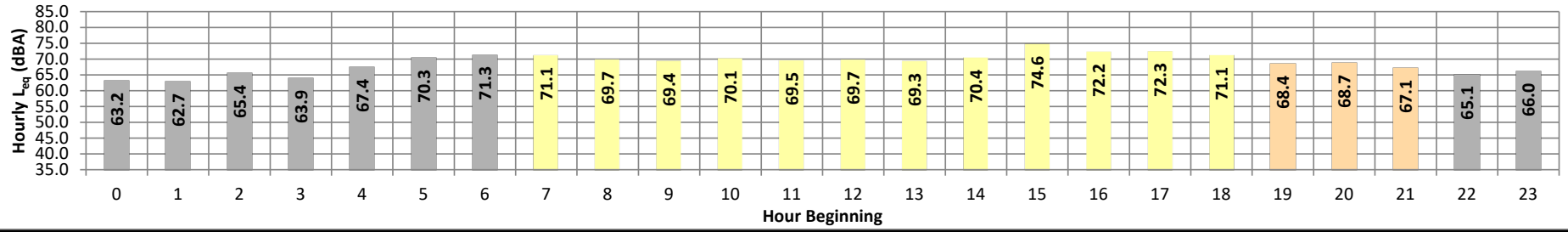
24-Hour CNEL (dBA)

72.7

24-Hour Noise Level Measurement Summary

Date: Thursday, February 18, 2021
Project: Bloomington Business Park
Location: P-L1, M-L3 - Located on Rose Avenue and Locust Avenue near existing single-family residential home at 18121 Rose Avenue.
Meter: Piccolo II
JN: 12991
Analyst: P. Mara

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq}	Adj.	Adj. L_{eq}
Night	0	63.2	74.7	47.3	74.3	73.6	71.2	68.9	60.6	52.5	48.1	47.8	47.4	63.2	10.0	73.2
	1	62.7	74.8	47.7	74.5	73.7	70.9	68.5	57.4	51.6	48.6	48.3	47.9	62.7	10.0	72.7
	2	65.4	78.7	47.6	78.2	77.1	73.1	70.1	60.6	54.0	48.5	48.1	47.8	65.4	10.0	75.4
	3	63.9	75.6	47.6	75.3	74.6	72.2	69.9	60.0	52.2	48.3	48.0	47.7	63.9	10.0	73.9
	4	67.4	78.1	51.0	77.8	77.1	75.0	73.3	66.4	58.3	52.1	51.6	51.1	67.4	10.0	77.4
	5	70.3	79.9	55.7	79.5	79.0	77.1	75.7	70.8	64.8	57.1	56.4	55.8	70.3	10.0	80.3
	6	71.3	80.1	56.3	79.8	79.2	77.6	76.4	72.2	66.7	58.5	57.5	56.5	71.3	10.0	81.3
Day	7	71.1	80.4	54.5	80.1	79.4	77.3	76.1	72.1	66.2	56.7	55.6	54.7	71.1	0.0	71.1
	8	69.7	79.4	54.3	79.0	78.4	76.3	75.0	70.3	64.1	55.9	55.2	54.5	69.7	0.0	69.7
	9	69.4	78.1	55.1	77.7	77.1	75.7	74.6	70.5	64.9	56.9	56.0	55.3	69.4	0.0	69.4
	10	70.1	80.7	57.0	80.2	79.3	76.5	74.8	70.1	65.2	58.7	57.8	57.1	70.1	0.0	70.1
	11	69.5	78.3	56.7	78.0	77.4	75.7	74.5	70.5	65.4	58.6	57.7	56.9	69.5	0.0	69.5
	12	69.7	78.4	54.7	78.1	77.4	75.6	74.4	71.0	66.3	57.2	55.8	54.9	69.7	0.0	69.7
	13	69.3	78.2	53.0	77.8	77.1	75.4	74.3	70.5	65.4	55.4	54.0	53.2	69.3	0.0	69.3
	14	70.4	79.3	53.8	79.0	78.3	76.3	74.9	71.3	66.9	57.8	55.6	54.1	70.4	0.0	70.4
	15	74.6	86.1	57.2	85.8	84.9	81.9	79.5	73.0	69.7	61.4	59.2	57.5	74.6	0.0	74.6
	16	72.2	79.6	58.4	79.2	78.7	77.0	76.3	73.6	70.6	62.4	60.3	58.7	72.2	0.0	72.2
	17	72.3	80.5	58.4	80.2	79.6	77.5	76.4	73.5	70.3	62.0	60.4	58.8	72.3	0.0	72.3
	18	71.1	79.1	56.6	78.8	78.2	76.6	75.6	72.5	68.6	60.2	58.3	56.8	71.1	0.0	71.1
Evening	19	68.4	78.0	51.6	77.6	76.9	74.8	73.4	69.3	63.9	54.5	53.0	51.8	68.4	5.0	73.4
	20	68.7	78.5	51.4	78.2	77.5	75.4	73.9	69.2	63.6	55.0	53.4	51.7	68.7	5.0	73.7
	21	67.1	76.9	50.3	76.6	76.0	74.1	72.7	67.0	60.8	53.0	51.6	50.5	67.1	5.0	72.1
Night	22	65.1	76.0	48.9	75.7	75.0	72.5	70.8	63.4	57.8	50.8	50.1	49.3	65.1	10.0	75.1
	23	66.0	77.9	48.1	77.5	76.5	73.7	71.8	63.5	56.7	50.4	49.6	48.4	66.0	10.0	76.0

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	69.3	78.1	53.0	77.7	77.1	75.4	74.3	70.1	64.1	55.4	54.0	53.2
	Max	74.6	86.1	58.4	85.8	84.9	81.9	79.5	73.6	70.6	62.4	60.4	58.8
Energy Average		71.1	Average:		79.5	78.8	76.8	75.5	71.6	67.0	58.6	57.2	56.0
Evening	Min	67.1	76.9	50.3	76.6	76.0	74.1	72.7	67.0	60.8	53.0	51.6	50.5
	Max	68.7	78.5	51.6	78.2	77.5	75.4	73.9	69.3	63.9	55.0	53.4	51.8
Energy Average		68.2	Average:		77.5	76.8	74.8	73.3	68.5	62.7	54.2	52.7	51.4
Night	Min	62.7	74.7	47.3	74.3	73.6	70.9	68.5	57.4	51.6	48.1	47.8	47.4
	Max	71.3	80.1	56.3	79.8	79.2	77.6	76.4	72.2	66.7	58.5	57.5	56.5
Energy Average		67.2	Average:		77.0	76.2	73.7	71.7	63.9	57.2	51.4	50.8	50.2

L_{eq} (dBA)

24-Hour	*Daytime*	*Nighttime*
69.6	**70.6**	**67.2**

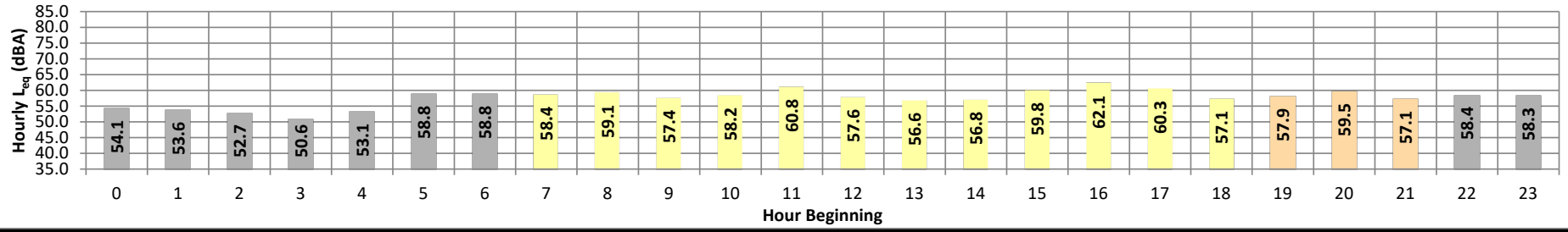
24-Hour CNEL (dBA)

74.5

24-Hour Noise Level Measurement Summary

Date: Thursday, February 18, 2021
Project: Bloomington Business Park
Location: SP-L5, M-L4 - Located on Maple Avenue near existing single-family residential home at 10940 Maple Avenue.
Meter: Piccolo II
JN: 12991
Analyst: P. Mara

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq}	Adj.	Adj. L_{eq}
Night	0	54.1	66.5	47.1	66.0	65.0	61.1	56.9	50.8	49.5	47.9	47.6	47.3	54.1	10.0	64.1
	1	53.6	64.1	47.9	63.7	62.9	59.9	56.9	52.5	50.5	48.7	48.4	48.1	53.6	10.0	63.6
	2	52.7	64.0	46.5	63.5	62.7	59.5	56.6	50.0	48.6	47.2	46.9	46.6	52.7	10.0	62.7
	3	50.6	60.5	46.5	59.9	58.8	54.5	53.0	50.2	48.7	47.3	46.9	46.6	50.6	10.0	60.6
	4	53.1	61.8	49.7	61.4	60.5	57.7	55.8	52.5	51.4	50.3	50.1	49.8	53.1	10.0	63.1
	5	58.8	71.0	53.0	70.3	69.0	64.6	61.3	56.8	55.3	53.7	53.5	53.1	58.8	10.0	68.8
	6	58.8	70.4	52.7	69.8	68.9	65.4	62.4	56.3	54.9	53.5	53.2	52.9	58.8	10.0	68.8
Day	7	58.4	71.2	51.0	70.6	69.3	64.8	61.3	55.0	53.3	51.7	51.5	51.2	58.4	0.0	58.4
	8	59.1	71.7	50.6	71.1	69.9	66.1	63.1	55.7	53.3	51.5	51.1	50.7	59.1	0.0	59.1
	9	57.4	68.6	51.0	68.1	67.0	63.7	60.9	55.7	53.8	51.9	51.5	51.1	57.4	0.0	57.4
	10	58.2	68.7	52.7	68.2	67.2	63.6	61.4	57.2	55.6	53.6	53.2	52.8	58.2	0.0	58.2
	11	60.8	73.7	51.0	73.2	72.0	67.6	64.7	57.0	54.3	52.0	51.5	51.1	60.8	0.0	60.8
	12	57.6	69.6	48.9	69.0	67.9	64.1	61.3	55.7	52.8	49.9	49.5	49.1	57.6	0.0	57.6
	13	56.6	69.0	46.8	68.5	67.3	63.6	60.8	53.7	50.6	47.7	47.4	47.0	56.6	0.0	56.6
	14	56.8	69.0	46.2	68.5	67.5	63.8	60.9	54.2	51.3	47.8	47.0	46.4	56.8	0.0	56.8
	15	59.8	73.4	44.9	72.8	71.5	67.2	63.8	54.6	49.9	46.2	45.6	45.0	59.8	0.0	59.8
	16	62.1	74.7	47.0	74.1	73.0	69.6	66.9	59.3	52.9	48.3	47.8	47.1	62.1	0.0	62.1
	17	60.3	73.4	47.5	72.7	71.5	67.8	65.0	56.1	51.7	48.6	48.1	47.7	60.3	0.0	60.3
	18	57.1	84.2	47.5	82.3	80.2	73.7	68.1	56.7	52.3	48.6	48.1	47.7	57.1	0.0	57.1
Evening	19	57.9	71.1	43.5	70.5	69.2	64.8	61.9	54.9	49.9	44.9	44.2	43.7	57.9	5.0	62.9
	20	59.5	70.3	51.8	69.8	68.9	65.7	63.5	59.2	54.9	52.5	52.3	52.0	59.5	5.0	64.5
	21	57.1	66.7	45.9	66.3	65.5	63.2	61.9	58.0	52.7	47.1	46.6	46.1	57.1	5.0	62.1
Night	22	58.4	66.5	46.7	66.0	65.5	64.2	63.4	59.9	54.7	47.9	47.3	46.9	58.4	10.0	68.4
	23	58.3	71.4	45.5	70.7	69.4	65.1	62.1	55.8	50.5	46.4	46.0	45.6	58.3	10.0	68.3

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	56.6	68.6	44.9	68.1	67.0	63.6	60.8	53.7	49.9	46.2	45.6	45.0
	Max	62.1	84.2	52.7	82.3	80.2	73.7	68.1	59.3	55.6	53.6	53.2	52.8
Energy Average		59.0	Average:		71.6	70.4	66.3	63.2	55.9	52.7	49.8	49.4	48.9
Evening	Min	57.1	66.7	43.5	66.3	65.5	63.2	61.9	54.9	49.9	44.9	44.2	43.7
	Max	59.5	71.1	51.8	70.5	69.2	65.7	63.5	59.2	54.9	52.5	52.3	52.0
Energy Average		58.3	Average:		68.9	67.9	64.5	62.5	57.3	52.5	48.1	47.7	47.3
Night	Min	50.6	60.5	45.5	59.9	58.8	54.5	53.0	50.0	48.6	46.4	46.0	45.6
	Max	58.8	71.4	53.0	70.7	69.4	65.4	63.4	59.9	55.3	53.7	53.5	53.1
Energy Average		56.4	Average:		65.7	64.7	61.3	58.7	53.9	51.6	49.2	48.9	48.5

L_{eq} (dBA)		
24-Hour	Daytime	Nighttime
58.1	58.9	56.4

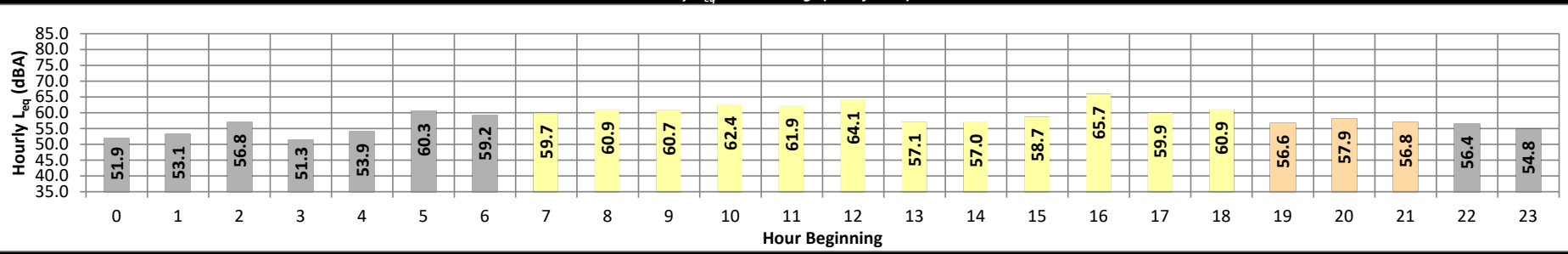
24-Hour CNEL (dBA)
63.6

24-Hour Noise Level Measurement Summary

Date: Thursday, February 18, 2021 *Location:* PL-2 - Located on Maple Avenue near existing single-family residential home at 11181 Maple Avenue. *Meter:* Piccolo II *JN:* 12991

Project: Bloomington Business Park *Analyst:* P. Mara

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq}	Adj.	Adj. L_{eq}
Night	0	51.9	61.0	47.8	60.5	59.5	56.5	54.5	51.3	50.2	48.6	48.3	48.0	51.9	10.0	61.9
	1	53.1	62.3	48.9	61.7	60.6	57.6	55.8	52.8	51.3	49.7	49.4	49.1	53.1	10.0	63.1
	2	56.8	71.2	48.0	70.2	68.3	62.5	58.4	53.3	50.7	48.8	48.5	48.1	56.8	10.0	66.8
	3	51.3	60.6	47.3	60.0	58.8	55.5	53.9	51.0	49.7	48.0	47.8	47.5	51.3	10.0	61.3
	4	53.9	62.9	50.4	62.2	61.1	58.2	56.5	53.5	52.2	51.0	50.8	50.5	53.9	10.0	63.9
	5	60.3	70.5	54.4	69.9	68.8	65.6	63.7	60.0	57.7	55.2	54.8	54.5	60.3	10.0	70.3
	6	59.2	68.8	53.9	68.2	67.2	64.5	62.7	58.8	56.7	54.6	54.3	54.0	59.2	10.0	69.2
Day	7	59.7	71.6	52.7	70.9	69.6	65.9	63.1	58.2	55.7	53.5	53.1	52.8	59.7	0.0	59.7
	8	60.9	72.8	52.5	72.1	70.6	66.7	64.4	60.0	56.8	53.5	53.0	52.6	60.9	0.0	60.9
	9	60.7	69.8	53.4	69.3	68.4	66.2	64.7	61.0	58.0	54.4	53.9	53.5	60.7	0.0	60.7
	10	62.4	71.3	54.7	70.8	70.1	68.1	66.7	62.7	59.8	55.9	55.3	54.8	62.4	0.0	62.4
	11	61.9	72.8	53.3	72.1	70.9	68.1	66.5	61.1	57.9	54.5	54.0	53.5	61.9	0.0	61.9
	12	64.1	76.8	51.2	76.2	75.6	72.2	68.1	59.2	55.6	52.2	51.8	51.4	64.1	0.0	64.1
	13	57.1	68.1	49.1	67.4	66.3	63.4	61.2	56.3	53.1	50.1	49.6	49.2	57.1	0.0	57.1
	14	57.0	69.7	47.4	69.0	67.8	63.7	61.0	54.0	51.1	48.3	48.0	47.5	57.0	0.0	57.0
	15	58.7	72.0	46.0	71.3	70.0	66.4	63.9	53.1	49.4	46.9	46.5	46.1	58.7	0.0	58.7
	16	65.7	80.6	48.3	79.6	78.1	73.2	67.8	57.7	52.6	49.3	48.9	48.5	65.7	0.0	65.7
	17	59.9	73.3	48.8	72.5	71.1	66.9	63.8	56.1	52.2	49.6	49.3	49.0	59.9	0.0	59.9
	18	60.9	73.9	48.9	73.1	71.8	68.3	65.8	57.8	52.8	49.7	49.4	49.0	60.9	0.0	60.9
Evening	19	56.6	69.8	44.8	68.9	67.5	63.3	60.5	54.4	50.1	45.9	45.4	45.0	56.6	5.0	61.6
	20	57.9	70.0	45.5	69.3	68.0	64.2	61.6	57.6	52.7	46.9	46.4	45.7	57.9	5.0	62.9
	21	56.8	67.8	44.5	67.1	65.8	62.4	60.7	57.4	52.7	46.4	45.7	44.7	56.8	5.0	61.8
Night	22	56.4	66.7	46.7	66.2	65.3	62.3	60.2	56.7	53.1	47.8	47.4	46.9	56.4	10.0	66.4
	23	54.8	67.1	45.6	66.3	64.9	60.6	58.0	53.8	50.6	46.5	46.1	45.8	54.8	10.0	64.8

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	57.0	68.1	46.0	67.4	66.3	63.4	61.0	53.1	49.4	46.9	46.5	46.1
	Max	65.7	80.6	54.7	79.6	78.1	73.2	68.1	62.7	59.8	55.9	55.3	54.8
Energy Average		61.5	Average:		72.0	70.9	67.4	64.8	58.1	54.6	51.5	51.1	50.7
Evening	Min	56.6	67.8	44.5	67.1	65.8	62.4	60.5	54.4	50.1	45.9	45.4	44.7
	Max	57.9	70.0	45.5	69.3	68.0	64.2	61.6	57.6	52.7	46.9	46.4	45.7
Energy Average		57.1	Average:		68.5	67.1	63.3	60.9	56.5	51.8	46.4	45.8	45.1
Night	Min	51.3	60.6	45.6	60.0	58.8	55.5	53.9	51.0	49.7	46.5	46.1	45.8
	Max	60.3	71.2	54.4	70.2	68.8	65.6	63.7	60.0	57.7	55.2	54.8	54.5
Energy Average		56.3	Average:		65.0	63.8	60.4	58.2	54.6	52.5	50.0	49.7	49.4

L_{eq} (dBA)

24-Hour	*Daytime*	*Nighttime*
59.7	**60.9**	**56.3**

24-Hour CNEL (dBA)

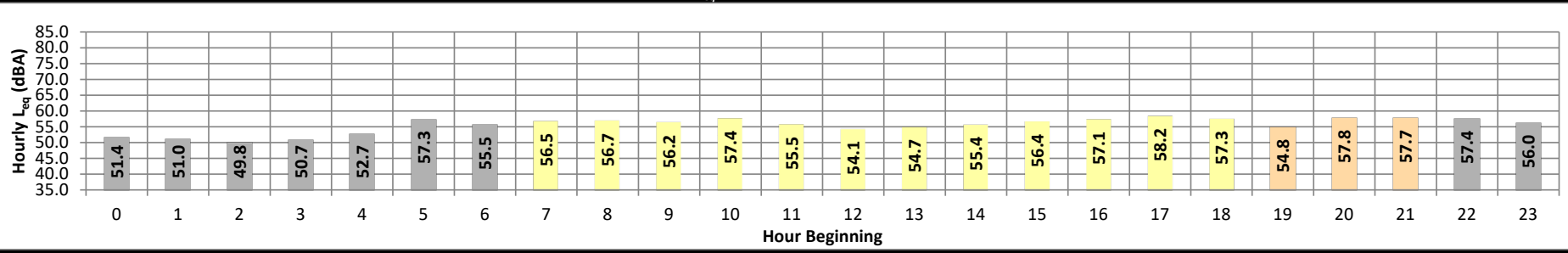
64.0

24-Hour Noise Level Measurement Summary

Date: Thursday, February 18, 2021 *Location:* M-L6 - Located by Walter Zimmerman Elementary School at 11050 Linden Avenue. *Meter:* Piccolo II *JN:* 12991

Project: Bloomington Business Park *Analyst:* P. Mara

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq}	Adj.	Adj. L_{eq}
Night	0	51.4	60.4	46.3	60.1	59.6	57.4	55.2	51.0	48.7	47.1	46.8	46.5	51.4	10.0	61.4
	1	51.0	57.2	47.6	56.8	56.2	54.5	53.5	51.4	50.0	48.4	48.1	47.8	51.0	10.0	61.0
	2	49.8	58.8	46.2	58.0	56.6	54.2	52.3	49.4	48.2	46.9	46.6	46.3	49.8	10.0	59.8
	3	50.7	58.5	46.4	58.1	57.4	55.4	53.9	50.8	49.1	47.1	46.9	46.5	50.7	10.0	60.7
	4	52.7	60.7	49.1	60.2	59.5	57.1	55.6	52.5	51.3	49.8	49.5	49.3	52.7	10.0	62.7
	5	57.3	68.0	51.9	67.7	66.9	64.2	61.8	57.6	55.4	53.0	52.5	52.0	57.3	10.0	67.3
	6	55.5	65.7	51.6	65.3	64.4	61.8	59.8	56.0	54.3	52.4	52.1	51.7	55.5	10.0	65.5
Day	7	56.5	63.7	51.9	63.4	62.9	61.1	59.8	57.0	54.8	52.8	52.5	52.1	56.5	0.0	56.5
	8	56.7	64.6	50.4	64.1	63.5	61.9	60.8	57.1	54.6	51.7	51.3	50.6	56.7	0.0	56.7
	9	56.2	63.0	49.8	62.6	62.1	60.8	60.0	57.0	54.4	51.1	50.6	50.0	56.2	0.0	56.2
	10	57.4	65.0	50.8	64.5	64.0	62.5	61.3	57.9	55.3	52.2	51.7	51.0	57.4	0.0	57.4
	11	55.5	63.4	48.9	63.1	62.6	60.9	59.4	55.8	53.5	50.2	49.6	49.1	55.5	0.0	55.5
	12	54.1	62.3	47.8	61.9	61.4	59.8	58.4	54.3	51.6	48.8	48.4	48.0	54.1	0.0	54.1
	13	54.7	65.8	46.5	65.1	64.1	60.9	58.6	53.9	50.7	47.7	47.2	46.7	54.7	0.0	54.7
	14	55.4	65.1	46.0	64.7	64.0	61.7	59.9	55.6	51.4	47.4	46.9	46.3	55.4	0.0	55.4
	15	56.4	66.7	46.8	66.4	65.7	63.2	61.0	55.8	52.1	48.0	47.5	47.0	56.4	0.0	56.4
	16	57.1	67.9	47.8	67.4	66.8	64.9	63.4	58.6	53.3	49.1	48.6	48.0	57.1	0.0	57.1
	17	58.2	69.7	48.9	69.3	68.6	65.9	63.3	56.8	53.4	50.1	49.6	49.1	58.2	0.0	58.2
	18	57.3	66.8	49.4	66.3	65.5	63.3	62.0	57.5	53.5	50.4	50.0	49.6	57.3	0.0	57.3
Evening	19	54.8	63.9	46.0	63.4	62.8	61.2	59.7	55.4	50.7	47.2	46.7	46.2	54.8	5.0	59.8
	20	57.8	67.0	47.2	66.6	66.1	64.7	63.4	57.6	52.0	48.2	47.8	47.4	57.8	5.0	62.8
	21	57.7	65.3	49.9	64.9	64.5	63.4	62.6	58.7	53.6	50.8	50.5	50.1	57.7	5.0	62.7
Night	22	57.4	64.8	51.2	64.4	63.9	62.8	61.9	58.0	54.4	52.0	51.7	51.4	57.4	10.0	67.4
	23	56.0	64.1	50.1	63.4	62.8	61.3	60.4	56.4	53.4	51.0	50.7	50.3	56.0	10.0	66.0

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	54.1	62.3	46.0	61.9	61.4	59.8	58.4	53.9	50.7	47.4	46.9	46.3
	Max	58.2	69.7	51.9	69.3	68.6	65.9	63.4	58.6	55.3	52.8	52.5	52.1
Energy Average		56.4	Average:		64.9	64.3	62.3	60.7	56.4	53.2	50.0	49.5	49.0
Evening	Min	54.8	63.9	46.0	63.4	62.8	61.2	59.7	55.4	50.7	47.2	46.7	46.2
	Max	57.8	67.0	49.9	66.6	66.1	64.7	63.4	58.7	53.6	50.8	50.5	50.1
Energy Average		57.0	Average:		65.0	64.5	63.1	61.9	57.2	52.1	48.7	48.3	47.9
Night	Min	49.8	57.2	46.2	56.8	56.2	54.2	52.3	49.4	48.2	46.9	46.6	46.3
	Max	57.4	68.0	51.9	67.7	66.9	64.2	61.9	58.0	55.4	53.0	52.5	52.0
Energy Average		54.4	Average:		61.6	60.8	58.8	57.1	53.7	51.6	49.7	49.4	49.1

L_{eq} (dBA)		
24-Hour	Daytime	Nighttime
55.9	56.5	54.4

24-Hour CNEL (dBA)

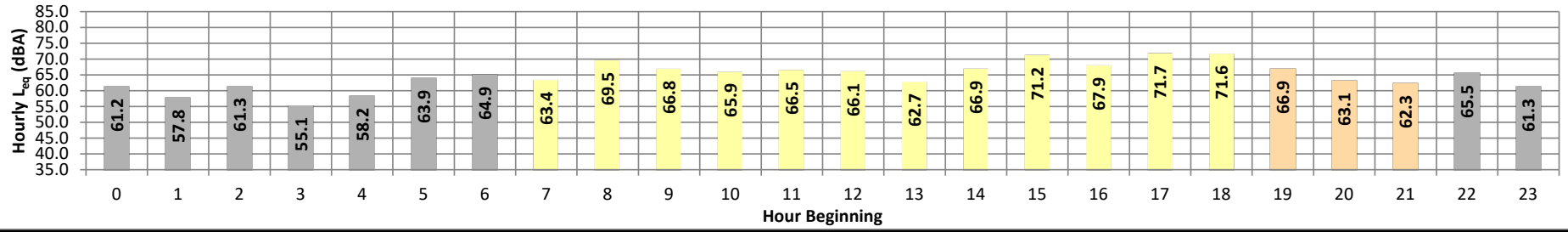
61.6

24-Hour Noise Level Measurement Summary

Date: Thursday, February 18, 2021 | *Location:* M-L7 - Located southeast of the Project site on Linden Avenue and Jurupa Avenue near existing single-family residential home at 18507 Jurupa Avenue. | *Meter:* Piccolo II | *JN:* 12991

Project: Bloomington Business Park | *Analyst:* P. Mara

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq}	Adj.	Adj. L_{eq}
Night	0	61.2	71.1	48.3	70.8	70.5	69.3	67.9	58.1	51.7	49.1	48.8	48.4	61.2	10.0	71.2
	1	57.8	68.0	49.3	67.6	67.1	64.9	62.8	57.0	52.4	50.0	49.7	49.4	57.8	10.0	67.8
	2	61.3	73.3	47.6	73.1	72.6	70.3	67.8	53.4	50.3	48.2	48.0	47.7	61.3	10.0	71.3
	3	55.1	64.4	47.8	64.1	63.5	62.0	60.5	54.2	51.5	48.7	48.3	48.0	55.1	10.0	65.1
	4	58.2	67.5	50.7	67.1	66.6	65.1	63.6	57.5	54.3	51.4	51.1	50.8	58.2	10.0	68.2
	5	63.9	73.5	53.7	73.2	72.6	71.2	69.9	63.0	58.2	54.8	54.3	53.8	63.9	10.0	73.9
	6	64.9	76.7	54.4	75.8	75.0	73.1	70.5	61.7	57.9	55.3	54.9	54.5	64.9	10.0	74.9
Day	7	63.4	72.7	54.3	72.3	71.8	70.2	68.7	62.8	59.1	55.4	55.0	54.5	63.4	0.0	63.4
	8	69.5	79.7	56.5	79.2	78.4	76.5	74.9	69.8	63.2	58.1	57.5	56.7	69.5	0.0	69.5
	9	66.8	76.8	57.8	76.4	75.7	73.5	71.5	66.1	62.9	59.6	58.8	58.0	66.8	0.0	66.8
	10	65.9	76.0	56.1	75.8	75.2	73.3	71.4	64.3	61.1	57.3	56.9	56.3	65.9	0.0	65.9
	11	66.5	77.2	53.5	76.7	76.2	74.2	72.5	64.5	59.0	54.8	54.2	53.7	66.5	0.0	66.5
	12	66.1	77.9	52.3	77.5	76.9	74.2	71.1	63.2	58.5	54.0	53.3	52.5	66.1	0.0	66.1
	13	62.7	73.1	50.7	72.6	71.9	70.3	68.3	61.6	57.2	52.4	51.7	50.9	62.7	0.0	62.7
	14	66.9	78.8	51.4	78.2	77.3	74.6	72.2	64.2	58.6	53.2	52.3	51.5	66.9	0.0	66.9
	15	71.2	82.9	52.8	82.4	81.6	79.3	77.9	65.5	60.0	55.0	54.1	53.1	71.2	0.0	71.2
	16	67.9	78.1	55.2	77.5	76.7	75.0	73.5	67.5	62.4	57.0	56.2	55.4	67.9	0.0	67.9
	17	71.7	84.6	55.2	84.1	83.2	79.9	76.5	67.5	62.1	57.0	56.2	55.5	71.7	0.0	71.7
	18	71.6	85.3	54.2	85.0	83.7	79.2	74.9	65.1	60.7	55.8	55.0	54.3	71.6	0.0	71.6
Evening	19	66.9	78.8	49.7	78.3	77.7	75.0	72.9	63.0	57.7	51.5	50.7	49.9	66.9	5.0	71.9
	20	63.1	73.8	49.1	73.4	72.9	70.9	68.7	61.7	56.6	50.8	50.0	49.3	63.1	5.0	68.1
	21	62.3	72.8	49.9	72.6	72.1	69.5	67.1	61.4	56.8	51.2	50.6	50.1	62.3	5.0	67.3
Night	22	65.5	77.1	52.4	76.8	76.1	74.0	70.3	61.0	57.0	53.3	52.9	52.5	65.5	10.0	75.5
	23	61.3	71.7	50.6	71.4	71.0	69.6	67.3	57.8	54.1	51.3	51.1	50.7	61.3	10.0	71.3

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	62.7	72.7	50.7	72.3	71.8	70.2	68.3	61.6	57.2	52.4	51.7	50.9
	Max	71.7	85.3	57.8	85.0	83.7	79.9	77.9	69.8	63.2	59.6	58.8	58.0
Energy Average		68.4	Average:		78.1	77.4	75.0	72.8	65.2	60.4	55.8	55.1	54.4
Evening	Min	62.3	72.8	49.1	72.6	72.1	69.5	67.1	61.4	56.6	50.8	50.0	49.3
	Max	66.9	78.8	49.9	78.3	77.7	75.0	72.9	63.0	57.7	51.5	50.7	50.1
Energy Average		64.6	Average:		74.8	74.2	71.8	69.6	62.0	57.0	51.1	50.4	49.8
Night	Min	55.1	64.4	47.6	64.1	63.5	62.0	60.5	53.4	50.3	48.2	48.0	47.7
	Max	65.5	77.1	54.4	76.8	76.1	74.0	70.5	63.0	58.2	55.3	54.9	54.5
Energy Average		62.1	Average:		71.1	70.5	68.8	66.7	58.2	54.2	51.4	51.0	50.6

L_{eq} (dBA)		
24-Hour	Daytime	Nighttime
66.5	67.9	62.1

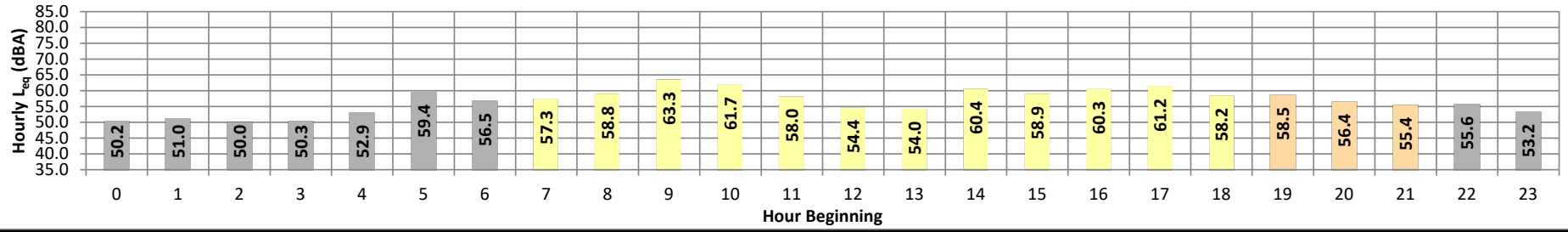
24-Hour CNEL (dBA)
70.3

24-Hour Noise Level Measurement Summary

Date: Thursday, February 18, 2021 *Location:* M-L8 - Located south on Jurupa Avenue by Kessler Park at 18401 Jurupa Avenue. *Meter:* Piccolo II *JN:* 12991

Project: Bloomington Business Park *Analyst:* P. Mara

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq}	Adj.	Adj. L_{eq}
Night	0	50.2	58.9	45.0	58.3	57.9	57.0	55.5	49.0	47.1	45.7	45.5	45.2	50.2	10.0	60.2
	1	51.0	59.8	46.1	59.4	58.8	56.8	55.0	50.3	48.6	46.9	46.6	46.3	51.0	10.0	61.0
	2	50.0	57.4	44.9	57.1	56.7	55.6	54.7	50.0	47.1	45.5	45.3	45.0	50.0	10.0	60.0
	3	50.3	58.4	44.7	58.1	57.7	56.2	54.8	50.3	47.5	45.4	45.1	44.8	50.3	10.0	60.3
	4	52.9	61.0	47.9	60.6	60.1	58.9	57.7	52.3	50.1	48.5	48.3	48.0	52.9	10.0	62.9
	5	59.4	71.1	50.3	70.3	69.2	66.2	63.9	58.0	53.8	51.1	50.8	50.5	59.4	10.0	69.4
	6	56.5	76.0	51.9	74.5	73.9	71.7	70.2	59.0	55.3	52.7	52.5	52.1	56.5	10.0	66.5
Day	7	57.3	65.3	50.7	64.9	64.5	63.2	62.1	57.6	54.2	51.5	51.2	50.8	57.3	0.0	57.3
	8	58.8	64.8	51.9	64.5	64.3	63.5	62.8	60.0	57.2	53.0	52.6	52.1	58.8	0.0	58.8
	9	63.3	71.9	58.2	71.7	71.3	70.2	69.3	66.4	63.3	59.6	59.1	58.4	63.3	0.0	63.3
	10	61.7	68.6	53.4	68.3	68.0	66.8	65.9	62.8	59.6	55.6	54.0	53.5	61.7	0.0	61.7
	11	58.0	67.4	49.3	67.0	66.5	65.0	63.7	56.9	53.8	50.5	50.0	49.5	58.0	0.0	58.0
	12	54.4	64.7	46.4	64.2	63.4	60.9	58.8	53.9	50.5	47.3	47.0	46.6	54.4	0.0	54.4
	13	54.0	62.3	48.1	61.8	61.2	59.7	58.2	54.3	51.5	49.2	48.8	48.3	54.0	0.0	54.0
	14	60.4	72.8	44.2	72.4	71.6	68.3	65.1	56.2	52.2	45.7	45.0	44.4	60.4	0.0	60.4
	15	58.9	70.2	46.8	69.5	68.8	65.9	63.5	57.6	53.4	48.6	48.0	47.1	58.9	0.0	58.9
	16	60.3	69.5	49.7	69.1	68.6	67.3	65.5	60.2	56.4	51.3	50.5	49.9	60.3	0.0	60.3
	17	61.2	71.7	50.3	70.9	70.1	68.0	66.9	60.4	56.4	51.8	51.1	50.5	61.2	0.0	61.2
	18	58.2	66.3	49.4	66.0	65.6	64.2	63.0	58.9	55.3	50.8	50.2	49.6	58.2	0.0	58.2
Evening	19	58.5	68.7	46.1	68.2	67.8	66.2	64.8	56.7	52.7	47.5	47.0	46.3	58.5	5.0	63.5
	20	56.4	65.1	46.0	64.7	64.4	63.0	61.6	56.9	52.7	47.7	47.1	46.1	56.4	5.0	61.4
	21	55.4	63.0	46.2	62.7	62.3	61.4	60.2	56.3	52.3	47.4	46.9	46.4	55.4	5.0	60.4
Night	22	55.6	63.1	48.8	62.8	62.5	61.7	60.7	56.0	52.4	49.6	49.3	48.9	55.6	10.0	65.6
	23	53.2	60.6	46.9	60.1	59.7	58.6	57.3	53.9	50.5	47.6	47.4	47.0	53.2	10.0	63.2

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	54.0	62.3	44.2	61.8	61.2	59.7	58.2	53.9	50.5	45.7	45.0	44.4
	Max	63.3	72.8	58.2	72.4	71.6	70.2	69.3	66.4	63.3	59.6	59.1	58.4
Energy Average		59.6	Average:		67.5	67.0	65.3	63.7	58.8	55.3	51.3	50.6	50.1
Evening	Min	55.4	63.0	46.0	62.7	62.3	61.4	60.2	56.3	52.3	47.4	46.9	46.1
	Max	58.5	68.7	46.2	68.2	67.8	66.2	64.8	56.9	52.7	47.7	47.1	46.4
Energy Average		57.0	Average:		65.2	64.8	63.5	62.2	56.6	52.6	47.6	47.0	46.2
Night	Min	50.0	57.4	44.7	57.1	56.7	55.6	54.7	49.0	47.1	45.4	45.1	44.8
	Max	59.4	76.0	51.9	74.5	73.9	71.7	70.2	59.0	55.3	52.7	52.5	52.1
Energy Average		54.5	Average:		62.4	61.9	60.3	58.8	53.2	50.3	48.1	47.9	47.5

L_{eq} (dBA)		
24-Hour	Daytime	Nighttime
58.0	59.2	54.5

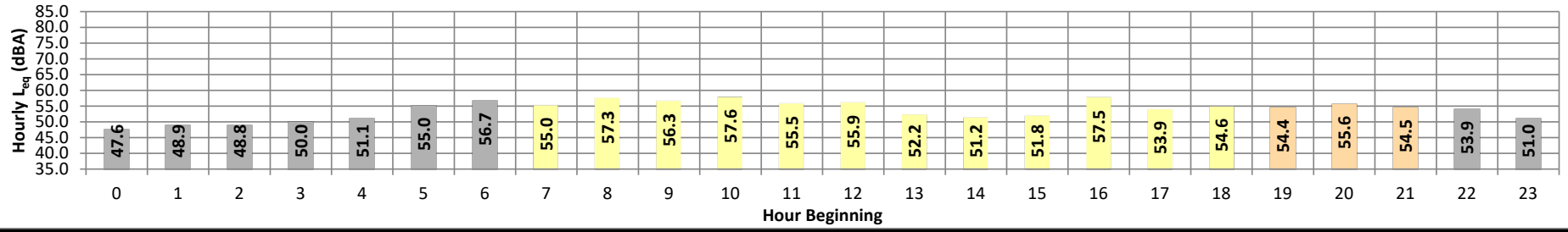
24-Hour CNEL (dBA)
62.3

24-Hour Noise Level Measurement Summary

Date: Thursday, February 18, 2021 *Location:* M-L10 - Located on Laurel Avenue near existing single-family residential home at 11188 Laurel Avenue. *Meter:* Piccolo II *JN:* 12991

Project: Bloomington Business Park *Analyst:* P. Mara

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq}	Adj.	Adj. L_{eq}
Night	0	47.6	51.3	45.3	51.1	50.7	49.9	49.4	48.2	47.2	46.0	45.7	45.5	47.6	10.0	57.6
	1	48.9	54.4	45.7	54.1	53.6	52.1	51.2	49.5	48.2	46.5	46.2	45.8	48.9	10.0	58.9
	2	48.8	54.7	45.8	54.2	53.6	52.1	51.1	49.0	47.9	46.5	46.3	45.9	48.8	10.0	58.8
	3	50.0	59.5	45.7	59.0	58.1	55.2	53.3	49.3	47.6	46.3	46.1	45.8	50.0	10.0	60.0
	4	51.1	54.7	49.0	54.3	53.9	53.1	52.7	51.5	50.8	49.6	49.4	49.1	51.1	10.0	61.1
	5	55.0	62.3	51.4	61.2	60.2	58.2	57.2	55.5	54.0	52.2	51.8	51.5	55.0	10.0	65.0
	6	56.7	65.5	52.1	64.8	64.0	61.3	59.6	56.6	55.0	52.8	52.5	52.2	56.7	10.0	66.7
Day	7	55.0	65.9	50.0	65.3	64.2	60.4	57.8	53.7	52.3	50.7	50.5	50.2	55.0	0.0	55.0
	8	57.3	69.3	49.6	68.8	67.9	63.5	59.9	55.3	53.2	50.5	50.1	49.7	57.3	0.0	57.3
	9	56.3	65.7	50.5	65.3	64.5	61.4	59.4	56.1	54.3	51.5	51.1	50.6	56.3	0.0	56.3
	10	57.6	65.2	52.3	64.7	64.1	62.2	61.1	57.9	55.9	53.4	52.9	52.5	57.6	0.0	57.6
	11	55.5	81.4	51.2	79.9	74.6	69.0	63.4	56.1	54.3	52.1	51.7	51.4	55.5	0.0	55.5
	12	55.9	66.1	49.2	65.6	64.7	62.6	60.7	54.6	52.3	50.0	49.6	49.3	55.9	0.0	55.9
	13	52.2	61.2	47.1	60.6	59.6	57.0	55.4	52.2	50.1	48.0	47.6	47.2	52.2	0.0	52.2
	14	51.2	61.9	45.5	61.5	60.6	57.0	54.4	49.9	48.1	46.3	46.0	45.7	51.2	0.0	51.2
	15	51.8	63.0	45.0	62.4	61.4	57.9	55.5	50.7	48.0	45.7	45.4	45.1	51.8	0.0	51.8
	16	57.5	67.7	46.6	67.4	66.8	64.9	62.8	56.7	51.8	47.5	47.2	46.7	57.5	0.0	57.5
	17	53.9	64.6	48.0	64.2	63.3	59.9	57.1	52.8	50.5	48.7	48.5	48.2	53.9	0.0	53.9
	18	54.6	64.2	48.5	63.6	62.7	59.9	58.3	55.0	51.9	49.3	49.0	48.7	54.6	0.0	54.6
Evening	19	54.4	62.5	49.4	62.0	61.6	59.9	58.5	54.6	52.1	50.1	49.8	49.5	54.4	5.0	59.4
	20	55.6	63.0	48.5	62.6	62.1	60.7	59.9	56.9	52.7	49.4	49.0	48.7	55.6	5.0	60.6
	21	54.5	61.7	45.9	61.4	61.0	60.0	59.3	55.8	51.2	47.1	46.6	46.1	54.5	5.0	59.5
Night	22	53.9	59.5	46.4	59.3	59.0	58.5	58.1	55.9	51.2	47.5	47.0	46.6	53.9	10.0	63.9
	23	51.0	57.5	45.5	57.1	56.9	55.9	55.1	52.3	48.4	46.3	46.0	45.7	51.0	10.0	61.0

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	51.2	61.2	45.0	60.6	59.6	57.0	54.4	49.9	48.0	45.7	45.4	45.1
	Max	57.6	81.4	52.3	79.9	74.6	69.0	63.4	57.9	55.9	53.4	52.9	52.5
Energy Average		55.4	Average:		65.8	64.5	61.3	58.8	54.2	51.9	49.5	49.1	48.8
Evening	Min	54.4	61.7	45.9	61.4	61.0	59.9	58.5	54.6	51.2	47.1	46.6	46.1
	Max	55.6	63.0	49.4	62.6	62.1	60.7	59.9	56.9	52.7	50.1	49.8	49.5
Energy Average		54.9	Average:		62.0	61.6	60.2	59.2	55.8	52.0	48.9	48.5	48.1
Night	Min	47.6	51.3	45.3	51.1	50.7	49.9	49.4	48.2	47.2	46.0	45.7	45.5
	Max	56.7	65.5	52.1	64.8	64.0	61.3	59.6	56.6	55.0	52.8	52.5	52.2
Energy Average		52.5	Average:		57.2	56.7	55.2	54.2	52.0	50.0	48.2	47.9	47.6

L_{eq} (dBA)		
24-Hour	Daytime	Nighttime
54.4	55.3	52.5

24-Hour CNEL (dBA)

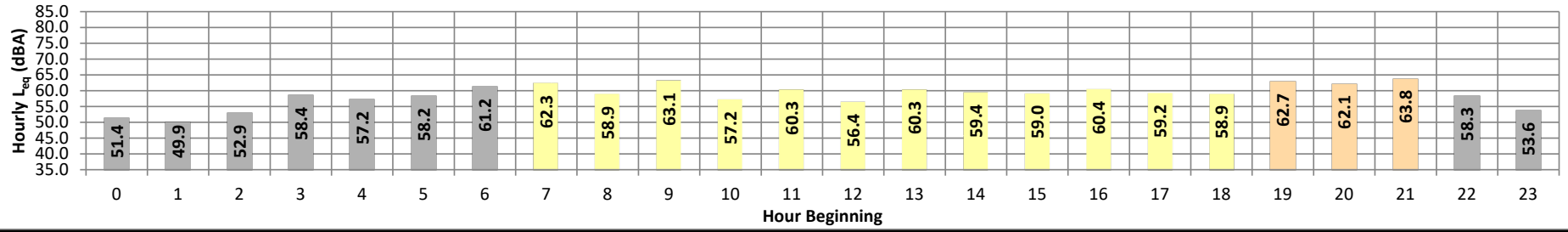
59.8

24-Hour Noise Level Measurement Summary

Date: Wednesday, April 28, 2021 *Location:* SP-L2 - Located on Maple Avenue near existing single-family residential home at 11007 Maple Avenue. *Meter:* Piccolo II *JN:* 12991

Project: Bloomington Business Park *Analyst:* P. Mara

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq}	Adj.	Adj. L_{eq}
Night	0	51.4	70.0	39.7	69.7	69.1	66.9	63.8	52.1	44.6	40.3	40.1	39.8	51.4	10.0	61.4
	1	49.9	63.0	42.4	62.6	61.5	56.7	52.5	45.0	44.0	42.9	42.7	42.5	49.9	10.0	59.9
	2	52.9	66.8	42.5	66.2	65.2	60.6	54.5	45.2	44.1	43.0	42.8	42.6	52.9	10.0	62.9
	3	58.4	67.5	43.9	67.2	66.7	64.8	63.7	60.2	51.1	44.5	44.3	44.0	58.4	10.0	68.4
	4	57.2	67.2	49.8	66.8	66.1	63.2	61.4	57.4	53.1	50.3	50.2	49.9	57.2	10.0	67.2
	5	58.2	69.2	51.6	68.7	67.8	64.6	62.3	56.6	53.5	52.1	51.9	51.7	58.2	10.0	68.2
	6	61.2	72.3	53.4	71.8	70.9	67.9	65.6	60.1	56.3	54.0	53.8	53.5	61.2	10.0	71.2
Day	7	62.3	73.0	53.9	72.6	71.5	68.4	66.3	62.4	58.1	55.0	54.6	54.1	62.3	0.0	62.3
	8	58.9	70.3	47.7	69.9	69.0	65.9	63.5	57.5	53.2	48.9	48.5	47.9	58.9	0.0	58.9
	9	63.1	79.0	56.9	78.4	76.9	72.0	68.7	64.8	61.8	58.6	57.8	57.1	63.1	0.0	63.1
	10	57.2	69.7	48.4	69.0	67.6	64.0	61.4	54.5	51.2	49.3	48.9	48.5	57.2	0.0	57.2
	11	60.3	72.9	49.1	72.4	71.4	67.8	64.9	56.3	52.2	49.8	49.5	49.2	60.3	0.0	60.3
	12	56.4	68.6	48.6	68.0	67.0	63.6	60.7	53.8	51.4	49.4	49.1	48.8	56.4	0.0	56.4
	13	60.3	73.1	44.7	72.4	71.1	67.5	65.0	57.7	51.8	46.1	45.5	44.9	60.3	0.0	60.3
	14	59.4	72.5	45.6	71.8	70.6	66.6	63.5	56.4	50.5	46.8	46.3	45.8	59.4	0.0	59.4
	15	59.0	70.7	48.4	70.2	69.2	65.8	63.2	57.2	54.1	50.6	50.0	49.0	59.0	0.0	59.0
	16	60.4	71.4	46.9	71.0	70.0	67.3	65.6	60.3	53.4	47.9	47.5	47.1	60.4	0.0	60.4
	17	59.2	71.4	46.4	70.8	69.9	66.7	64.3	56.7	50.5	47.4	47.0	46.6	59.2	0.0	59.2
	18	58.9	72.2	45.3	71.4	70.0	65.3	62.4	57.3	51.9	46.5	46.1	45.5	58.9	0.0	58.9
Evening	19	62.7	72.8	53.0	72.3	71.4	68.8	67.2	62.4	59.1	55.1	54.2	53.3	62.7	5.0	67.7
	20	62.1	71.0	53.6	70.6	69.8	67.5	66.1	62.8	59.1	55.7	54.7	54.0	62.1	5.0	67.1
	21	63.8	76.2	46.5	75.6	74.7	71.2	68.4	61.6	53.6	47.6	47.1	46.7	63.8	5.0	68.8
Night	22	58.3	69.9	45.4	69.4	68.4	64.8	62.6	58.1	51.7	46.3	46.0	45.6	58.3	10.0	68.3
	23	53.6	65.6	44.2	65.2	64.2	60.2	57.1	52.5	47.4	44.9	44.6	44.3	53.6	10.0	63.6

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	56.4	68.6	44.7	68.0	67.0	63.6	60.7	53.8	50.5	46.1	45.5	44.9
	Max	63.1	79.0	56.9	78.4	76.9	72.0	68.7	64.8	61.8	58.6	57.8	57.1
Energy Average		60.0	Average:		71.5	70.3	66.7	64.1	57.9	53.4	49.7	49.2	48.7
Evening	Min	62.1	71.0	46.5	70.6	69.8	67.5	66.1	61.6	53.6	47.6	47.1	46.7
	Max	63.8	76.2	53.6	75.6	74.7	71.2	68.4	62.8	59.1	55.7	54.7	54.0
Energy Average		62.9	Average:		72.9	72.0	69.2	67.2	62.2	57.3	52.8	52.0	51.3
Night	Min	49.9	63.0	39.7	62.6	61.5	56.7	52.5	45.0	44.0	40.3	40.1	39.8
	Max	61.2	72.3	53.4	71.8	70.9	67.9	65.6	60.2	56.3	54.0	53.8	53.5
Energy Average		57.0	Average:		67.5	66.7	63.3	60.4	54.1	49.5	46.5	46.3	46.0

L_{eq} (dBA)

24-Hour	*Daytime*	*Nighttime*
59.7	**60.8**	**57.0**

24-Hour CNEL (dBA)

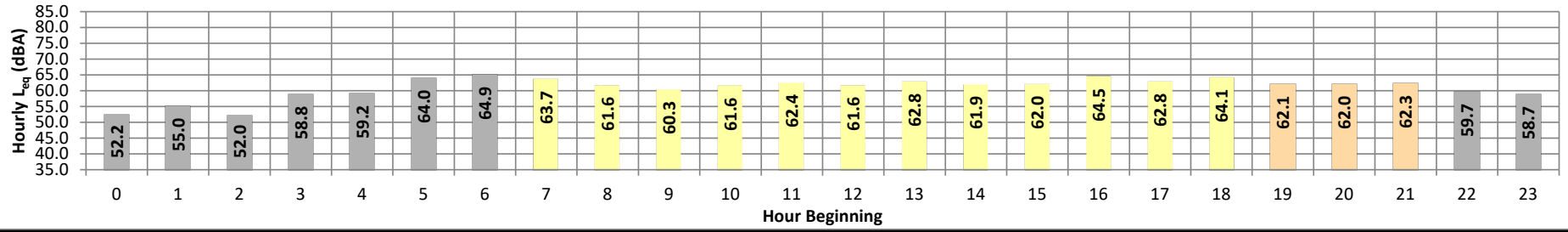
65.0

24-Hour Noise Level Measurement Summary

Date: Wednesday, April 28, 2021 *Location:* M-L2 - Located on Santa Ana Avenue near existing single-family residential home at 18234 Santa Ana Avenue. *Meter:* Piccolo II *JN:* 12991

Project: Bloomington Business Park *Analyst:* P. Mara

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq}	Adj.	Adj. L_{eq}
Night	0	52.2	63.4	42.9	63.0	62.2	59.7	57.3	50.6	45.8	43.4	43.2	42.9	52.2	10.0	62.2
	1	55.0	67.9	43.6	67.4	66.8	62.7	58.4	50.1	46.3	44.1	43.9	43.7	55.0	10.0	65.0
	2	52.0	63.2	44.3	62.8	62.1	59.3	56.7	49.5	46.4	44.8	44.6	44.4	52.0	10.0	62.0
	3	58.8	68.0	46.1	67.6	67.0	65.5	64.5	59.5	51.5	46.7	46.5	46.2	58.8	10.0	68.8
	4	59.2	69.3	50.8	68.9	68.2	65.7	64.1	58.7	54.2	51.3	51.1	50.9	59.2	10.0	69.2
	5	64.0	76.3	53.4	75.9	75.0	71.2	67.9	61.2	57.1	54.0	53.8	53.5	64.0	10.0	74.0
	6	64.9	77.9	55.3	76.9	75.4	70.7	68.3	63.7	59.6	56.1	55.7	55.3	64.9	10.0	74.9
Day	7	63.7	73.4	53.1	72.9	72.1	70.1	68.6	64.1	59.1	54.0	53.6	53.2	63.7	0.0	63.7
	8	61.6	72.2	49.6	71.8	71.0	68.8	66.9	60.7	55.5	50.8	50.2	49.8	61.6	0.0	61.6
	9	60.3	70.4	48.2	70.0	69.4	67.1	65.4	60.5	54.7	49.2	48.8	48.3	60.3	0.0	60.3
	10	61.6	71.6	53.5	71.1	70.2	67.4	65.8	61.5	58.2	54.5	54.1	53.6	61.6	0.0	61.6
	11	62.4	70.1	55.2	69.7	69.2	67.6	66.4	63.3	60.4	56.5	55.9	55.4	62.4	0.0	62.4
	12	61.6	71.0	53.7	70.6	70.0	68.0	66.1	61.5	57.9	54.6	54.2	53.8	61.6	0.0	61.6
	13	62.8	74.5	48.9	74.2	73.5	69.9	67.4	61.2	56.3	50.7	49.9	49.1	62.8	0.0	62.8
	14	61.9	72.6	49.6	72.1	71.2	68.5	66.6	61.7	57.4	51.1	50.2	49.7	61.9	0.0	61.9
	15	62.0	71.3	51.1	70.9	70.3	68.2	66.4	62.4	58.7	52.6	51.9	51.2	62.0	0.0	62.0
	16	64.5	74.1	54.5	73.7	73.1	70.6	68.9	64.6	61.1	56.1	55.4	54.6	64.5	0.0	64.5
	17	62.8	71.5	53.7	71.1	70.4	68.3	67.1	63.6	60.1	55.2	54.5	53.9	62.8	0.0	62.8
	18	64.1	74.7	53.1	74.3	73.4	70.5	68.6	63.9	60.0	54.7	53.9	53.3	64.1	0.0	64.1
Evening	19	62.1	71.5	51.0	71.0	70.2	68.1	66.9	62.7	58.2	52.4	51.7	51.1	62.1	5.0	67.1
	20	62.0	71.9	48.1	71.5	70.8	68.6	67.2	62.0	57.0	50.1	48.9	48.3	62.0	5.0	67.0
	21	62.3	70.9	47.5	70.5	69.9	68.6	67.7	63.2	57.3	49.7	48.7	47.8	62.3	5.0	67.3
Night	22	59.7	70.2	47.3	69.8	69.1	66.7	64.9	59.2	53.1	48.2	47.7	47.4	59.7	10.0	69.7
	23	58.7	71.9	45.4	71.1	69.8	66.1	63.0	55.4	49.2	46.2	45.8	45.5	58.7	10.0	68.7

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	60.3	70.1	48.2	69.7	69.2	67.1	65.4	60.5	54.7	49.2	48.8	48.3
	Max	64.5	74.7	55.2	74.3	73.5	70.6	68.9	64.6	61.1	56.5	55.9	55.4
Energy Average		62.6	Average:		71.9	71.1	68.7	67.0	62.4	58.3	53.3	52.7	52.2
Evening	Min	62.0	70.9	47.5	70.5	69.9	68.1	66.9	62.0	57.0	49.7	48.7	47.8
	Max	62.3	71.9	51.0	71.5	70.8	68.6	67.7	63.2	58.2	52.4	51.7	51.1
Energy Average		62.1	Average:		71.0	70.3	68.5	67.3	62.7	57.5	50.7	49.8	49.1
Night	Min	52.0	63.2	42.9	62.8	62.1	59.3	56.7	49.5	45.8	43.4	43.2	42.9
	Max	64.9	77.9	55.3	76.9	75.4	71.2	68.3	63.7	59.6	56.1	55.7	55.3
Energy Average		60.2	Average:		69.3	68.4	65.3	62.8	56.4	51.5	48.3	48.0	47.8

L_{eq} (dBA)		
24-Hour	Daytime	Nighttime
61.8	62.5	60.2

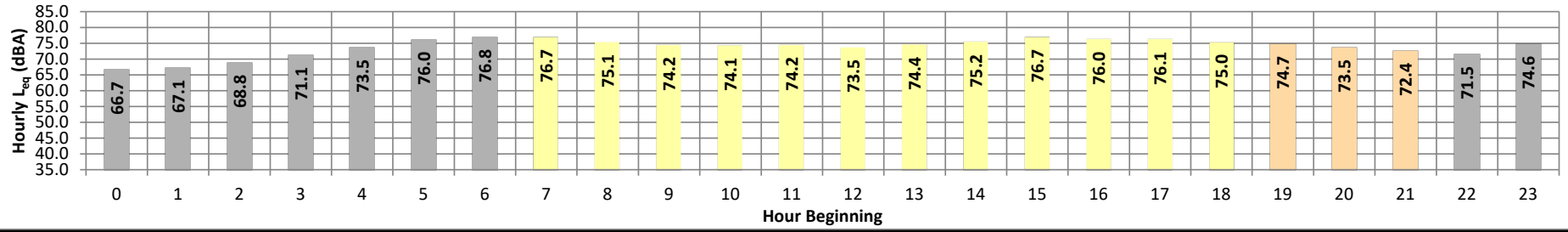
24-Hour CNEL (dBA)
67.4

24-Hour Noise Level Measurement Summary

Date: Wednesday, April 28, 2021 *Location:* SP-L4 - Located on Santa Ana Avenue near existing family residential home at 17991 Santa Ana Avenue. *Meter:* Piccolo II *JN:* 12991

Project: Bloomington Business Park *Analyst:* P. Mara

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq}	Adj.	Adj. L_{eq}
Night	0	66.7	79.6	43.5	79.1	78.2	74.9	71.8	61.1	52.3	44.8	44.1	43.7	66.7	10.0	76.7
	1	67.1	80.9	42.7	80.4	79.4	74.9	71.8	58.8	49.7	43.7	43.2	42.8	67.1	10.0	77.1
	2	68.8	82.0	44.7	81.4	80.2	76.8	74.1	63.2	54.9	45.9	45.3	44.8	68.8	10.0	78.8
	3	71.1	84.2	47.2	83.8	82.8	78.9	76.1	65.9	58.1	48.9	48.2	47.4	71.1	10.0	81.1
	4	73.5	85.0	53.9	84.5	83.6	80.8	78.8	72.4	65.2	56.1	54.8	54.1	73.5	10.0	83.5
	5	76.0	86.7	56.3	86.2	85.3	83.1	81.5	75.7	67.7	57.9	57.0	56.4	76.0	10.0	86.0
	6	76.8	86.6	58.7	86.2	85.4	83.4	82.2	77.4	70.9	61.0	59.8	58.9	76.8	10.0	86.8
Day	7	76.7	86.5	58.1	86.0	85.1	83.1	82.1	77.5	71.0	61.0	59.6	58.4	76.7	0.0	76.7
	8	75.1	85.6	53.3	85.1	84.1	81.8	80.6	75.5	68.4	56.0	54.5	53.5	75.1	0.0	75.1
	9	74.2	84.8	52.8	84.3	83.3	80.8	79.4	74.7	67.9	56.0	54.3	53.0	74.2	0.0	74.2
	10	74.1	84.7	53.6	84.1	83.2	80.7	79.3	74.4	67.8	56.0	54.9	53.7	74.1	0.0	74.1
	11	74.2	84.1	55.4	83.6	82.8	80.6	79.4	75.1	68.4	57.8	56.7	55.7	74.2	0.0	74.2
	12	73.5	83.6	54.6	83.2	82.2	79.9	78.6	74.2	68.0	58.1	56.5	54.8	73.5	0.0	73.5
	13	74.4	83.7	54.9	83.2	82.5	80.6	79.6	75.6	69.5	58.4	56.6	55.3	74.4	0.0	74.4
	14	75.2	84.8	56.4	84.3	83.3	80.8	79.7	76.4	71.9	61.0	58.8	56.7	75.2	0.0	75.2
	15	76.7	86.4	58.0	85.8	84.8	82.2	80.8	77.8	74.1	62.4	60.1	58.2	76.7	0.0	76.7
	16	76.0	84.0	59.8	83.6	82.9	81.2	80.2	77.6	73.8	64.0	62.0	60.0	76.0	0.0	76.0
	17	76.1	84.7	59.3	84.2	83.2	81.3	80.4	77.5	73.5	63.7	61.4	59.5	76.1	0.0	76.1
	18	75.0	83.5	57.0	83.1	82.3	80.5	79.6	76.5	72.1	60.8	58.7	57.2	75.0	0.0	75.0
Evening	19	74.7	85.1	56.2	84.6	83.6	80.6	79.3	75.5	70.1	60.4	58.6	56.6	74.7	5.0	79.7
	20	73.5	82.6	55.7	82.2	81.4	79.5	78.4	74.7	69.0	59.1	57.3	55.9	73.5	5.0	78.5
	21	72.4	83.2	53.1	82.7	81.7	79.1	77.5	72.4	66.5	55.7	54.3	53.3	72.4	5.0	77.4
Night	22	71.5	83.6	50.6	82.9	81.8	78.8	76.7	70.2	62.4	53.2	52.1	50.8	71.5	10.0	81.5
	23	74.6	89.7	47.3	88.9	87.8	80.8	76.4	65.1	56.3	48.8	48.2	47.5	74.6	10.0	84.6

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	73.5	83.5	52.8	83.1	82.2	79.9	78.6	74.2	67.8	56.0	54.3	53.0
	Max	76.7	86.5	59.8	86.0	85.1	83.1	82.1	77.8	74.1	64.0	62.0	60.0
Energy Average		75.2	Average:		84.2	83.3	81.1	80.0	76.1	70.5	59.6	57.8	56.3
Evening	Min	72.4	82.6	53.1	82.2	81.4	79.1	77.5	72.4	66.5	55.7	54.3	53.3
	Max	74.7	85.1	56.2	84.6	83.6	80.6	79.3	75.5	70.1	60.4	58.6	56.6
Energy Average		73.6	Average:		83.1	82.2	79.7	78.4	74.2	68.6	58.4	56.7	55.3
Night	Min	66.7	79.6	42.7	79.1	78.2	74.9	71.8	58.8	49.7	43.7	43.2	42.8
	Max	76.8	89.7	58.7	88.9	87.8	83.4	82.2	77.4	70.9	61.0	59.8	58.9
Energy Average		73.1	Average:		83.7	82.7	79.2	76.6	67.8	59.7	51.1	50.3	49.6

L_{eq} (dBA)

24-Hour	Daytime	Nighttime
74.3	**75.0**	**73.1**

24-Hour CNEL (dBA)

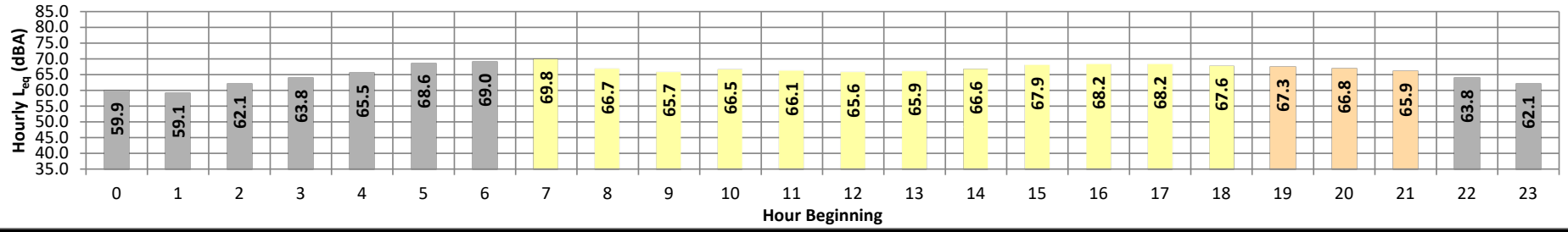
80.1

24-Hour Noise Level Measurement Summary

Date: Wednesday, April 28, 2021 *Location:* M-L5 - Located on Santa Ana Avenue and Alder Avenue by existing single-family residential home at 10866 Alder Avenue. *Meter:* Piccolo II *JN:* 12991

Project: Bloomington Business Park *Analyst:* P. Mara

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq}	Adj.	Adj. L_{eq}
Night	0	59.9	73.4	41.5	72.8	71.6	67.5	64.5	54.2	47.2	42.6	42.1	41.7	59.9	10.0	69.9
	1	59.1	72.5	43.0	71.9	70.7	67.0	63.8	53.0	46.7	43.8	43.5	43.1	59.1	10.0	69.1
	2	62.1	75.2	43.4	74.6	73.6	69.8	66.9	57.2	51.0	44.3	43.9	43.5	62.1	10.0	72.1
	3	63.8	77.0	45.4	76.2	74.8	71.3	68.9	60.1	54.0	46.4	45.9	45.5	63.8	10.0	73.8
	4	65.5	77.1	50.9	76.5	75.4	72.9	71.2	63.9	57.2	51.9	51.5	51.0	65.5	10.0	75.5
	5	68.6	79.8	53.0	79.3	78.3	75.6	73.8	68.0	61.2	53.9	53.4	53.1	68.6	10.0	78.6
	6	69.0	79.4	54.6	78.8	77.8	75.7	74.3	69.3	63.4	55.8	55.2	54.7	69.0	10.0	79.0
Day	7	69.8	81.7	52.3	81.0	79.6	76.2	74.3	69.4	63.3	54.2	53.2	52.4	69.8	0.0	69.8
	8	66.7	77.4	48.7	76.8	75.7	73.3	72.1	67.0	60.2	50.8	49.8	49.0	66.7	0.0	66.7
	9	65.7	76.5	48.3	76.0	74.9	72.2	70.7	65.8	59.6	50.9	49.7	48.5	65.7	0.0	65.7
	10	66.5	78.6	49.1	77.8	76.5	73.4	71.4	65.7	59.2	51.0	50.0	49.3	66.5	0.0	66.5
	11	66.1	77.0	50.2	76.2	75.1	72.5	71.1	66.5	60.8	52.5	51.4	50.5	66.1	0.0	66.1
	12	65.6	76.7	50.0	76.0	74.9	71.9	70.4	65.8	60.4	51.8	50.9	50.2	65.6	0.0	65.6
	13	65.9	77.2	47.2	76.4	75.3	72.4	70.7	66.1	60.3	50.0	48.6	47.4	65.9	0.0	65.9
	14	66.6	77.2	48.8	76.5	75.3	72.7	71.2	67.2	62.7	52.0	50.3	49.0	66.6	0.0	66.6
	15	67.9	78.5	51.1	77.8	76.6	73.4	72.1	68.5	64.6	55.4	53.3	51.7	67.9	0.0	67.9
	16	68.2	78.6	52.8	77.9	76.8	73.8	72.3	68.8	65.0	56.6	54.6	53.1	68.2	0.0	68.2
	17	68.2	78.0	52.6	77.3	76.2	74.0	72.6	69.1	65.2	55.6	54.0	52.8	68.2	0.0	68.2
	18	67.6	77.9	52.0	77.2	76.1	73.2	72.1	68.4	64.1	54.8	53.5	52.2	67.6	0.0	67.6
Evening	19	67.3	78.1	51.7	77.3	76.0	73.6	72.0	67.9	62.9	54.1	53.0	52.0	67.3	5.0	72.3
	20	66.8	77.3	50.7	76.6	75.3	73.0	71.6	67.5	62.5	53.6	52.1	51.0	66.8	5.0	71.8
	21	65.9	76.4	50.8	75.8	74.9	72.5	71.0	66.0	61.1	52.6	51.6	51.0	65.9	5.0	70.9
Night	22	63.8	75.2	48.3	74.5	73.3	70.9	69.2	62.8	56.7	50.4	49.1	48.5	63.8	10.0	73.8
	23	62.1	76.4	45.6	74.9	73.3	69.1	66.3	58.5	53.0	47.0	46.4	45.8	62.1	10.0	72.1

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	65.6	76.5	47.2	76.0	74.9	71.9	70.4	65.7	59.2	50.0	48.6	47.4
	Max	69.8	81.7	52.8	81.0	79.6	76.2	74.3	69.4	65.2	56.6	54.6	53.1
Energy Average		67.3	Average:		77.2	76.1	73.2	71.7	67.4	62.1	53.0	51.6	50.5
Evening	Min	65.9	76.4	50.7	75.8	74.9	72.5	71.0	66.0	61.1	52.6	51.6	51.0
	Max	67.3	78.1	51.7	77.3	76.0	73.6	72.0	67.9	62.9	54.1	53.0	52.0
Energy Average		66.7	Average:		76.6	75.4	73.0	71.5	67.1	62.1	53.4	52.3	51.3
Night	Min	59.1	72.5	41.5	71.9	70.7	67.0	63.8	53.0	46.7	42.6	42.1	41.7
	Max	69.0	79.8	54.6	79.3	78.3	75.7	74.3	69.3	63.4	55.8	55.2	54.7
Energy Average		65.0	Average:		75.5	74.3	71.1	68.8	60.8	54.5	48.5	47.9	47.5

L_{eq} (dBA)		
24-Hour	Daytime	Nighttime
66.5	67.2	65.0

24-Hour CNEL (dBA)

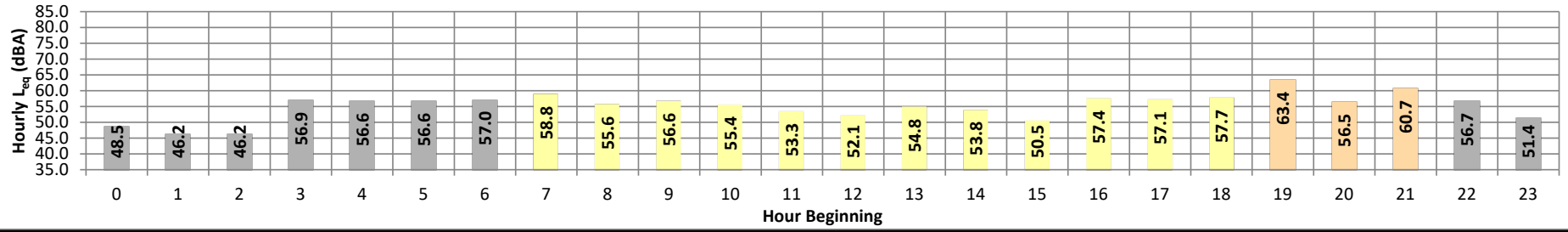
72.2

24-Hour Noise Level Measurement Summary

Date: Wednesday, April 28, 2021 *Location:* SP-L6, M-L9 - Located on Alder Avenue near existing single-family residential home at 11223 Alder Avenue. *Meter:* Piccolo II *JN:* 12991

Project: Bloomington Business Park *Analyst:* P. Mara

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq}	Adj.	Adj. L_{eq}
Night	0	48.5	57.8	41.1	57.6	57.1	55.2	54.1	47.9	43.3	41.5	41.4	41.2	48.5	10.0	58.5
	1	46.2	55.6	41.8	55.2	54.7	52.1	50.7	44.6	42.9	42.2	42.1	41.9	46.2	10.0	56.2
	2	46.2	52.7	41.7	52.3	52.1	51.4	50.7	46.8	43.6	42.2	42.0	41.8	46.2	10.0	56.2
	3	56.9	65.7	43.7	65.5	65.1	64.3	63.4	56.7	46.4	44.1	44.0	43.8	56.9	10.0	66.9
	4	56.6	64.5	49.7	64.1	63.8	62.5	61.6	57.1	52.9	50.4	50.1	49.8	56.6	10.0	66.6
	5	56.6	64.8	50.8	64.2	63.7	61.8	60.3	57.6	53.5	51.3	51.1	50.9	56.6	10.0	66.6
	6	57.0	64.5	51.3	64.1	63.6	62.3	61.4	57.7	54.6	51.8	51.6	51.3	57.0	10.0	67.0
Day	7	58.8	67.3	48.9	66.8	66.4	65.0	63.9	59.9	54.3	49.6	49.3	48.9	58.8	0.0	58.8
	8	55.6	64.2	45.7	63.7	63.2	62.0	61.1	56.4	50.5	46.5	46.2	45.9	55.6	0.0	55.6
	9	56.6	65.3	46.1	64.8	64.2	62.6	61.6	58.1	51.7	47.8	47.2	46.7	56.6	0.0	56.6
	10	55.4	64.8	50.1	64.3	63.4	60.8	58.9	55.2	53.1	50.8	50.5	50.2	55.4	0.0	55.4
	11	53.3	62.7	47.0	62.1	61.5	59.4	58.1	52.9	49.4	47.6	47.4	47.1	53.3	0.0	53.3
	12	52.1	61.6	45.8	61.2	60.7	58.3	56.2	51.9	48.7	46.5	46.2	45.9	52.1	0.0	52.1
	13	54.8	64.1	42.3	63.6	63.0	61.1	60.0	55.9	49.3	43.5	42.9	42.5	54.8	0.0	54.8
	14	53.8	63.8	42.1	63.1	62.6	60.5	58.9	54.1	48.4	43.1	42.6	42.3	53.8	0.0	53.8
	15	50.5	61.1	41.9	60.6	59.9	57.3	55.4	49.7	45.6	42.6	42.3	42.0	50.5	0.0	50.5
	16	57.4	67.9	44.7	67.5	66.6	63.9	62.1	57.6	51.6	45.9	45.3	44.9	57.4	0.0	57.4
	17	57.1	68.4	44.5	67.9	67.2	64.5	62.6	55.4	50.5	45.6	45.1	44.6	57.1	0.0	57.1
	18	57.7	68.5	45.2	68.0	67.4	64.6	63.0	56.5	50.7	46.0	45.7	45.4	57.7	0.0	57.7
Evening	19	63.4	75.4	45.9	74.8	74.0	72.3	68.9	61.4	51.7	46.9	46.5	46.1	63.4	5.0	68.4
	20	56.5	64.9	42.6	64.7	64.2	62.5	61.7	58.4	51.0	43.5	43.1	42.7	56.5	5.0	61.5
	21	60.7	68.6	43.9	68.3	68.1	67.3	66.4	61.8	54.9	45.4	44.7	44.0	60.7	5.0	65.7
Night	22	56.7	64.1	44.1	63.8	63.6	62.6	61.8	58.1	52.4	45.3	44.8	44.3	56.7	10.0	66.7
	23	51.4	60.1	43.8	59.7	59.4	57.5	56.3	52.1	46.6	44.5	44.2	43.9	51.4	10.0	61.4

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	50.5	61.1	41.9	60.6	59.9	57.3	55.4	49.7	45.6	42.6	42.3	42.0
	Max	58.8	68.5	50.1	68.0	67.4	65.0	63.9	59.9	54.3	50.8	50.5	50.2
Energy Average		55.8	Average:		64.5	63.8	61.7	60.2	55.3	50.3	46.3	45.9	45.5
Evening	Min	56.5	64.9	42.6	64.7	64.2	62.5	61.7	58.4	51.0	43.5	43.1	42.7
	Max	63.4	75.4	45.9	74.8	74.0	72.3	68.9	61.8	54.9	46.9	46.5	46.1
Energy Average		61.0	Average:		69.3	68.8	67.4	65.7	60.5	52.5	45.3	44.8	44.2
Night	Min	46.2	52.7	41.1	52.3	52.1	51.4	50.7	44.6	42.9	41.5	41.4	41.2
	Max	57.0	65.7	51.3	65.5	65.1	64.3	63.4	58.1	54.6	51.8	51.6	51.3
Energy Average		54.7	Average:		60.7	60.3	58.8	57.8	53.2	48.5	45.9	45.7	45.4

L_{eq} (dBA)		
24-Hour	Daytime	Nighttime
56.6	57.5	54.7

24-Hour CNEL (dBA)

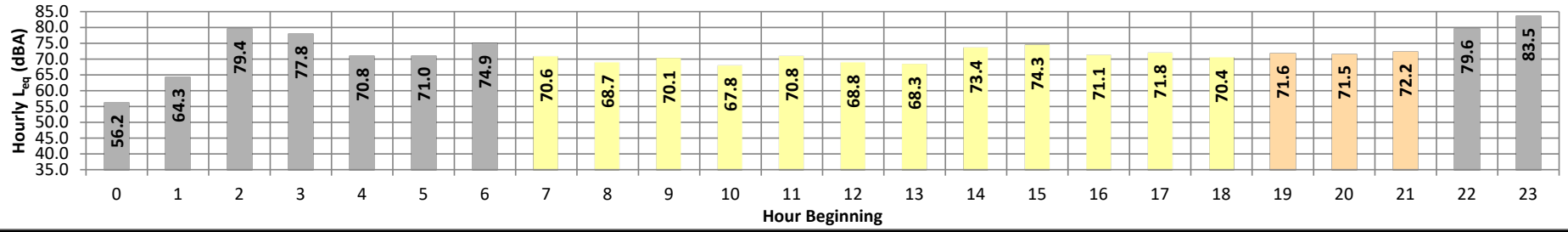
62.5

24-Hour Noise Level Measurement Summary

Date: Wednesday, April 28, 2021 *Location:* SP-L1 - Located near existing single-family residential home at 11178 Locust Avenue. *Meter:* Piccolo II *JN:* 12991

Project: Bloomington Business Park *Analyst:* P. Mara

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq}	Adj.	Adj. L_{eq}
Night	0	56.2	68.3	42.8	68.1	67.4	64.3	60.7	52.7	48.0	43.6	43.2	42.9	56.2	10.0	66.2
	1	64.3	76.9	44.4	76.3	75.4	73.0	70.8	56.2	50.4	45.7	45.1	44.5	64.3	10.0	74.3
	2	79.4	87.4	45.5	86.8	86.4	85.6	85.0	82.1	72.3	55.6	52.7	50.0	79.4	10.0	89.4
	3	77.8	83.7	47.6	83.1	82.8	82.2	81.9	80.2	76.2	63.6	61.2	58.7	77.8	10.0	87.8
	4	70.8	85.3	52.4	83.7	82.8	78.9	75.3	63.0	57.4	53.4	52.9	52.5	70.8	10.0	80.8
	5	71.0	83.1	54.6	82.4	81.4	78.8	76.7	67.2	61.3	55.7	55.2	54.8	71.0	10.0	81.0
	6	74.9	88.4	54.8	87.4	86.4	83.8	80.0	66.3	61.4	55.8	55.3	54.9	74.9	10.0	84.9
Day	7	70.6	83.5	53.4	82.4	81.3	77.8	75.4	68.3	63.3	55.5	54.6	53.6	70.6	0.0	70.6
	8	68.7	80.4	53.1	80.0	79.2	76.2	74.1	66.3	61.2	55.1	54.0	53.2	68.7	0.0	68.7
	9	70.1	83.3	50.8	82.4	81.0	78.1	75.3	66.5	60.1	52.7	51.8	51.0	70.1	0.0	70.1
	10	67.8	79.8	52.2	79.3	78.4	75.6	72.9	65.2	60.1	53.8	52.9	52.4	67.8	0.0	67.8
	11	70.8	84.8	52.1	84.0	82.7	78.4	74.2	65.5	60.1	53.7	52.9	52.2	70.8	0.0	70.8
	12	68.8	81.4	50.5	80.8	79.8	76.8	73.8	65.2	59.7	52.7	51.9	50.7	68.8	0.0	68.8
	13	68.3	80.7	50.2	80.2	79.2	75.8	72.9	65.8	60.3	52.8	51.6	50.4	68.3	0.0	68.3
	14	73.4	86.7	52.4	86.1	85.2	80.6	77.0	70.0	63.5	55.0	53.8	52.6	73.4	0.0	73.4
	15	74.3	87.1	52.9	86.8	86.0	82.6	78.7	69.1	62.5	55.6	54.7	53.2	74.3	0.0	74.3
	16	71.1	83.1	55.6	82.5	81.4	78.5	76.1	68.8	64.3	57.8	56.8	55.8	71.1	0.0	71.1
	17	71.8	84.7	54.9	83.9	82.7	79.3	76.3	68.8	64.2	57.2	56.3	55.1	71.8	0.0	71.8
	18	70.4	82.8	54.6	82.2	81.2	77.7	74.7	67.8	63.6	57.1	56.0	54.9	70.4	0.0	70.4
Evening	19	71.6	83.8	54.6	83.3	82.4	79.1	76.9	68.6	63.4	56.6	55.6	54.8	71.6	5.0	76.6
	20	71.5	84.6	52.6	84.1	83.1	79.3	75.7	67.1	61.6	54.7	53.8	52.8	71.5	5.0	76.5
	21	72.2	85.1	52.3	84.8	84.4	80.4	76.0	66.1	61.4	54.4	53.5	52.6	72.2	5.0	77.2
Night	22	79.6	88.4	49.9	87.4	86.8	84.8	83.7	81.1	78.2	52.1	51.3	50.1	79.6	10.0	89.6
	23	83.5	89.9	60.7	89.3	89.0	88.3	87.6	85.1	82.1	72.5	68.9	62.8	83.5	10.0	93.5

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	67.8	79.8	50.2	79.3	78.4	75.6	72.9	65.2	59.7	52.7	51.6	50.4
	Max	74.3	87.1	55.6	86.8	86.0	82.6	78.7	70.0	64.3	57.8	56.8	55.8
Energy Average		70.9	Average:		82.5	81.5	78.1	75.1	67.3	61.9	54.9	53.9	52.9
Evening	Min	71.5	83.8	52.3	83.3	82.4	79.1	75.7	66.1	61.4	54.4	53.5	52.6
	Max	72.2	85.1	54.6	84.8	84.4	80.4	76.9	68.6	63.4	56.6	55.6	54.8
Energy Average		71.8	Average:		84.1	83.3	79.6	76.2	67.3	62.1	55.2	54.3	53.4
Night	Min	56.2	68.3	42.8	68.1	67.4	64.3	60.7	52.7	48.0	43.6	43.2	42.9
	Max	83.5	89.9	60.7	89.3	89.0	88.3	87.6	85.1	82.1	72.5	68.9	62.8
Energy Average		77.6	Average:		82.7	82.0	80.0	78.0	70.4	65.3	55.3	54.0	52.4

L_{eq} (dBA)		
24-Hour	Daytime	Nighttime
74.7	71.1	77.6

24-Hour CNEL (dBA)

83.6

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APPENDIX 7.1:

OFF-SITE TRAFFIC NOISE CONTOURS

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Sierra Av.
Road Segment: n/o Santa Ana Av.
Project Name: Bloomington Business Par
Job Number: 12991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,540 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	2,854 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	76 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.15	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	81.00	-15.09	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-19.05	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	69.6	67.8	61.8	70.4	71.0
Medium Trucks:	65.1	63.6	57.2	55.7	64.1	64.4
Heavy Trucks:	65.5	64.1	55.0	56.3	64.6	64.8
Vehicle Noise:	73.2	71.4	68.4	63.6	72.2	72.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	180	388	836
CNEL:	90	193	417	898

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Cedar Av.
Road Segment: n/o 7th St.
Project Name: Bloomington Business Par
Job Number: 12991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,430 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	2,043 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	52.0 feet
Centerline Dist. to Observer:	52.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	46.400
Medium Trucks:	46.209
Heavy Trucks:	46.228

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.15	0.38	-1.20	-4.66	0.000	0.000
Medium Trucks:	79.45	-16.09	0.41	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-20.04	0.41	-1.20	-5.41	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	66.9	65.1	59.1	67.7	68.3
Medium Trucks:	62.6	61.1	54.7	53.2	61.6	61.9
Heavy Trucks:	63.4	62.0	53.0	54.2	62.6	62.7
Vehicle Noise:	70.6	68.9	65.7	61.1	69.6	70.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	106	227	490
CNEL:	53	113	244	525

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Cedar Av.
Road Segment: n/o Santa Ana Av.
Project Name: Bloomington Business Par
Job Number: 12991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,470 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	1,947 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	52.0 feet
Centerline Dist. to Observer:	52.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	46.400
Medium Trucks:	46.209
Heavy Trucks:	46.228

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.94	0.38	-1.20	-4.66	0.000	0.000
Medium Trucks:	79.45	-16.30	0.41	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-20.25	0.41	-1.20	-5.41	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	66.7	64.9	58.9	67.5	68.1
Medium Trucks:	62.4	60.9	54.5	52.9	61.4	61.6
Heavy Trucks:	63.2	61.8	52.8	54.0	62.4	62.5
Vehicle Noise:	70.4	68.7	65.5	60.9	69.4	69.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	102	220	474
CNEL:	51	110	236	509

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Santa Ana Av.
Road Segment: e/o Sierra Av.
Project Name: Bloomington Business Par
Job Number: 12991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,920 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	792 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	44.0 feet
Centerline Dist. to Observer:	44.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.45	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-19.69	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-23.65	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.1	62.2	60.5	54.4	63.0	63.6
Medium Trucks:	58.1	56.6	50.3	48.7	57.2	57.4
Heavy Trucks:	59.5	58.0	49.0	50.2	58.6	58.7
Vehicle Noise:	66.2	64.4	61.1	56.6	65.1	65.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	45	97	208
CNEL:	22	48	104	223

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Bloomington Business Par
Road Name: Jurupa Av. | Job Number: 12991
Road Segment: e/o Linden Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	3,490 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	349 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	52.0 feet
Centerline Dist. to Observer:	52.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	46.400
Medium Trucks:	46.209
Heavy Trucks:	46.228

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-6.01	0.38	-1.20	-4.66	0.000	0.000
Medium Trucks:	77.72	-23.25	0.41	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-27.21	0.41	-1.20	-5.41	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.7	57.8	56.0	50.0	58.6	59.2
Medium Trucks:	53.7	52.2	45.8	44.3	52.7	53.0
Heavy Trucks:	55.0	53.6	44.5	45.8	54.1	54.3
Vehicle Noise:	61.7	60.0	56.7	52.1	60.7	61.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	27	58	124
CNEL:	13	29	62	133

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + SP | Project Name: Bloomington Business Par
Road Name: Cedar Av. | Job Number: 12991
Road Segment: n/o Santa Ana Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,641 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	1,964 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	52.0 feet
Centerline Dist. to Observer:	52.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.5%	12.9%	9.6%	97.06%
Medium Trucks:	84.8%	4.9%	10.3%	1.93%
Heavy Trucks:	86.5%	2.7%	10.8%	1.02%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	46.400
Medium Trucks:	46.209
Heavy Trucks:	46.228

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.96	0.38	-1.20	-4.66	0.000	0.000
Medium Trucks:	79.45	-16.06	0.41	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-18.83	0.41	-1.20	-5.41	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	66.7	64.9	58.9	67.5	68.1
Medium Trucks:	62.6	61.1	54.7	53.2	61.6	61.9
Heavy Trucks:	64.6	63.2	54.2	55.4	63.8	63.9
Vehicle Noise:	70.8	69.1	65.7	61.2	69.8	70.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	108	233	502
CNEL:	54	116	249	537

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + SP | Project Name: Bloomington Business Par
Road Name: Sierra Av. | Job Number: 12991
Road Segment: n/o Santa Ana Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,707 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	2,871 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	76 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.5%	12.9%	9.6%	97.43%
Medium Trucks:	84.8%	4.9%	10.3%	1.83%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.17	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	81.00	-15.09	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-19.05	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	69.6	67.9	61.8	70.4	71.0
Medium Trucks:	65.1	63.6	57.2	55.7	64.1	64.4
Heavy Trucks:	65.5	64.1	55.0	56.3	64.6	64.8
Vehicle Noise:	73.2	71.5	68.4	63.6	72.2	72.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	389	838
CNEL:	90	194	418	901

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + SP | Project Name: Bloomington Business Par
Road Name: Cedar Av. | Job Number: 12991
Road Segment: n/o 7th St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,551 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	2,055 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	52.0 feet
Centerline Dist. to Observer:	52.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.5%	12.9%	9.6%	97.31%
Medium Trucks:	84.8%	4.9%	10.3%	1.86%
Heavy Trucks:	86.5%	2.7%	10.8%	0.83%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	46.400
Medium Trucks:	46.209
Heavy Trucks:	46.228

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.17	0.38	-1.20	-4.66	0.000	0.000
Medium Trucks:	79.45	-16.01	0.41	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-19.53	0.41	-1.20	-5.41	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	66.9	65.2	59.1	67.7	68.3
Medium Trucks:	62.7	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	63.9	62.5	53.5	54.7	63.1	63.2
Vehicle Noise:	70.8	69.0	65.8	61.2	69.7	70.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	108	232	500
CNEL:	54	115	249	536

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + SP
Road Name: Santa Ana Av.
Road Segment: e/o Sierra Av.
Project Name: Bloomington Business Par
Job Number: 12991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,087 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	809 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	44.0 feet
Centerline Dist. to Observer:	44.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.5%	12.9%	9.6%	97.47%
Medium Trucks:	84.8%	4.9%	10.3%	1.80%
Heavy Trucks:	86.5%	2.7%	10.8%	0.72%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.36	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-19.69	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-23.65	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	62.3	60.6	54.5	63.1	63.7
Medium Trucks:	58.1	56.6	50.3	48.7	57.2	57.4
Heavy Trucks:	59.5	58.0	49.0	50.2	58.6	58.7
Vehicle Noise:	66.2	64.5	61.2	56.7	65.2	65.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	45	98	210
CNEL:	23	49	105	225

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Opening Year
Road Name: Sierra Av.
Road Segment: n/o Santa Ana Av.
Project Name: Bloomington Business Par
Job Number: 12991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,660 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	2,966 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	76 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.31	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	81.00	-14.93	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-18.88	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.7	69.8	68.0	61.9	70.6	71.2
Medium Trucks:	65.2	63.7	57.4	55.8	64.3	64.5
Heavy Trucks:	65.7	64.2	55.2	56.5	64.8	64.9
Vehicle Noise:	73.4	71.6	68.6	63.8	72.3	72.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	185	398	858
CNEL:	92	199	428	921

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + SP
Road Name: Jurupa Av.
Road Segment: e/o Linden Av.
Project Name: Bloomington Business Par
Job Number: 12991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	3,704 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	370 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	52.0 feet
Centerline Dist. to Observer:	52.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.5%	12.9%	9.6%	95.27%
Medium Trucks:	84.8%	4.9%	10.3%	2.33%
Heavy Trucks:	86.5%	2.7%	10.8%	2.40%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	46.400
Medium Trucks:	46.209
Heavy Trucks:	46.228

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-5.85	0.38	-1.20	-4.66	0.000	0.000
Medium Trucks:	77.72	-21.97	0.41	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-21.84	0.41	-1.20	-5.41	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.8	57.9	56.2	50.1	58.7	59.4
Medium Trucks:	55.0	53.4	47.1	45.5	54.0	54.2
Heavy Trucks:	60.4	58.9	49.9	51.2	59.5	59.6
Vehicle Noise:	63.7	62.1	57.5	54.3	62.8	63.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	80	171
CNEL:	18	39	84	181

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Opening Year
Road Name: Cedar Av.
Road Segment: n/o Santa Ana Av.
Project Name: Bloomington Business Par
Job Number: 12991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,440 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	2,344 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	52.0 feet
Centerline Dist. to Observer:	52.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	46.400
Medium Trucks:	46.209
Heavy Trucks:	46.228

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.75	0.38	-1.20	-4.66	0.000	0.000
Medium Trucks:	79.45	-15.49	0.41	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-19.45	0.41	-1.20	-5.41	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.4	67.5	65.7	59.7	68.3	68.9
Medium Trucks:	63.2	61.7	55.3	53.8	62.2	62.4
Heavy Trucks:	64.0	62.6	53.6	54.8	63.2	63.3
Vehicle Noise:	71.2	69.5	66.3	61.7	70.2	70.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	116	249	537
CNEL:	58	124	267	576

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Opening Year
Road Name: Cedar Av.
Road Segment: n/o 7th St.
Project Name: Bloomington Business Par
Job Number: 12991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,290 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	2,429 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	52.0 feet
Centerline Dist. to Observer:	52.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	46.400
Medium Trucks:	46.209
Heavy Trucks:	46.228

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.90	0.38	-1.20	-4.66	0.000	0.000
Medium Trucks:	79.45	-15.34	0.41	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-19.29	0.41	-1.20	-5.41	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.5	67.6	65.9	59.8	68.4	69.1
Medium Trucks:	63.3	61.8	55.5	53.9	62.4	62.6
Heavy Trucks:	64.2	62.7	53.7	55.0	63.3	63.4
Vehicle Noise:	71.4	69.6	66.5	61.8	70.4	70.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	118	255	550
CNEL:	59	127	274	590

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Opening Year
Road Name: Jurupa Av.
Road Segment: e/o Linden Av.
Project Name: Bloomington Business Par
Job Number: 12991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,530 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	753 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	52.0 feet
Centerline Dist. to Observer:	52.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	46.400
Medium Trucks:	46.209
Heavy Trucks:	46.228

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.67	0.38	-1.20	-4.66	0.000	0.000
Medium Trucks:	77.72	-19.91	0.41	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-23.87	0.41	-1.20	-5.41	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.0	61.1	59.4	53.3	61.9	62.5
Medium Trucks:	57.0	55.5	49.1	47.6	56.1	56.3
Heavy Trucks:	58.3	56.9	47.9	49.1	57.5	57.6
Vehicle Noise:	65.0	63.3	60.0	55.5	64.0	64.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	45	96	208
CNEL:	22	48	103	222

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Opening Year
Road Name: Santa Ana Av.
Road Segment: e/o Sierra Av.
Project Name: Bloomington Business Par
Job Number: 12991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,730 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	873 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	44.0 feet
Centerline Dist. to Observer:	44.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.03	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-19.27	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-23.22	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	62.7	60.9	54.8	63.5	64.1
Medium Trucks:	58.6	57.1	50.7	49.1	57.6	57.8
Heavy Trucks:	59.9	58.5	49.4	50.7	59.0	59.2
Vehicle Noise:	66.6	64.8	61.6	57.0	65.6	66.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	48	103	222
CNEL:	24	51	111	238

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Opening Year + SP
Road Name: Sierra Av.
Road Segment: n/o Santa Ana Av.
Project Name: Bloomington Business Par
Job Number: 12991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,827 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	2,983 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	76 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.5%	12.9%	9.6%	97.43%
Medium Trucks:	84.8%	4.9%	10.3%	1.83%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.34	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	81.00	-14.93	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-18.88	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.7	69.8	68.0	62.0	70.6	71.2
Medium Trucks:	65.2	63.7	57.4	55.8	64.3	64.5
Heavy Trucks:	65.7	64.2	55.2	56.5	64.8	64.9
Vehicle Noise:	73.4	71.6	68.6	63.8	72.3	72.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	185	399	860
CNEL:	92	199	429	924

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Opening Year + SP
Road Name: Cedar Av.
Road Segment: n/o Santa Ana Av.
Project Name: Bloomington Business Par
Job Number: 12991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,611 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	2,361 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	52.0 feet
Centerline Dist. to Observer:	52.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.5%	12.9%	9.6%	97.12%
Medium Trucks:	84.8%	4.9%	10.3%	1.91%
Heavy Trucks:	86.5%	2.7%	10.8%	0.97%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	46.400
Medium Trucks:	46.209
Heavy Trucks:	46.228

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.77	0.38	-1.20	-4.66	0.000	0.000
Medium Trucks:	79.45	-15.29	0.41	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-18.23	0.41	-1.20	-5.41	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.4	67.5	65.7	59.7	68.3	68.9
Medium Trucks:	63.4	61.9	55.5	54.0	62.4	62.6
Heavy Trucks:	65.2	63.8	54.8	56.0	64.4	64.5
Vehicle Noise:	71.5	69.8	66.4	62.0	70.5	71.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	121	261	563
CNEL:	60	130	279	602

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Opening Year + SP
Road Name: Santa Ana Av.
Road Segment: e/o Sierra Av.
Project Name: Bloomington Business Par
Job Number: 12991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,897 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	890 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	44.0 feet
Centerline Dist. to Observer:	44.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.5%	12.9%	9.6%	97.47%
Medium Trucks:	84.8%	4.9%	10.3%	1.81%
Heavy Trucks:	86.5%	2.7%	10.8%	0.73%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.95	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-19.27	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-23.22	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	62.7	61.0	54.9	63.5	64.2
Medium Trucks:	58.6	57.1	50.7	49.1	57.6	57.8
Heavy Trucks:	59.9	58.5	49.4	50.7	59.0	59.2
Vehicle Noise:	66.6	64.9	61.6	57.1	65.6	66.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	48	104	224
CNEL:	24	52	111	240

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Opening Year + SP
Road Name: Cedar Av.
Road Segment: n/o 7th St.
Project Name: Bloomington Business Par
Job Number: 12991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,411 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	2,441 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	52.0 feet
Centerline Dist. to Observer:	52.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.5%	12.9%	9.6%	97.33%
Medium Trucks:	84.8%	4.9%	10.3%	1.86%
Heavy Trucks:	86.5%	2.7%	10.8%	0.81%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	46.400
Medium Trucks:	46.209
Heavy Trucks:	46.228

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.92	0.38	-1.20	-4.66	0.000	0.000
Medium Trucks:	79.45	-15.27	0.41	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-18.85	0.41	-1.20	-5.41	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	67.7	65.9	59.8	68.5	69.1
Medium Trucks:	63.4	61.9	55.5	54.0	62.4	62.7
Heavy Trucks:	64.6	63.2	54.1	55.4	63.8	63.9
Vehicle Noise:	71.5	69.8	66.5	61.9	70.5	70.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	120	260	559
CNEL:	60	129	278	599

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Opening Year + SP
Road Name: Jurupa Av.
Road Segment: e/o Linden Av.
Project Name: Bloomington Business Par
Job Number: 12991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,744 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	774 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	52.0 feet
Centerline Dist. to Observer:	52.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.5%	12.9%	9.6%	96.39%
Medium Trucks:	84.8%	4.9%	10.3%	2.07%
Heavy Trucks:	86.5%	2.7%	10.8%	1.53%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	46.400
Medium Trucks:	46.209
Heavy Trucks:	46.228

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.60	0.38	-1.20	-4.66	0.000	0.000
Medium Trucks:	77.72	-19.27	0.41	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-20.58	0.41	-1.20	-5.41	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.1	61.2	59.4	53.4	62.0	62.6
Medium Trucks:	57.7	56.1	49.8	48.2	56.7	56.9
Heavy Trucks:	61.6	60.2	51.2	52.4	60.8	60.9
Vehicle Noise:	66.1	64.4	60.4	56.6	65.1	65.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	53	114	246
CNEL:	26	56	121	260

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: General Plan Buildout
Road Name: Sierra Av.
Road Segment: n/o Santa Ana Av.
Project Name: Bloomington Business Par
Job Number: 12991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	48,580	vehicles
Peak Hour Percentage:	10.00%	
Peak Hour Volume:	4,858	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.46	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	81.00	-12.78	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-16.74	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.8	71.9	70.1	64.1	72.7	73.3
Medium Trucks:	67.4	65.9	59.5	58.0	66.4	66.7
Heavy Trucks:	67.8	66.4	57.3	58.6	67.0	67.1
Vehicle Noise:	75.5	73.8	70.7	65.9	74.5	74.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	119	257	553	1,192
CNEL:	128	276	594	1,280

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: General Plan Buildout
Road Name: Cedar Av.
Road Segment: n/o 7th St.
Project Name: Bloomington Business Par
Job Number: 12991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	44,150	vehicles
Peak Hour Percentage:	10.00%	
Peak Hour Volume:	4,415	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	48	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	52.0	feet
Centerline Dist. to Observer:	52.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	46.400
Medium Trucks:	46.209
Heavy Trucks:	46.228

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.50	0.38	-1.20	-4.66	0.000	0.000
Medium Trucks:	79.45	-12.74	0.41	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-16.70	0.41	-1.20	-5.41	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.1	70.2	68.5	62.4	71.0	71.7
Medium Trucks:	65.9	64.4	58.1	56.5	65.0	65.2
Heavy Trucks:	66.8	65.3	56.3	57.6	65.9	66.0
Vehicle Noise:	74.0	72.2	69.1	64.4	73.0	73.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	176	380	819
CNEL:	88	189	408	878

Wednesday, March 10, 2021

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: General Plan Buildout
Road Name: Cedar Av.
Road Segment: n/o Santa Ana Av.
Project Name: Bloomington Business Par
Job Number: 12991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,700	vehicles
Peak Hour Percentage:	10.00%	
Peak Hour Volume:	2,670	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	48	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	52.0	feet
Centerline Dist. to Observer:	52.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	46.400
Medium Trucks:	46.209
Heavy Trucks:	46.228

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.31	0.38	-1.20	-4.66	0.000	0.000
Medium Trucks:	79.45	-14.92	0.41	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-18.88	0.41	-1.20	-5.41	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	68.1	66.3	60.2	68.9	69.5
Medium Trucks:	63.7	62.2	55.9	54.3	62.8	63.0
Heavy Trucks:	64.6	63.2	54.1	55.4	63.7	63.9
Vehicle Noise:	71.8	70.1	66.9	62.2	70.8	71.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	126	272	586
CNEL:	63	135	292	628

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: General Plan Buildout
Road Name: Santa Ana Av.
Road Segment: e/o Sierra Av.
Project Name: Bloomington Business Par
Job Number: 12991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,520	vehicles
Peak Hour Percentage:	10.00%	
Peak Hour Volume:	2,052	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	36	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	44.0	feet
Centerline Dist. to Observer:	44.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.68	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-15.56	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-19.51	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	66.4	64.6	58.6	67.2	67.8
Medium Trucks:	62.3	60.8	54.4	52.9	61.3	61.5
Heavy Trucks:	63.6	62.2	53.1	54.4	62.7	62.9
Vehicle Noise:	70.3	68.6	65.3	60.7	69.3	69.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	85	182	393
CNEL:	42	91	195	421

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: General Plan Buildout
Road Name: Jurupa Av.
Road Segment: e/o Linden Av.
Project Name: Bloomington Business Par
Job Number: 12991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,600 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	1,360 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	52.0 feet
Centerline Dist. to Observer:	52.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.5%	12.9%	9.6%	97.42%
Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	46.400
Medium Trucks:	46.209
Heavy Trucks:	46.228

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.10	0.38	-1.20	-4.66	0.000	0.000
Medium Trucks:	77.72	-17.34	0.41	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-21.30	0.41	-1.20	-5.41	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	63.7	61.9	55.9	64.5	65.1
Medium Trucks:	59.6	58.1	51.7	50.2	58.6	58.9
Heavy Trucks:	60.9	59.5	50.4	51.7	60.1	60.2
Vehicle Noise:	67.6	65.9	62.6	58.0	66.6	67.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	66	143	308
CNEL:	33	71	153	330

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: General Plan Buildout + SP
Road Name: Cedar Av.
Road Segment: n/o Santa Ana Av.
Project Name: Bloomington Business Par
Job Number: 12991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,871 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	2,687 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	52.0 feet
Centerline Dist. to Observer:	52.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.5%	12.9%	9.6%	97.15%
Medium Trucks:	84.8%	4.9%	10.3%	1.90%
Heavy Trucks:	86.5%	2.7%	10.8%	0.94%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	46.400
Medium Trucks:	46.209
Heavy Trucks:	46.228

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.33	0.38	-1.20	-4.66	0.000	0.000
Medium Trucks:	79.45	-14.75	0.41	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-17.80	0.41	-1.20	-5.41	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	68.1	66.3	60.3	68.9	69.5
Medium Trucks:	63.9	62.4	56.0	54.5	63.0	63.2
Heavy Trucks:	65.7	64.2	55.2	56.5	64.8	64.9
Vehicle Noise:	72.1	70.3	67.0	62.5	71.0	71.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	132	283	611
CNEL:	65	141	303	653

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: General Plan Buildout + SP
Road Name: Sierra Av.
Road Segment: n/o Santa Ana Av.
Project Name: Bloomington Business Par
Job Number: 12991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	48,747 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	4,875 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	76 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.5%	12.9%	9.6%	97.43%
Medium Trucks:	84.8%	4.9%	10.3%	1.83%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.47	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	81.00	-12.78	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-16.74	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.8	71.9	70.2	64.1	72.7	73.3
Medium Trucks:	67.4	65.9	59.5	58.0	66.4	66.7
Heavy Trucks:	67.8	66.4	57.3	58.6	67.0	67.1
Vehicle Noise:	75.5	73.8	70.7	65.9	74.5	74.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	119	257	554	1,194
CNEL:	128	276	595	1,282

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: General Plan Buildout + SP
Road Name: Cedar Av.
Road Segment: n/o 7th St.
Project Name: Bloomington Business Par
Job Number: 12991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	44,271 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	4,427 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	48 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	52.0 feet
Centerline Dist. to Observer:	52.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	77.5%	12.9%	9.6%	97.37%
Medium Trucks:	84.8%	4.9%	10.3%	1.85%
Heavy Trucks:	86.5%	2.7%	10.8%	0.78%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	46.400
Medium Trucks:	46.209
Heavy Trucks:	46.228

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.51	0.38	-1.20	-4.66	0.000	0.000
Medium Trucks:	79.45	-12.70	0.41	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-16.45	0.41	-1.20	-5.41	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.2	70.3	68.5	62.4	71.1	71.7
Medium Trucks:	66.0	64.4	58.1	56.5	65.0	65.2
Heavy Trucks:	67.0	65.6	56.6	57.8	66.2	66.3
Vehicle Noise:	74.0	72.3	69.1	64.5	73.0	73.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	178	384	827
CNEL:	89	191	411	886

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: General Plan Buildout + SP
Road Name: Santa Ana Av.
Road Segment: e/o Sierra Av.
Project Name: Bloomington Business Par
Job Number: 12991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,687	vehicles
Peak Hour Percentage:	10.00%	
Peak Hour Volume:	2,069	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	36	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	44.0	feet
Centerline Dist. to Observer:	44.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	97.44%
Medium Trucks:	84.8%	4.9%	10.3%	1.83%
Heavy Trucks:	86.5%	2.7%	10.8%	0.73%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	1.72	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	77.72	-15.56	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-19.51	1.31	-1.20	*-5.50*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	68.3	66.4	64.6	58.6	67.2	67.8
Medium Trucks:	62.3	60.8	54.4	52.9	61.3	61.5
Heavy Trucks:	63.6	62.2	53.1	54.4	62.7	62.9
Vehicle Noise:	70.3	68.6	65.3	60.8	69.3	69.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	39	85	183	395
CNEL:	42	91	196	422

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: General Plan Buildout + SP
Road Name: Jurupa Av.
Road Segment: e/o Linden Av.
Project Name: Bloomington Business Par
Job Number: 12991

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,814	vehicles
Peak Hour Percentage:	10.00%	
Peak Hour Volume:	1,381	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	48	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	52.0	feet
Centerline Dist. to Observer:	52.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	77.5%	12.9%	9.6%	96.84%
Medium Trucks:	84.8%	4.9%	10.3%	1.97%
Heavy Trucks:	86.5%	2.7%	10.8%	1.18%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	46.400
Medium Trucks:	46.209
Heavy Trucks:	46.228

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-0.06	0.38	-1.20	*-4.66*	0.000	0.000
Medium Trucks:	77.72	-16.98	0.41	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-19.19	0.41	-1.20	*-5.41*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	65.6	63.7	62.0	55.9	64.5	65.1
Medium Trucks:	59.9	58.4	52.1	50.5	59.0	59.2
Heavy Trucks:	63.0	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	68.2	66.5	62.8	58.7	67.2	67.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	34	73	158	340
CNEL:	36	78	168	362

APPENDIX 9.1:

CADNAA OYD1 OPERATIONAL NOISE MODEL INPUTS

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12991 - Bloomington Business Park Specific Plan- PLD

CadnaA Noise Prediction Model: 12991_04_PLD.cna
Date: 03.05.21
Analyst: S. Shami

Calculation Configuration

Configuration	
Parameter	Value
General	
Country	(user defined)
Max. Error (dB)	0.00
Max. Search Radius (#(Unit,LEN))	2000.01
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (#(Unit,LEN))	999.99
Min. Length of Section (#(Unit,LEN))	1.01
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Reference Time Day (min)	960.00
Reference Time Night (min)	480.00
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	5.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	2
Search Radius Src	100.00
Search Radius Rcvr	100.00
Max. Distance Source - Rcvr	1000.00 1000.00
Min. Distance Rvcr - Reflector	1.00 1.00
Min. Distance Source - Reflector	0.10
Industrial (ISO 9613)	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Incl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (#(Unit,TEMP))	10
rel. Humidity (%)	70
Ground Absorption G	0.50
Wind Speed for Dir. (#(Unit,SPEED))	3.0
Roads (RLS-90)	
Strictly acc. to RLS-90	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

Receiver Noise Levels

Name	M.	ID	Level Lr			Limit. Value			Land Use			Height		Coordinates		
			Day	Night	CNEL	Day	Night	CNEL	Type	Auto	Noise Type			X	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
RECEIVERS2		P-R1	52.2	50.4	56.9	71.0	67.0	0.0				5.00	a	6210315.30	2329356.30	5.00
RECEIVERS2		P-R2	53.1	51.2	57.8	71.0	67.0	0.0				5.00	a	6210352.20	2328738.90	5.00
RECEIVERS2		P-R3	53.1	52.1	58.5	61.0	56.0	0.0				5.00	a	6211824.55	2328029.48	5.00
RECEIVERS2		P-R4	55.8	54.8	61.2	61.0	56.0	0.0				5.00	a	6211848.72	2327816.63	5.00

Point Source(s)

Name	M.	ID	Result. PWL			Lw / Li			Operating Time			K0	Height		Coordinates		
			Day	Evening	Night	Type	Value	norm.	Day	Special	Night				X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(dB)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE		TRASH09	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	0.0	5.00	a	6212879.38	2327243.78	5.00
POINTSOURCE		TRASH08	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	0.0	5.00	a	6211680.64	2328871.05	5.00
POINTSOURCE		TRASH07	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	0.0	5.00	a	6210655.01	2327527.69	5.00
POINTSOURCE		TRASH06	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	0.0	5.00	a	6211660.24	2327529.28	5.00
POINTSOURCE		TRASH05	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	0.0	5.00	a	6211956.59	2327246.73	5.00
POINTSOURCE		TRASH04	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	0.0	5.00	a	6209730.16	2329617.33	5.00
POINTSOURCE		TRASH03	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	0.0	5.00	a	6209773.80	2328680.24	5.00
POINTSOURCE		TRASH02	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	0.0	5.00	a	6210630.00	2328870.64	5.00
POINTSOURCE		TRASH01	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	0.0	5.00	a	6208937.52	2328936.59	5.00
POINTSOURCE		AC01	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6210838.28	2329053.23	50.00
POINTSOURCE		AC02	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6211506.23	2329044.80	50.00
POINTSOURCE		AC03	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6210780.79	2327383.92	50.00

Name	M.	ID	Result. PWL			Lw / Li			Operating Time			K0	Height		Coordinates		
			Day	Evening	Night	Type	Value	norm.	Day	Special	Night				X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(dB)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE		AC04	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6211539.14	2327369.27	50.00
POINTSOURCE		AC05	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6211853.02	2327447.05	50.00
POINTSOURCE		AC06	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6212982.53	2327447.05	50.00
POINTSOURCE		AC07	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6209665.71	2328574.09	50.00
POINTSOURCE		AC08	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6209679.08	2329694.34	50.00
POINTSOURCE		PARK01	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6211672.01	2327265.99	5.00
POINTSOURCE		PARK02	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6211669.43	2327317.55	5.00
POINTSOURCE		PARK03	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210777.30	2328944.53	5.00
POINTSOURCE		PARK04	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210779.88	2329011.57	5.00
POINTSOURCE		PARK05	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6211682.33	2328975.47	5.00
POINTSOURCE		PARK06	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6211566.30	2328975.47	5.00
POINTSOURCE		PARK07	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210857.23	2329155.96	5.00
POINTSOURCE		PARK08	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210669.01	2329155.96	5.00
POINTSOURCE		PARK09	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210642.78	2328984.64	5.00
POINTSOURCE		PARK10	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210570.70	2328989.78	5.00
POINTSOURCE		PARK11	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209818.96	2329669.44	5.00
POINTSOURCE		PARK12	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209757.17	2329672.01	5.00
POINTSOURCE		PARK13	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210323.55	2328441.43	5.00
POINTSOURCE		PARK14	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210156.21	2328438.85	5.00
POINTSOURCE		PARK15	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210024.91	2328441.43	5.00
POINTSOURCE		PARK16	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209875.59	2328441.43	5.00
POINTSOURCE		PARK17	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210980.03	2329159.70	5.00
POINTSOURCE		PARK18	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210761.20	2329159.70	5.00
POINTSOURCE		PARK19	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210568.12	2329159.70	5.00
POINTSOURCE		PARK20	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210066.10	2329028.40	5.00
POINTSOURCE		PARK21	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210218.00	2329028.40	5.00
POINTSOURCE		PARK22	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209211.39	2328662.83	5.00
POINTSOURCE		PARK23	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209206.24	2328750.36	5.00
POINTSOURCE		PARK24	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209211.39	2328843.04	5.00
POINTSOURCE		PARK25	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209213.96	2328920.27	5.00
POINTSOURCE		PARK26	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209216.54	2329051.57	5.00
POINTSOURCE		PARK27	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209213.96	2329144.25	5.00
POINTSOURCE		PARK28	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209216.54	2329234.36	5.00
POINTSOURCE		PARK29	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209219.11	2329332.19	5.00
POINTSOURCE		PARK30	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209224.26	2329424.87	5.00
POINTSOURCE		PARK31	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209221.69	2329556.16	5.00
POINTSOURCE		PARK32	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209221.69	2329682.31	5.00
POINTSOURCE		PARK33	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210811.64	2327315.51	5.00
POINTSOURCE		PARK34	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210924.35	2327314.51	5.00
POINTSOURCE		PARK35	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6211003.65	2327314.01	5.00
POINTSOURCE		PARK36	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6211099.90	2327313.51	5.00
POINTSOURCE		PARK37	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6211264.97	2327311.02	5.00
POINTSOURCE		PARK38	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6211369.70	2327309.02	5.00
POINTSOURCE		PARK39	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6211510.34	2327308.02	5.00
POINTSOURCE		PARK40	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210231.85	2329255.67	5.00
POINTSOURCE		PARK41	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210347.18	2329183.59	5.00
POINTSOURCE		PARK42	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210354.39	2329041.83	5.00
POINTSOURCE		PARK43	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210350.78	2328943.31	5.00
POINTSOURCE		PARK44	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210246.26	2328849.61	5.00
POINTSOURCE		PARK45	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210109.31	2328853.21	5.00
POINTSOURCE		PARK46	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209937.51	2328854.41	5.00
POINTSOURCE		PARK47	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210283.51	2328580.50	5.00
POINTSOURCE		PARK48	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210148.95	2328582.90	5.00
POINTSOURCE		PARK49	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210018.00	2328588.91	5.00
POINTSOURCE		PARK50	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209911.08	2328586.51	5.00
POINTSOURCE		PARK51	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6211885.75	2327772.15	5.00
POINTSOURCE		PARK52	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6211982.74	2327772.99	5.00
POINTSOURCE		PARK53	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212078.88	2327769.62	5.00
POINTSOURCE		PARK54	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212178.40	2327771.31	5.00
POINTSOURCE		PARK55	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212282.98	2327770.46	5.00
POINTSOURCE		PARK56	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212377.44	2327767.93	5.00
POINTSOURCE		PARK57	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212482.02	2327770.46	5.00
POINTSOURCE		PARK58	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212582.38	2327767.93	5.00
POINTSOURCE		PARK59	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212682.74	2327767.09	5.00
POINTSOURCE		PARK60	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212780.57	2327767.93	5.00
POINTSOURCE		PARK61	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212882.62	2327767.09	5.00
POINTSOURCE		PARK62	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212981.29	2327767.09	5.00

Line Source(s)

Name	M.	ID	Result. PWL			Result. PWL'			Lw / Li			Operating Time			Moving Pt. Src				Height
			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Special	Night	Number			Speed	
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	Day	Evening	Night	(mph)	(ft)
LINESOURCE		DWY01	92.4	77.7	83.4	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY02	96.6	81.9	87.6	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY03	95.7	81.1	86.8	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY04	92.2	77.6	83.2	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8

Name	M.	ID	Result. PWL			Result. PWL'			Lw / Li			Operating Time			Moving Pt. Src				Height
			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Special	Night	Number			Speed	
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	Day	Evening	Night	(mph)	(ft)
LINESOURCE		DWY05	98.1	83.4	89.1	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY06	90.4	75.8	81.4	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY07	99.0	84.4	90.0	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY08	89.7	75.1	80.7	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY09	96.4	81.7	87.4	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY10	89.7	75.1	80.7	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY11	85.6	71.0	76.6	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8

Name	Height			Coordinates			
	Begin		End	x	y	z	Ground
	(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
LINESOURCE	8.00	a		6209796.52	2329585.11	8.00	0.00
				6209903.87	2329584.85	8.00	0.00
				6209905.07	2329698.98	8.00	0.00
				6209995.05	2329696.56	8.00	0.00
LINESOURCE	8.00	a		6209753.64	2328660.30	8.00	0.00
				6209751.30	2328512.02	8.00	0.00
				6210418.75	2328508.33	8.00	0.00
LINESOURCE	8.00	a		6209751.30	2328512.02	8.00	0.00
				6209298.38	2328516.83	8.00	0.00
				6209249.12	2328533.65	8.00	0.00
				6209219.09	2328566.08	8.00	0.00
				6209199.87	2328584.10	8.00	0.00
				6209097.69	2328586.49	8.00	0.00
LINESOURCE	8.00	a		6211736.63	2329095.90	8.00	0.00
				6211631.45	2329092.28	8.00	0.00
				6211627.78	2328897.56	8.00	0.00
LINESOURCE	8.00	a		6211631.45	2329092.28	8.00	0.00
				6210473.67	2329106.75	8.00	0.00
LINESOURCE	8.00	a		6210724.54	2329103.62	8.00	0.00
				6210722.08	2328904.54	8.00	0.00
LINESOURCE	8.00	a		6210706.48	2327508.89	8.00	0.00
				6210702.42	2327275.11	8.00	0.00
				6210706.91	2327263.64	8.00	0.00
				6210714.39	2327257.16	8.00	0.00
				6210725.36	2327251.17	8.00	0.00
				6210732.84	2327245.69	8.00	0.00
				6211601.11	2327239.20	8.00	0.00
				6211606.09	2327248.68	8.00	0.00
				6211609.09	2327268.63	8.00	0.00
				6211611.08	2327406.77	8.00	0.00
				6211726.28	2327407.77	8.00	0.00
LINESOURCE	8.00	a		6211938.28	2327325.92	8.00	0.00
				6211913.67	2327325.58	8.00	0.00
				6211894.36	2327326.74	8.00	0.00
				6211878.23	2327334.23	8.00	0.00
				6211863.53	2327350.08	8.00	0.00
				6211850.28	2327362.18	8.00	0.00
				6211839.91	2327373.41	8.00	0.00
				6211819.74	2327383.79	8.00	0.00
				6211791.50	2327386.96	8.00	0.00
LINESOURCE	8.00	a		6209903.87	2329584.85	8.00	0.00
				6209893.62	2328907.40	8.00	0.00
				6209788.19	2328904.83	8.00	0.00
LINESOURCE	8.00	a		6212902.09	2327321.74	8.00	0.00
				6212923.04	2327323.59	8.00	0.00
				6212946.29	2327322.98	8.00	0.00
				6212970.14	2327331.54	8.00	0.00
				6212983.60	2327340.72	8.00	0.00
				6212994.62	2327354.79	8.00	0.00
				6213002.57	2327365.80	8.00	0.00
				6213012.36	2327376.20	8.00	0.00
				6213028.26	2327383.54	8.00	0.00
				6213046.61	2327384.14	8.00	0.00
LINESOURCE	8.00	a		6212424.43	2327259.16	8.00	0.00
				6212423.90	2327193.89	8.00	0.00

Area Source(s)

Name	M.	ID	Result. PWL			Result. PWL''			Lw / Li			Operating Time			Height
			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Special	Night	(ft)
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	
AREASOURCE		DOCK01	103.4	103.4	103.4	58.6	58.6	58.6	Lw	103.4		900.00	0.00	540.00	8
AREASOURCE		DOCK02	103.4	103.4	103.4	59.6	59.6	59.6	Lw	103.4		900.00	0.00	540.00	8
AREASOURCE		DOCK03	103.4	103.4	103.4	61.3	61.3	61.3	Lw	103.4		900.00	0.00	540.00	8
AREASOURCE		DOCK04	103.4	103.4	103.4	61.5	61.5	61.5	Lw	103.4		900.00	0.00	540.00	8
AREASOURCE		DOCK05	103.4	103.4	103.4	58.0	58.0	58.0	Lw	103.4		900.00	0.00	540.00	8

Name	Height				Coordinates			
	Begin		End		x	y	z	Ground
	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
AREASOURCE	8.00	a			6210820.61	2328905.49	8.00	0.00
					6210804.14	2327506.61	8.00	0.00
					6210623.01	2327505.53	8.00	0.00
					6210624.33	2327645.78	8.00	0.00
					6210567.88	2327644.90	8.00	0.00
					6210578.02	2328907.15	8.00	0.00
AREASOURCE	8.00	a			6211515.60	2327499.64	8.00	0.00
					6211534.83	2328899.68	8.00	0.00
					6211717.61	2328897.96	8.00	0.00
					6211703.28	2327499.78	8.00	0.00
AREASOURCE	8.00	a			6211940.00	2327413.05	8.00	0.00
					6212901.47	2327413.61	8.00	0.00
					6212902.71	2327231.37	8.00	0.00
					6212464.66	2327233.85	8.00	0.00
					6212464.66	2327258.60	8.00	0.00
					6212376.81	2327259.83	8.00	0.00
					6212375.57	2327227.66	8.00	0.00
					6211936.29	2327225.19	8.00	0.00
AREASOURCE	8.00	a			6209654.51	2329609.67	8.00	0.00
					6209797.84	2329611.04	8.00	0.00
					6209794.22	2329539.87	8.00	0.00
					6209849.71	2329537.46	8.00	0.00
					6209843.68	2328940.34	8.00	0.00
					6209788.19	2328940.34	8.00	0.00
					6209788.19	2328858.31	8.00	0.00
					6209842.48	2328858.31	8.00	0.00
					6209843.68	2328823.33	8.00	0.00
					6209774.41	2328822.12	8.00	0.00
					6209773.72	2328660.48	8.00	0.00
					6209644.61	2328659.34	8.00	0.00
AREASOURCE	8.00	a			6208475.51	2329147.10	8.00	0.00
					6209023.27	2329145.24	8.00	0.00
					6209019.85	2329005.13	8.00	0.00
					6209018.25	2328950.87	8.00	0.00
					6209073.73	2328949.85	8.00	0.00
					6209071.69	2328612.52	8.00	0.00
					6209014.50	2328611.50	8.00	0.00
					6209015.89	2328486.61	8.00	0.00
					6208470.17	2328489.52	8.00	0.00

Barrier(s)

Name	M.	ID	Absorption		Z-Ext.	Cantilever		Height			Coordinates			
			left	right		horz.	vert.	Begin		End	x	y	z	Ground
					(ft)	(ft)	(ft)	(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
BARRIERTEMP		0						9.00	a		6209019.85	2329005.13	9.00	0.00
											6209023.27	2329145.24	9.00	0.00
											6208475.51	2329147.10	9.00	0.00
											6208470.17	2328489.52	9.00	0.00
											6209015.89	2328486.61	9.00	0.00
											6209017.01	2328559.29	9.00	0.00
BARRIERTEMP		0						9.00	a		6209014.84	2328599.58	9.00	0.00
											6209014.50	2328611.50	9.00	0.00
											6209071.69	2328612.52	9.00	0.00
											6209073.73	2328949.85	9.00	0.00
											6209018.25	2328950.87	9.00	0.00
											6209018.25	2328964.49	9.00	0.00
BARRIERTEMP		0						14.00	a		6211567.63	2327497.37	14.00	0.00
											6211603.17	2327496.72	14.00	0.00
BARRIERTEMP		0						14.00	a		6211637.24	2327499.73	14.00	0.00
											6211703.28	2327499.78	14.00	0.00
											6211717.61	2328897.96	14.00	0.00
											6211645.99	2328899.26	14.00	0.00
BARRIERTEMP		0						14.00	a		6211611.63	2328899.69	14.00	0.00
											6211534.83	2328899.68	14.00	0.00
BARRIERTEMP		0						14.00	a		6210820.63	2328906.70	14.00	0.00
											6210742.97	2328907.15	14.00	0.00
BARRIERTEMP		0						14.00	a		6210705.92	2328906.71	14.00	0.00
											6210578.02	2328907.15	14.00	0.00
											6210574.49	2328522.13	14.00	0.00
BARRIERTEMP		0						14.00	a		6210575.38	2328483.31	14.00	0.00
											6210567.88	2327644.90	14.00	0.00
											6210624.33	2327645.78	14.00	0.00
											6210623.01	2327505.53	14.00	0.00
											6210694.46	2327505.09	14.00	0.00
BARRIERTEMP		0						14.00	a		6210804.14	2327506.61	14.00	0.00
											6210727.09	2327506.85	14.00	0.00

Building(s)

Name	M.	ID	RB	Residents	Absorption	Height		Coordinates			
						Begin		x	y	z	Ground
						(ft)		(ft)	(ft)	(ft)	(ft)
BUILDING		BUILDING00001	x	0		45.00	a	6210822.62	2329076.35	45.00	0.00
								6211537.19	2329071.36	45.00	0.00
								6211515.57	2327497.42	45.00	0.00
								6211567.63	2327497.37	45.00	0.00
								6211562.59	2327327.89	45.00	0.00
								6210755.80	2327339.03	45.00	0.00
								6210754.57	2327507.32	45.00	0.00
								6210804.14	2327506.61	45.00	0.00
BUILDING		BUILDING00002	x	0		45.00	a	6211824.22	2327736.32	45.00	0.00
								6213019.08	2327733.72	45.00	0.00
								6213017.77	2327424.08	45.00	0.00
								6212981.92	2327421.48	45.00	0.00
								6212983.88	2327413.65	45.00	0.00
								6211857.46	2327413.00	45.00	0.00
								6211858.11	2327425.39	45.00	0.00
								6211822.26	2327425.39	45.00	0.00
BUILDING		BUILDING00003	x	0		45.00	a	6209253.59	2329727.23	45.00	0.00
								6209706.48	2329723.51	45.00	0.00
								6209706.48	2329610.91	45.00	0.00
								6209654.51	2329609.67	45.00	0.00
								6209644.61	2328659.34	45.00	0.00
								6209695.34	2328659.34	45.00	0.00
								6209692.87	2328551.69	45.00	0.00
								6209284.52	2328550.45	45.00	0.00
								6209283.29	2328607.37	45.00	0.00
								6209244.93	2328609.85	45.00	0.00

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APPENDIX 9.2:

CADNAA OYD2 OPERATIONAL NOISE MODEL INPUTS

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12991 - Bloomington Business Park Specific Plan- PLD

CadnaA Noise Prediction Model: 12991_04_MRIDA.cna
Date: 03.05.21
Analyst: S. Shami

Calculation Configuration

Configuration	
Parameter	Value
General	
Country	(user defined)
Max. Error (dB)	0.00
Max. Search Radius (#(Unit,LEN))	2000.01
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (#(Unit,LEN))	999.99
Min. Length of Section (#(Unit,LEN))	1.01
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Reference Time Day (min)	960.00
Reference Time Night (min)	480.00
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	5.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	2
Search Radius Src	100.00
Search Radius Rcvr	100.00
Max. Distance Source - Rcvr	1000.00 1000.00
Min. Distance Rvcr - Reflector	1.00 1.00
Min. Distance Source - Reflector	0.10
Industrial (ISO 9613)	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Incl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (#(Unit,TEMP))	10
rel. Humidity (%)	70
Ground Absorption G	0.50
Wind Speed for Dir. (#(Unit,SPEED))	3.0
Roads (RLS-90)	
Strictly acc. to RLS-90	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

Receiver Noise Levels

Name	M.	ID	Level Lr			Limit. Value			Land Use			Height		Coordinates		
			Day	Night	CNEL	Day	Night	CNEL	Type	Auto	Noise Type			X	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
RECEIVERS		M-R1	51.8	49.8	56.4	59.0	55.0	0.0				5.00	a	6209085.24	2329695.58	5.00
RECEIVERS		M-R2	50.7	46.6	53.6	63.0	60.0	0.0				5.00	a	6209676.52	2329872.45	5.00
RECEIVERS		M-R3	52.9	50.5	57.2	71.0	67.0	0.0				5.00	a	6210511.59	2329617.24	5.00
RECEIVERS		M-R4	49.0	45.7	52.6	59.0	56.0	0.0				5.00	a	6211644.77	2329342.53	5.00
RECEIVERS		M-R5	49.9	47.8	54.4	67.0	65.0	0.0				5.00	a	6211822.18	2328712.96	5.00
RECEIVERS		M-R6	52.0	48.3	55.3	57.0	54.0	0.0				5.00	a	6212891.19	2328558.88	5.00
RECEIVERS		M-R7	48.0	45.6	52.3	68.0	62.0	0.0				5.00	a	6213126.07	2327054.66	5.00
RECEIVERS		M-R8	47.7	43.2	50.4	59.0	55.0	0.0				5.00	a	6212357.84	2326964.81	5.00
RECEIVERS		M-R9	52.0	50.4	56.9	58.0	55.0	0.0				5.00	a	6210361.40	2328187.64	5.00
RECEIVERS		M-R10	50.9	49.0	55.6	55.0	53.0	0.0				5.00	a	6209028.59	2328394.59	5.00

Point Source(s)

Name	M.	ID	Result. PWL			Lw / Li			Operating Time			K0	Height		Coordinates		
			Day	Evening	Night	Type	Value	norm.	Day	Special	Night				X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(dB)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE		TRASH13	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	0.0	5.00	a	6211688.45	2328878.34	5.00
POINTSOURCE		TRASH12	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	0.0	5.00	a	6210658.65	2327526.87	5.00
POINTSOURCE		TRASH11	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	0.0	5.00	a	6211665.88	2327525.09	5.00
POINTSOURCE		TRASH10	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	0.0	5.00	a	6210366.78	2329479.02	5.00
POINTSOURCE		TRASH09	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	0.0	5.00	a	6209205.71	2329489.25	5.00
POINTSOURCE		TRASH08	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	0.0	5.00	a	6209200.60	2328745.14	5.00

Name	M.	ID	Result. PWL			Lw / Li			Operating Time			K0	Height		Coordinates		
			Day	Evening	Night	Type	Value	norm.	Day	Special	Night				X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(dB)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE		TRASH07	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	0.0	5.00	a	6210364.59	2328733.46	5.00
POINTSOURCE		TRASH06	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	0.0	5.00	a	6210613.41	2328885.00	5.00
POINTSOURCE		TRASH05	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	0.0	5.00	a	6212990.18	2328143.99	5.00
POINTSOURCE		TRASH04	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	0.0	5.00	a	6212990.18	2327537.70	5.00
POINTSOURCE		TRASH03	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	0.0	5.00	a	6211860.52	2328150.89	5.00
POINTSOURCE		TRASH02	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	0.0	5.00	a	6211865.70	2327542.88	5.00
POINTSOURCE		TRASH01	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	0.0	5.00	a	6208931.16	2328931.64	5.00
POINTSOURCE		AC01	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6209403.01	2328648.02	50.00
POINTSOURCE		AC02	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6210163.64	2328637.70	50.00
POINTSOURCE		AC03	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6210171.38	2329583.98	50.00
POINTSOURCE		AC04	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6209410.74	2329591.72	50.00
POINTSOURCE		AC05	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6212823.39	2327387.72	50.00
POINTSOURCE		AC06	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6212041.48	2327389.97	50.00
POINTSOURCE		AC07	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6212038.11	2328286.63	50.00
POINTSOURCE		AC08	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6212815.52	2328297.88	50.00
POINTSOURCE		AC09	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6210838.28	2329053.23	50.00
POINTSOURCE		AC10	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6211506.23	2329044.80	50.00
POINTSOURCE		AC11	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6210780.79	2327383.92	50.00
POINTSOURCE		AC12	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6211539.14	2327369.27	50.00
POINTSOURCE		PARK01	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6211866.14	2327454.76	5.00
POINTSOURCE		PARK02	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209856.81	2328560.35	5.00
POINTSOURCE		PARK03	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6211679.75	2327245.36	5.00
POINTSOURCE		PARK04	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6211677.17	2327320.13	5.00
POINTSOURCE		PARK05	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210676.75	2329158.54	5.00
POINTSOURCE		PARK06	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210854.66	2329155.96	5.00
POINTSOURCE		PARK07	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210787.62	2328941.96	5.00
POINTSOURCE		PARK08	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210785.04	2329027.04	5.00
POINTSOURCE		PARK09	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210310.61	2328599.03	5.00
POINTSOURCE		PARK10	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210313.19	2328676.38	5.00
POINTSOURCE		PARK11	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210140.44	2328552.61	5.00
POINTSOURCE		PARK12	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210019.25	2328555.19	5.00
POINTSOURCE		PARK13	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209952.21	2328557.77	5.00
POINTSOURCE		PARK14	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209715.00	2328560.35	5.00
POINTSOURCE		PARK15	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209627.33	2328557.77	5.00
POINTSOURCE		PARK16	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209542.24	2328570.66	5.00
POINTSOURCE		PARK17	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209431.37	2328568.09	5.00
POINTSOURCE		PARK18	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209230.26	2328666.07	5.00
POINTSOURCE		PARK19	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210323.50	2329622.66	5.00
POINTSOURCE		PARK20	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210320.92	2329700.01	5.00
POINTSOURCE		PARK21	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210140.44	2329656.18	5.00
POINTSOURCE		PARK22	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210029.56	2329656.18	5.00
POINTSOURCE		PARK23	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209959.95	2329658.75	5.00
POINTSOURCE		PARK24	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209861.97	2329658.75	5.00
POINTSOURCE		PARK25	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209717.58	2329663.91	5.00
POINTSOURCE		PARK26	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209647.96	2329663.91	5.00
POINTSOURCE		PARK27	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209557.71	2329663.91	5.00
POINTSOURCE		PARK28	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209431.37	2329666.49	5.00
POINTSOURCE		PARK29	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209263.78	2329635.55	5.00
POINTSOURCE		PARK30	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209258.62	2329707.74	5.00
POINTSOURCE		PARK31	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212069.09	2327320.13	5.00
POINTSOURCE		PARK32	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212185.12	2327320.13	5.00
POINTSOURCE		PARK33	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212277.94	2327317.55	5.00
POINTSOURCE		PARK34	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212566.72	2327314.98	5.00
POINTSOURCE		PARK35	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212664.70	2327317.55	5.00
POINTSOURCE		PARK36	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212775.57	2327320.13	5.00
POINTSOURCE		PARK37	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212999.90	2327451.63	5.00
POINTSOURCE		PARK38	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6211695.22	2328972.90	5.00
POINTSOURCE		PARK39	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6211568.88	2328978.05	5.00
POINTSOURCE		PARK40	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6211904.23	2328239.38	5.00
POINTSOURCE		PARK41	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6211904.23	2328320.38	5.00
POINTSOURCE		PARK42	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212959.52	2328240.50	5.00
POINTSOURCE		PARK43	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212958.40	2328314.76	5.00
POINTSOURCE		PARK44	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212779.52	2328360.88	5.00
POINTSOURCE		PARK45	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212673.76	2328359.76	5.00
POINTSOURCE		PARK46	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212589.38	2328360.88	5.00
POINTSOURCE		PARK47	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212508.38	2328358.63	5.00
POINTSOURCE		PARK48	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212282.24	2328363.13	5.00
POINTSOURCE		PARK49	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212193.37	2328365.38	5.00
POINTSOURCE		PARK50	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212081.99	2328366.51	5.00
POINTSOURCE		PARK51	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210642.78	2328984.64	5.00
POINTSOURCE		PARK52	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210570.70	2328989.78	5.00
POINTSOURCE		PARK53	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210980.03	2329159.70	5.00
POINTSOURCE		PARK54	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210761.20	2329159.70	5.00
POINTSOURCE		PARK55	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210568.12	2329159.70	5.00
POINTSOURCE		PARK56	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210811.64	2327315.51	5.00
POINTSOURCE		PARK57	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210924.35	2327314.51	5.00
POINTSOURCE		PARK58	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6211003.65	2327314.01	5.00

Name	M.	ID	Result. PWL			Lw / Li			Operating Time			K0	Height		Coordinates		
			Day	Evening	Night	Type	Value	norm.	Day	Special	Night				X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(dB)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE		PARK59	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6211099.90	2327313.51	5.00
POINTSOURCE		PARK60	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6211264.97	2327311.02	5.00
POINTSOURCE		PARK61	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6211369.70	2327309.02	5.00
POINTSOURCE		PARK62	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6211510.34	2327308.02	5.00

Line Source(s)

Name	M.	ID	Result. PWL			Result. PWL'			Lw / Li			Operating Time			Moving Pt. Src				Height
			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Special	Night	Number			Speed	
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	Day	Evening	Night	(mph)	(ft)
LINESOURCE		DWY01	92.2	77.6	83.2	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY02	98.1	83.4	89.1	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY03	90.4	75.8	81.4	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY04	99.0	84.4	90.0	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY05	93.2	78.5	84.2	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY06	98.0	83.4	89.0	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY07	89.5	74.9	80.5	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY08	91.4	76.8	82.4	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY09	98.3	83.7	89.3	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY10	89.7	75.1	80.7	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY11	87.1	72.4	78.1	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY12	93.5	78.9	84.5	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY13	97.8	83.1	88.8	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY14	90.7	76.1	81.8	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY15	86.3	71.6	77.3	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY16	90.6	76.0	81.6	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY17	98.4	83.8	89.5	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY18	89.9	75.2	80.9	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY19	86.6	72.0	77.6	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8

Name	Height				Coordinates			
	Begin		End		x	y	z	Ground
	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
LINESOURCE	8.00	a			6211736.63	2329095.90	8.00	0.00
					6211631.45	2329092.28	8.00	0.00
					6211627.78	2328897.56	8.00	0.00
LINESOURCE	8.00	a			6211631.45	2329092.28	8.00	0.00
					6210473.67	2329106.75	8.00	0.00
LINESOURCE	8.00	a			6210724.54	2329103.62	8.00	0.00
					6210722.08	2328904.54	8.00	0.00
LINESOURCE	8.00	a			6210706.48	2327508.89	8.00	0.00
					6210702.42	2327275.11	8.00	0.00
					6210706.91	2327263.64	8.00	0.00
					6210714.39	2327257.16	8.00	0.00
					6210725.36	2327251.17	8.00	0.00
					6210732.84	2327245.69	8.00	0.00
					6211601.11	2327239.20	8.00	0.00
					6211606.09	2327248.68	8.00	0.00
					6211609.09	2327268.63	8.00	0.00
					6211611.08	2327406.77	8.00	0.00
					6211726.28	2327407.77	8.00	0.00
LINESOURCE	8.00	a			6212893.09	2328202.41	8.00	0.00
					6212893.09	2328415.75	8.00	0.00
					6213053.82	2328405.79	8.00	0.00
LINESOURCE	8.00	a			6212893.09	2328415.75	8.00	0.00
					6212551.46	2328421.26	8.00	0.00
					6212351.99	2328421.26	8.00	0.00
					6211965.17	2328421.26	8.00	0.00
					6211965.22	2328203.92	8.00	0.00
LINESOURCE	8.00	a			6211965.17	2328421.26	8.00	0.00
					6211804.27	2328404.73	8.00	0.00
LINESOURCE	8.00	a			6212892.97	2327483.29	8.00	0.00
					6212893.09	2327384.24	8.00	0.00
					6213044.57	2327389.64	8.00	0.00
LINESOURCE	8.00	a			6212893.09	2327384.24	8.00	0.00
					6212889.79	2327308.19	8.00	0.00
					6212883.18	2327282.85	8.00	0.00
					6212867.75	2327272.93	8.00	0.00
					6212849.01	2327264.11	8.00	0.00
					6212008.15	2327264.11	8.00	0.00
					6211980.60	2327281.75	8.00	0.00
					6211966.27	2327302.68	8.00	0.00
					6211962.97	2327342.36	8.00	0.00
					6211963.93	2327482.19	8.00	0.00
LINESOURCE	8.00	a			6211963.30	2327390.85	8.00	0.00
					6211795.45	2327389.75	8.00	0.00
LINESOURCE	8.00	a			6211611.08	2327406.77	8.00	0.00

Name	Height				Coordinates			
	Begin		End		x	y	z	Ground
	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
					6211612.44	2327498.72	8.00	0.00
LINESOURCE	8.00	a			6209322.89	2328728.42	8.00	0.00
					6209325.54	2328509.96	8.00	0.00
					6209301.23	2328508.61	8.00	0.00
					6209268.81	2328520.77	8.00	0.00
					6209249.89	2328535.63	8.00	0.00
					6209221.53	2328555.89	8.00	0.00
					6209210.72	2328568.05	8.00	0.00
					6209186.40	2328577.51	8.00	0.00
					6209159.38	2328577.51	8.00	0.00
LINESOURCE	8.00	a			6209325.54	2328509.96	8.00	0.00
					6210406.26	2328505.91	8.00	0.00
LINESOURCE	8.00	a			6210248.25	2328720.85	8.00	0.00
					6210242.79	2328506.52	8.00	0.00
LINESOURCE	8.00	a			6210570.36	2328504.58	8.00	0.00
					6210494.07	2328501.86	8.00	0.00
LINESOURCE	8.00	a			6209167.05	2329560.99	8.00	0.00
					6209286.37	2329562.31	8.00	0.00
					6209320.14	2329562.31	8.00	0.00
					6209320.12	2329507.20	8.00	0.00
LINESOURCE	8.00	a			6209320.14	2329562.31	8.00	0.00
					6209324.19	2329667.68	8.00	0.00
					6209329.60	2329693.35	8.00	0.00
					6209341.76	2329701.45	8.00	0.00
					6209355.26	2329709.56	8.00	0.00
					6209367.42	2329717.66	8.00	0.00
					6210211.73	2329714.96	8.00	0.00
					6210230.64	2329709.56	8.00	0.00
					6210241.45	2329693.35	8.00	0.00
					6210252.26	2329678.49	8.00	0.00
					6210256.31	2329662.28	8.00	0.00
					6210257.67	2329498.63	8.00	0.00
LINESOURCE	8.00	a			6210257.22	2329552.85	8.00	0.00
					6210431.60	2329551.51	8.00	0.00
LINESOURCE	8.00	a			6212432.65	2327264.11	8.00	0.00
					6212432.67	2327181.44	8.00	0.00

Area Source(s)

Name	M.	ID	Result. PWL			Result. PWL''			Lw / Li			Operating Time			Height
			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Special	Night	(ft)
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	
AREASOURCE		DOCK01	103.4	103.4	103.4	58.6	58.6	58.6	Lw	103.4		900.00	0.00	540.00	8
AREASOURCE		DOCK02	103.4	103.4	103.4	59.6	59.6	59.6	Lw	103.4		900.00	0.00	540.00	8
AREASOURCE		DOCK03	103.4	103.4	103.4	57.9	57.9	57.9	Lw	103.4		900.00	0.00	540.00	8
AREASOURCE		DOCK04	103.4	103.4	103.4	61.0	61.0	61.0	Lw	103.4		900.00	0.00	540.00	8
AREASOURCE		DOCK05	103.4	103.4	103.4	61.0	61.0	61.0	Lw	103.4		900.00	0.00	540.00	8
AREASOURCE		DOCK06	103.4	103.4	103.4	61.4	61.4	61.4	Lw	103.4		900.00	0.00	540.00	8
AREASOURCE		DOCK07	103.4	103.4	103.4	61.4	61.4	61.4	Lw	103.4		900.00	0.00	540.00	8

Name	Height				Coordinates			
	Begin		End		x	y	z	Ground
	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
AREASOURCE	8.00	a			6210820.61	2328905.49	8.00	0.00
					6210804.14	2327506.61	8.00	0.00
					6210623.01	2327505.53	8.00	0.00
					6210624.33	2327645.78	8.00	0.00
					6210567.88	2327644.90	8.00	0.00
					6210578.02	2328907.15	8.00	0.00
AREASOURCE	8.00	a			6211515.60	2327499.43	8.00	0.00
					6211534.83	2328899.68	8.00	0.00
					6211717.61	2328897.96	8.00	0.00
					6211703.27	2327498.57	8.00	0.00
AREASOURCE	8.00	a			6208475.51	2329147.10	8.00	0.00
					6209022.51	2329145.49	8.00	0.00
					6209018.25	2328950.87	8.00	0.00
					6209073.73	2328949.85	8.00	0.00
					6209071.69	2328612.52	8.00	0.00
					6209014.50	2328611.50	8.00	0.00
					6209014.84	2328599.58	8.00	0.00
					6209017.01	2328559.29	8.00	0.00
					6209015.89	2328486.61	8.00	0.00
					6208470.17	2328489.52	8.00	0.00
AREASOURCE	8.00	a			6209432.52	2329506.93	8.00	0.00
					6209427.72	2328727.91	8.00	0.00
					6209188.18	2328729.08	8.00	0.00
					6209192.57	2329507.50	8.00	0.00

Name	Height			Coordinates			
	Begin		End	x	y	z	Ground
	(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
AREASOURCE	8.00	a		6210145.51	2329498.53	8.00	0.00
				6210385.76	2329498.74	8.00	0.00
				6210380.65	2328719.58	8.00	0.00
				6210137.11	2328721.91	8.00	0.00
AREASOURCE	8.00	a		6212784.90	2328202.63	8.00	0.00
				6212970.78	2328202.25	8.00	0.00
				6212971.90	2328166.25	8.00	0.00
				6213027.03	2328165.13	8.00	0.00
				6213025.90	2327517.10	8.00	0.00
				6212969.65	2327517.10	8.00	0.00
				6212973.03	2327484.47	8.00	0.00
				6212785.92	2327481.71	8.00	0.00
AREASOURCE	8.00	a		6212075.22	2327483.76	8.00	0.00
				6211886.23	2327481.09	8.00	0.00
				6211886.23	2327515.97	8.00	0.00
				6211834.48	2327518.22	8.00	0.00
				6211832.23	2328168.50	8.00	0.00
				6211890.73	2328169.63	8.00	0.00
				6211888.48	2328203.38	8.00	0.00
				6212073.18	2328204.68	8.00	0.00

Barrier(s)

Name	M.	ID	Absorption		Z-Ext.	Cantilever		Height			Coordinates			
			left	right		horz.	vert.	Begin		End	x	y	z	Ground
					(ft)	(ft)	(ft)	(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
BARRIERTEMP		0						9.00	a		6209019.85	2329005.13	9.00	0.00
											6209023.27	2329145.24	9.00	0.00
											6208475.51	2329147.10	9.00	0.00
											6208470.17	2328489.52	9.00	0.00
											6209015.89	2328486.61	9.00	0.00
											6209017.01	2328559.29	9.00	0.00
BARRIERTEMP		0						9.00	a		6209014.84	2328599.58	9.00	0.00
											6209014.50	2328611.50	9.00	0.00
											6209071.69	2328612.52	9.00	0.00
											6209073.73	2328949.85	9.00	0.00
											6209018.25	2328950.87	9.00	0.00
											6209018.25	2328964.49	9.00	0.00
BARRIERTEMP		0						14.00	a		6211567.63	2327497.37	14.00	0.00
											6211601.69	2327495.90	14.00	0.00
BARRIERTEMP		0						14.00	a		6211637.19	2327497.32	14.00	0.00
											6211703.23	2327495.19	14.00	0.00
											6211717.61	2328897.96	14.00	0.00
											6211645.99	2328899.26	14.00	0.00
BARRIERTEMP		0						14.00	a		6211611.63	2328899.69	14.00	0.00
											6211534.83	2328899.68	14.00	0.00
BARRIERTEMP		0						14.00	a		6210820.63	2328906.70	14.00	0.00
											6210742.97	2328907.15	14.00	0.00
BARRIERTEMP		0						14.00	a		6210705.92	2328906.71	14.00	0.00
											6210578.02	2328907.15	14.00	0.00
											6210574.49	2328522.13	14.00	0.00
BARRIERTEMP		0						14.00	a		6210575.38	2328483.31	14.00	0.00
											6210567.88	2327644.90	14.00	0.00
											6210624.33	2327645.78	14.00	0.00
											6210623.01	2327505.53	14.00	0.00
											6210694.46	2327505.09	14.00	0.00
BARRIERTEMP		0						14.00	a		6210804.14	2327506.61	14.00	0.00
											6210727.09	2327506.85	14.00	0.00

Building(s)

Name	M.	ID	RB	Residents	Absorption	Height		Coordinates			
						Begin		x	y	z	Ground
						(ft)		(ft)	(ft)	(ft)	(ft)
BUILDING		BUILDING00001	x	0		45.00	a	6210822.62	2329076.35	45.00	0.00
								6211537.19	2329071.36	45.00	0.00
								6211515.57	2327497.42	45.00	0.00
								6211567.63	2327497.37	45.00	0.00
								6211562.59	2327327.89	45.00	0.00
								6210755.80	2327339.03	45.00	0.00
								6210754.57	2327507.32	45.00	0.00
								6210804.14	2327506.61	45.00	0.00
BUILDING		BUILDING00002	x	0		45.00	a	6209374.90	2329628.16	45.00	0.00
								6210206.73	2329622.16	45.00	0.00
								6210207.93	2329500.93	45.00	0.00
								6210145.51	2329498.53	45.00	0.00
								6210137.11	2328721.91	45.00	0.00

Name	M.	ID	RB	Residents	Absorption	Height		Coordinates			
						Begin		x	y	z	Ground
						(ft)		(ft)	(ft)	(ft)	(ft)
								6210200.73	2328720.71	45.00	0.00
								6210198.33	2328600.68	45.00	0.00
								6209366.50	2328607.88	45.00	0.00
								6209367.70	2328726.71	45.00	0.00
								6209427.72	2328727.91	45.00	0.00
								6209432.52	2329506.93	45.00	0.00
								6209374.90	2329506.93	45.00	0.00
BUILDING		BUILDING00003	x	0		45.00	a	6212013.87	2328325.34	45.00	0.00
								6212847.27	2328325.34	45.00	0.00
								6212847.27	2328201.61	45.00	0.00
								6212784.90	2328202.63	45.00	0.00
								6212785.92	2327481.71	45.00	0.00
								6212846.25	2327479.67	45.00	0.00
								6212846.25	2327360.03	45.00	0.00
								6212011.82	2327359.00	45.00	0.00
								6212012.85	2327482.74	45.00	0.00
								6212075.22	2327483.76	45.00	0.00
								6212073.18	2328204.68	45.00	0.00
								6212014.89	2328205.70	45.00	0.00

APPENDIX 9.3:

CADNAA SP OPERATIONAL NOISE MODEL INPUTS

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12991 - Bloomington Business Park Specific Plan- PLD

CadnaA Noise Prediction Model: 12991_04_SP.cna
Date: 03.05.21
Analyst: S. Shami

Calculation Configuration

Configuration	
Parameter	Value
General	
Country	(user defined)
Max. Error (dB)	0.00
Max. Search Radius (#(Unit,LEN))	2000.01
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (#(Unit,LEN))	999.99
Min. Length of Section (#(Unit,LEN))	1.01
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Reference Time Day (min)	960.00
Reference Time Night (min)	480.00
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	5.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	2
Search Radius Src	100.00
Search Radius Rcvr	100.00
Max. Distance Source - Rcvr	1000.00 1000.00
Min. Distance Rvcr - Reflector	1.00 1.00
Min. Distance Source - Reflector	0.10
Industrial (ISO 9613)	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Incl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (#(Unit,TEMP))	10
rel. Humidity (%)	70
Ground Absorption G	0.50
Wind Speed for Dir. (#(Unit,SPEED))	3.0
Roads (RLS-90)	
Strictly acc. to RLS-90	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

Receiver Noise Levels

Name	M.	ID	Level Lr			Limit. Value			Land Use			Height		Coordinates		
			Day	Night	CNEL	Day	Night	CNEL	Type	Auto	Noise Type			X	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
RECEIVERS		SP-R1	47.8	46.7	53.1	71.0	77.0	0.0				5.00	a	6208192.26	2328225.78	5.00
RECEIVERS		SP-R2	50.7	49.6	56.0	61.0	57.0	0.0				5.00	a	6208450.35	2329710.72	5.00
RECEIVERS		SP-R3	50.3	48.9	55.4	70.0	65.0	0.0				5.00	a	6208867.02	2329868.27	5.00
RECEIVERS		SP-R4	52.7	51.4	57.9	75.0	73.0	0.0				5.00	a	6211089.75	2329847.87	5.00
RECEIVERS		SP-R5	51.9	50.5	56.9	59.0	56.0	0.0				5.00	a	6211837.36	2329506.94	5.00
RECEIVERS		SP-R6	55.8	54.7	61.1	57.0	55.0	0.0				5.00	a	6209946.53	2327971.36	5.00

Point Source(s)

Name	M.	ID	Result. PWL			Lw / Li			Operating Time			K0	Height		Coordinates		
			Day	Evening	Night	Type	Value	norm.	Day	Special	Night				X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(dB)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE		TRASH13	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	0.0	5.00	a	6211688.45	2328878.34	5.00
POINTSOURCE		TRASH12	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	0.0	5.00	a	6210658.65	2327526.87	5.00
POINTSOURCE		TRASH11	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	0.0	5.00	a	6211665.88	2327525.09	5.00
POINTSOURCE		TRASH10	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	0.0	5.00	a	6210366.78	2329479.02	5.00
POINTSOURCE		TRASH09	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	0.0	5.00	a	6209205.71	2329489.25	5.00
POINTSOURCE		TRASH08	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	0.0	5.00	a	6209200.60	2328745.14	5.00
POINTSOURCE		TRASH07	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	0.0	5.00	a	6210364.59	2328733.46	5.00
POINTSOURCE		TRASH06	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	0.0	5.00	a	6210613.41	2328885.00	5.00
POINTSOURCE		TRASH05	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	0.0	5.00	a	6212990.18	2328143.99	5.00
POINTSOURCE		TRASH04	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	0.0	5.00	a	6212990.18	2327537.70	5.00

Name	M.	ID	Result. PWL			Lw / Li			Operating Time			K0	Height		Coordinates		
			Day	Evening	Night	Type	Value	norm.	Day	Special	Night				X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(dB)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE		TRASH03	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	0.0	5.00	a	6211860.52	2328150.89	5.00
POINTSOURCE		TRASH02	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	0.0	5.00	a	6211865.70	2327542.88	5.00
POINTSOURCE		TRASH01	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	0.0	5.00	a	6208931.16	2328931.64	5.00
POINTSOURCE		AC01	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6209403.01	2328648.02	50.00
POINTSOURCE		AC02	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6210163.64	2328637.70	50.00
POINTSOURCE		AC03	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6210171.38	2329583.98	50.00
POINTSOURCE		AC04	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6209410.74	2329591.72	50.00
POINTSOURCE		AC05	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6212823.39	2327387.72	50.00
POINTSOURCE		AC06	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6212041.48	2327389.97	50.00
POINTSOURCE		AC07	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6212038.11	2328286.63	50.00
POINTSOURCE		AC08	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6212815.52	2328297.88	50.00
POINTSOURCE		AC09	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6210838.28	2329053.23	50.00
POINTSOURCE		AC10	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6211506.23	2329044.80	50.00
POINTSOURCE		AC11	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6210780.79	2327383.92	50.00
POINTSOURCE		AC12	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6211539.14	2327369.27	50.00
POINTSOURCE		PARK01	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6211866.14	2327454.76	5.00
POINTSOURCE		PARK02	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209856.81	2328560.35	5.00
POINTSOURCE		PARK03	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6211679.75	2327245.36	5.00
POINTSOURCE		PARK04	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6211677.17	2327320.13	5.00
POINTSOURCE		PARK05	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210676.75	2329158.54	5.00
POINTSOURCE		PARK06	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210854.66	2329155.96	5.00
POINTSOURCE		PARK07	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210787.62	2328941.96	5.00
POINTSOURCE		PARK08	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210785.04	2329027.04	5.00
POINTSOURCE		PARK09	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210310.61	2328599.03	5.00
POINTSOURCE		PARK10	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210313.19	2328676.38	5.00
POINTSOURCE		PARK11	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210140.44	2328552.61	5.00
POINTSOURCE		PARK12	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210019.25	2328555.19	5.00
POINTSOURCE		PARK13	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209952.21	2328557.77	5.00
POINTSOURCE		PARK14	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209715.00	2328560.35	5.00
POINTSOURCE		PARK15	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209627.33	2328557.77	5.00
POINTSOURCE		PARK16	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209542.24	2328570.66	5.00
POINTSOURCE		PARK17	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209431.37	2328568.09	5.00
POINTSOURCE		PARK18	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209230.26	2328666.07	5.00
POINTSOURCE		PARK19	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210323.50	2329622.66	5.00
POINTSOURCE		PARK20	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210320.92	2329700.01	5.00
POINTSOURCE		PARK21	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210140.44	2329656.18	5.00
POINTSOURCE		PARK22	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210029.56	2329656.18	5.00
POINTSOURCE		PARK23	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209959.95	2329658.75	5.00
POINTSOURCE		PARK24	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209861.97	2329658.75	5.00
POINTSOURCE		PARK25	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209717.58	2329663.91	5.00
POINTSOURCE		PARK26	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209647.96	2329663.91	5.00
POINTSOURCE		PARK27	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209557.71	2329663.91	5.00
POINTSOURCE		PARK28	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209431.37	2329666.49	5.00
POINTSOURCE		PARK29	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209263.78	2329635.55	5.00
POINTSOURCE		PARK30	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6209258.62	2329707.74	5.00
POINTSOURCE		PARK31	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212069.09	2327320.13	5.00
POINTSOURCE		PARK32	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212185.12	2327320.13	5.00
POINTSOURCE		PARK33	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212277.94	2327317.55	5.00
POINTSOURCE		PARK34	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212566.72	2327314.98	5.00
POINTSOURCE		PARK35	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212664.70	2327317.55	5.00
POINTSOURCE		PARK36	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212775.57	2327320.13	5.00
POINTSOURCE		PARK37	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212999.90	2327451.63	5.00
POINTSOURCE		PARK38	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6211695.22	2328972.90	5.00
POINTSOURCE		PARK39	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6211568.88	2328978.05	5.00
POINTSOURCE		PARK40	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6211904.23	2328239.38	5.00
POINTSOURCE		PARK41	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6211904.23	2328320.38	5.00
POINTSOURCE		PARK42	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212959.52	2328240.50	5.00
POINTSOURCE		PARK43	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212958.40	2328314.76	5.00
POINTSOURCE		PARK44	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212779.52	2328360.88	5.00
POINTSOURCE		PARK45	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212673.76	2328359.76	5.00
POINTSOURCE		PARK46	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212589.38	2328360.88	5.00
POINTSOURCE		PARK47	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212508.38	2328358.63	5.00
POINTSOURCE		PARK48	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212282.24	2328363.13	5.00
POINTSOURCE		PARK49	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212193.37	2328365.38	5.00
POINTSOURCE		PARK50	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6212081.99	2328366.51	5.00
POINTSOURCE		PARK51	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210642.78	2328984.64	5.00
POINTSOURCE		PARK52	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210570.70	2328989.78	5.00
POINTSOURCE		PARK53	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210980.03	2329159.70	5.00
POINTSOURCE		PARK54	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210761.20	2329159.70	5.00
POINTSOURCE		PARK55	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210568.12	2329159.70	5.00
POINTSOURCE		PARK56	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210811.64	2327315.51	5.00
POINTSOURCE		PARK57	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6210924.35	2327314.51	5.00
POINTSOURCE		PARK58	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6211003.65	2327314.01	5.00
POINTSOURCE		PARK59	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6211099.90	2327313.51	5.00
POINTSOURCE		PARK60	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6211264.97	2327311.02	5.00
POINTSOURCE		PARK61	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6211369.70	2327309.02	5.00
POINTSOURCE		PARK62	87.8	87.8	87.8	Lw	87.8		900.00	0.00	540.00	0.0	5.00	a	6211510.34	2327308.02	5.00

Line Source(s)

Name	M.	ID	Result. PWL			Result. PWL'			Lw / Li			Operating Time			Moving Pt. Src				Height
			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Special	Night	Number			Speed	
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	Day	Evening	Night	(mph)	(ft)
LINESOURCE		DWY01	92.2	77.6	83.2	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY02	98.1	83.4	89.1	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY03	90.4	75.8	81.4	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY04	99.0	84.4	90.0	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY05	93.2	78.5	84.2	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY06	98.0	83.4	89.0	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY07	89.5	74.9	80.5	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY08	91.4	76.8	82.4	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY09	98.3	83.7	89.3	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY10	89.7	75.1	80.7	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY11	87.1	72.4	78.1	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY12	93.5	78.9	84.5	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY13	97.8	83.1	88.8	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY14	90.7	76.1	81.8	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY15	86.3	71.6	77.3	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY16	90.6	76.0	81.6	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY17	98.4	83.8	89.5	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY18	89.9	75.2	80.9	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8
LINESOURCE		DWY19	86.6	72.0	77.6	72.6	58.0	63.6	PWL-Pt	93.2					87.0	3.0	11.0	6.2	8

Name	Height				Coordinates			
	Begin		End		x	y	z	Ground
	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
LINESOURCE	8.00	a			6211736.63	2329095.90	8.00	0.00
					6211631.45	2329092.28	8.00	0.00
					6211627.78	2328897.56	8.00	0.00
LINESOURCE	8.00	a			6211631.45	2329092.28	8.00	0.00
					6210473.67	2329106.75	8.00	0.00
LINESOURCE	8.00	a			6210724.54	2329103.62	8.00	0.00
					6210722.08	2328904.54	8.00	0.00
LINESOURCE	8.00	a			6210706.48	2327508.89	8.00	0.00
					6210702.42	2327275.11	8.00	0.00
					6210706.91	2327263.64	8.00	0.00
					6210714.39	2327257.16	8.00	0.00
					6210725.36	2327251.17	8.00	0.00
					6210732.84	2327245.69	8.00	0.00
					6211601.11	2327239.20	8.00	0.00
					6211606.09	2327248.68	8.00	0.00
					6211609.09	2327268.63	8.00	0.00
					6211611.08	2327406.77	8.00	0.00
					6211726.28	2327407.77	8.00	0.00
LINESOURCE	8.00	a			6212893.09	2328202.41	8.00	0.00
					6212893.09	2328415.75	8.00	0.00
					6213053.82	2328405.79	8.00	0.00
LINESOURCE	8.00	a			6212893.09	2328415.75	8.00	0.00
					6212551.46	2328421.26	8.00	0.00
					6212351.99	2328421.26	8.00	0.00
					6211965.17	2328421.26	8.00	0.00
					6211965.22	2328203.92	8.00	0.00
LINESOURCE	8.00	a			6211965.17	2328421.26	8.00	0.00
					6211804.27	2328404.73	8.00	0.00
LINESOURCE	8.00	a			6212892.97	2327483.29	8.00	0.00
					6212893.09	2327384.24	8.00	0.00
					6213044.57	2327389.64	8.00	0.00
LINESOURCE	8.00	a			6212893.09	2327384.24	8.00	0.00
					6212889.79	2327308.19	8.00	0.00
					6212883.18	2327282.85	8.00	0.00
					6212867.75	2327272.93	8.00	0.00
					6212849.01	2327264.11	8.00	0.00
					6212008.15	2327264.11	8.00	0.00
					6211980.60	2327281.75	8.00	0.00
					6211966.27	2327302.68	8.00	0.00
					6211962.97	2327342.36	8.00	0.00
					6211963.93	2327482.19	8.00	0.00
LINESOURCE	8.00	a			6211963.30	2327390.85	8.00	0.00
					6211795.45	2327389.75	8.00	0.00
LINESOURCE	8.00	a			6211611.08	2327406.77	8.00	0.00
					6211612.44	2327498.72	8.00	0.00
LINESOURCE	8.00	a			6209322.89	2328728.42	8.00	0.00
					6209325.54	2328509.96	8.00	0.00
					6209301.23	2328508.61	8.00	0.00
					6209268.81	2328520.77	8.00	0.00
					6209249.89	2328535.63	8.00	0.00
					6209221.53	2328555.89	8.00	0.00
					6209210.72	2328568.05	8.00	0.00

Name	Height				Coordinates			
	Begin		End		x	y	z	Ground
	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
					6209186.40	2328577.51	8.00	0.00
					6209159.38	2328577.51	8.00	0.00
LINESOURCE	8.00	a			6209325.54	2328509.96	8.00	0.00
					6210406.26	2328505.91	8.00	0.00
LINESOURCE	8.00	a			6210248.25	2328720.85	8.00	0.00
					6210242.79	2328506.52	8.00	0.00
LINESOURCE	8.00	a			6210570.36	2328504.58	8.00	0.00
					6210494.07	2328501.86	8.00	0.00
LINESOURCE	8.00	a			6209167.05	2329560.99	8.00	0.00
					6209286.37	2329562.31	8.00	0.00
					6209320.14	2329562.31	8.00	0.00
					6209320.12	2329507.20	8.00	0.00
LINESOURCE	8.00	a			6209320.14	2329562.31	8.00	0.00
					6209324.19	2329667.68	8.00	0.00
					6209329.60	2329693.35	8.00	0.00
					6209341.76	2329701.45	8.00	0.00
					6209355.26	2329709.56	8.00	0.00
					6209367.42	2329717.66	8.00	0.00
					6210211.73	2329714.96	8.00	0.00
					6210230.64	2329709.56	8.00	0.00
					6210241.45	2329693.35	8.00	0.00
					6210252.26	2329678.49	8.00	0.00
					6210256.31	2329662.28	8.00	0.00
					6210257.67	2329498.63	8.00	0.00
LINESOURCE	8.00	a			6210257.22	2329552.85	8.00	0.00
					6210431.60	2329551.51	8.00	0.00
LINESOURCE	8.00	a			6212432.65	2327264.11	8.00	0.00
					6212432.67	2327181.44	8.00	0.00

Area Source(s)

Name	M.	ID	Result. PWL			Result. PWL''			Lw / Li			Operating Time			Height
			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Special	Night	(ft)
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	
AREASOURCE		DOCK01	103.4	103.4	103.4	58.6	58.6	58.6	Lw	103.4		900.00	0.00	540.00	8
AREASOURCE		DOCK02	103.4	103.4	103.4	59.6	59.6	59.6	Lw	103.4		900.00	0.00	540.00	8
AREASOURCE		DOCK03	103.4	103.4	103.4	57.9	57.9	57.9	Lw	103.4		900.00	0.00	540.00	8
AREASOURCE		DOCK04	103.4	103.4	103.4	61.0	61.0	61.0	Lw	103.4		900.00	0.00	540.00	8
AREASOURCE		DOCK05	103.4	103.4	103.4	61.0	61.0	61.0	Lw	103.4		900.00	0.00	540.00	8
AREASOURCE		DOCK06	103.4	103.4	103.4	61.4	61.4	61.4	Lw	103.4		900.00	0.00	540.00	8
AREASOURCE		DOCK07	103.4	103.4	103.4	61.4	61.4	61.4	Lw	103.4		900.00	0.00	540.00	8
AREASOURCE		DOCK08	103.4	103.4	103.4	51.6	51.6	51.6	Lw	103.4		900.00	0.00	540.00	8
AREASOURCE		DOCK09	103.4	103.4	103.4	55.4	55.4	55.4	Lw	103.4		900.00	0.00	540.00	8
AREASOURCE		DOCK10	103.4	103.4	103.4	55.5	55.5	55.5	Lw	103.4		900.00	0.00	540.00	8

Name	Height				Coordinates			
	Begin		End		x	y	z	Ground
	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
AREASOURCE	8.00	a			6210820.61	2328905.49	8.00	0.00
					6210804.14	2327506.61	8.00	0.00
					6210623.01	2327505.53	8.00	0.00
					6210624.33	2327645.78	8.00	0.00
					6210567.88	2327644.90	8.00	0.00
					6210578.02	2328907.15	8.00	0.00
AREASOURCE	8.00	a			6211515.60	2327499.43	8.00	0.00
					6211534.83	2328899.68	8.00	0.00
					6211717.61	2328897.96	8.00	0.00
					6211703.27	2327498.57	8.00	0.00
AREASOURCE	8.00	a			6208475.51	2329147.10	8.00	0.00
					6209022.51	2329145.49	8.00	0.00
					6209018.25	2328950.87	8.00	0.00
					6209073.73	2328949.85	8.00	0.00
					6209071.69	2328612.52	8.00	0.00
					6209014.50	2328611.50	8.00	0.00
					6209014.84	2328599.58	8.00	0.00
					6209017.01	2328559.29	8.00	0.00
					6209015.89	2328486.61	8.00	0.00
					6208470.17	2328489.52	8.00	0.00
AREASOURCE	8.00	a			6209432.52	2329506.93	8.00	0.00
					6209427.72	2328727.91	8.00	0.00
					6209188.18	2328729.08	8.00	0.00
					6209192.57	2329507.50	8.00	0.00
AREASOURCE	8.00	a			6210145.51	2329498.53	8.00	0.00
					6210385.76	2329498.74	8.00	0.00
					6210380.65	2328719.58	8.00	0.00
					6210137.11	2328721.91	8.00	0.00
AREASOURCE	8.00	a			6212784.90	2328202.63	8.00	0.00

Name	Height				Coordinates			
	Begin		End		x	y	z	Ground
	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
					6212970.78	2328202.25	8.00	0.00
					6212971.90	2328166.25	8.00	0.00
					6213027.03	2328165.13	8.00	0.00
					6213025.90	2327517.10	8.00	0.00
					6212969.65	2327517.10	8.00	0.00
					6212973.03	2327484.47	8.00	0.00
					6212785.92	2327481.71	8.00	0.00
AREASOURCE	8.00	a			6212075.22	2327483.76	8.00	0.00
					6211886.23	2327481.09	8.00	0.00
					6211886.23	2327515.97	8.00	0.00
					6211834.48	2327518.22	8.00	0.00
					6211832.23	2328168.50	8.00	0.00
					6211890.73	2328169.63	8.00	0.00
					6211888.48	2328203.38	8.00	0.00
					6212073.18	2328204.68	8.00	0.00
AREASOURCE	8.00	a			6208480.64	2329779.41	8.00	0.00
					6209103.99	2329774.79	8.00	0.00
					6209092.30	2328008.56	8.00	0.00
					6209091.09	2327825.26	8.00	0.00
					6209082.85	2327197.94	8.00	0.00
					6208459.25	2327189.94	8.00	0.00
AREASOURCE	8.00	a			6209153.42	2328479.81	8.00	0.00
					6209784.51	2328474.95	8.00	0.00
					6209785.90	2328391.64	8.00	0.00
					6210416.29	2328388.86	8.00	0.00
					6210412.81	2327983.78	8.00	0.00
					6209784.50	2327984.50	8.00	0.00
					6209783.01	2327819.48	8.00	0.00
					6209143.00	2327824.83	8.00	0.00
AREASOURCE	8.00	a			6210497.73	2329281.97	8.00	0.00
					6210503.76	2329767.89	8.00	0.00
					6211749.91	2329764.06	8.00	0.00
					6211745.31	2329259.40	8.00	0.00
					6211453.06	2329259.38	8.00	0.00
					6211449.30	2329129.90	8.00	0.00
					6211115.05	2329132.91	8.00	0.00
					6211114.29	2329278.96	8.00	0.00

Barrier(s)

Name	M.	ID	Absorption		Z-Ext.	Cantilever		Height			Coordinates			
			left	right		horz.	vert.	Begin		End	x	y	z	Ground
					(ft)	(ft)	(ft)	(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
BARRIERTEMP		0						9.00	a		6209019.85	2329005.13	9.00	0.00
											6209023.27	2329145.24	9.00	0.00
											6208475.51	2329147.10	9.00	0.00
											6208470.17	2328489.52	9.00	0.00
											6209015.89	2328486.61	9.00	0.00
											6209017.01	2328559.29	9.00	0.00
BARRIERTEMP		0						9.00	a		6209014.84	2328599.58	9.00	0.00
											6209014.50	2328611.50	9.00	0.00
											6209071.69	2328612.52	9.00	0.00
											6209073.73	2328949.85	9.00	0.00
											6209018.25	2328950.87	9.00	0.00
											6209018.25	2328964.49	9.00	0.00
BARRIERTEMP		0						14.00	a		6211567.63	2327497.37	14.00	0.00
											6211601.69	2327495.90	14.00	0.00
BARRIERTEMP		0						14.00	a		6211637.19	2327497.32	14.00	0.00
											6211703.23	2327495.19	14.00	0.00
											6211717.61	2328897.96	14.00	0.00
											6211645.99	2328899.26	14.00	0.00
BARRIERTEMP		0						14.00	a		6211611.63	2328899.69	14.00	0.00
											6211534.83	2328899.68	14.00	0.00
BARRIERTEMP		0						14.00	a		6210820.63	2328906.70	14.00	0.00
											6210742.97	2328907.15	14.00	0.00
BARRIERTEMP		0						14.00	a		6210705.92	2328906.71	14.00	0.00
											6210578.02	2328907.15	14.00	0.00
											6210574.49	2328522.13	14.00	0.00
BARRIERTEMP		0						14.00	a		6210575.38	2328483.31	14.00	0.00
											6210567.88	2327644.90	14.00	0.00
											6210624.33	2327645.78	14.00	0.00
											6210623.01	2327505.53	14.00	0.00
											6210694.46	2327505.09	14.00	0.00
BARRIERTEMP		0						14.00	a		6210804.14	2327506.61	14.00	0.00
											6210727.09	2327506.85	14.00	0.00

Building(s)

Name	M.	ID	RB	Residents	Absorption	Height		Coordinates			
						Begin		x	y	z	Ground
						(ft)		(ft)	(ft)	(ft)	(ft)
BUILDING		BUILDING00001	x	0		45.00	a	6210822.62	2329076.35	45.00	0.00
								6211537.19	2329071.36	45.00	0.00
								6211515.57	2327497.42	45.00	0.00
								6211567.63	2327497.37	45.00	0.00
								6211562.59	2327327.89	45.00	0.00
								6210755.80	2327339.03	45.00	0.00
								6210754.57	2327507.32	45.00	0.00
								6210804.14	2327506.61	45.00	0.00
BUILDING		BUILDING00002	x	0		45.00	a	6209374.90	2329628.16	45.00	0.00
								6210206.73	2329622.16	45.00	0.00
								6210207.93	2329500.93	45.00	0.00
								6210145.51	2329498.53	45.00	0.00
								6210137.11	2328721.91	45.00	0.00
								6210200.73	2328720.71	45.00	0.00
								6210198.33	2328600.68	45.00	0.00
								6209366.50	2328607.88	45.00	0.00
								6209367.70	2328726.71	45.00	0.00
								6209427.72	2328727.91	45.00	0.00
								6209432.52	2329506.93	45.00	0.00
								6209374.90	2329506.93	45.00	0.00
BUILDING		BUILDING00003	x	0		45.00	a	6212013.87	2328325.34	45.00	0.00
								6212847.27	2328325.34	45.00	0.00
								6212847.27	2328201.61	45.00	0.00
								6212784.90	2328202.63	45.00	0.00
								6212785.92	2327481.71	45.00	0.00
								6212846.25	2327479.67	45.00	0.00
								6212846.25	2327360.03	45.00	0.00
								6212011.82	2327359.00	45.00	0.00
								6212012.85	2327482.74	45.00	0.00
								6212075.22	2327483.76	45.00	0.00
								6212073.18	2328204.68	45.00	0.00
								6212014.89	2328205.70	45.00	0.00

Ground Absorption(s)

Name	M.	ID	G	Coordinates	
				x	y
				(ft)	(ft)
GROUND		0	1.0	6209942.99	2327973.98
				6209915.17	2327962.27
				6209914.40	2327984.35
				6209969.09	2327984.29
				6209970.24	2327973.21
				6209956.62	2327971.87
				6209952.97	2327972.06

APPENDIX 10.1:

CADNAA OYD1 CONSTRUCTION NOISE MODEL INPUTS

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12991 - Bloomington Business Park Specific Plan

CadnaA Noise Prediction Model: 12991_02-Construction.cna
Date: 10.03.21
Analyst: S. Shami

Calculation Configuration

Configuration	
Parameter	Value
General	
Country	(user defined)
Max. Error (dB)	0.00
Max. Search Radius (#(Unit,LEN))	2000.01
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (#(Unit,LEN))	999.99
Min. Length of Section (#(Unit,LEN))	1.01
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Reference Time Day (min)	960.00
Reference Time Night (min)	480.00
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	5.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	2
Search Radius Src	100.00
Search Radius Rcvr	100.00
Max. Distance Source - Rcvr	1000.00 1000.00
Min. Distance Rvcr - Reflector	1.00 1.00
Min. Distance Source - Reflector	0.10
Industrial (ISO 9613)	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Incl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (#(Unit,TEMP))	10
rel. Humidity (%)	70
Ground Absorption G	0.50
Wind Speed for Dir. (#(Unit,SPEED))	3.0
Roads (RLS-90)	
Strictly acc. to RLS-90	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

Receiver Noise Levels

Name	M.	ID	Level Lr			Limit. Value			Land Use			Height		Coordinates		
			Day	Night	CNEL	Day	Night	CNEL	Type	Auto	Noise Type			X	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
RECEIVERS		R1	74.3	74.3	80.9	0.0	0.0	0.0		x	Total	5.00	a	6209067.14	2329695.37	5.00
RECEIVERS		R2	75.6	75.6	82.2	0.0	0.0	0.0		x	Total	5.00	a	6209676.52	2329872.45	5.00
RECEIVERS		R3	75.6	75.6	82.2	0.0	0.0	0.0		x	Total	5.00	a	6210511.59	2329617.24	5.00
RECEIVERS		R4	75.5	75.5	82.1	0.0	0.0	0.0		x	Total	5.00	a	6211644.77	2329342.53	5.00
RECEIVERS		R5	76.8	76.8	83.5	0.0	0.0	0.0		x	Total	5.00	a	6211822.18	2328712.96	5.00
RECEIVERS		R6	74.8	74.8	81.5	0.0	0.0	0.0		x	Total	5.00	a	6212891.19	2328558.88	5.00
RECEIVERS		R7	71.6	71.6	78.3	0.0	0.0	0.0		x	Total	5.00	a	6213126.07	2327054.66	5.00
RECEIVERS		R8	73.1	73.1	79.8	0.0	0.0	0.0		x	Total	5.00	a	6212357.84	2326964.81	5.00
RECEIVERS		R9	76.2	76.2	82.8	0.0	0.0	0.0		x	Total	5.00	a	6210361.40	2328187.64	5.00
RECEIVERS		R10	74.5	74.5	81.2	0.0	0.0	0.0		x	Total	5.00	a	6209028.59	2328394.59	5.00

Area Source(s)

Name	M.	ID	Result. PWL			Result. PWL''			Lw / Li			Operating Time			Height
			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Special	Night	(ft)
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	
SITEBOUNDARY		CONSTRUCTION	136.8	136.8	136.8	79.0	79.0	79.0	Lw''	79					8

Name	Height				Coordinates			
	Begin		End		x	y	z	Ground
	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
SITEBOUNDARY	8.00	a			6208463.48	2329189.06	8.00	0.00

Name	Height		Coordinates			
	Begin	End	x	y	z	Ground
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
			6209159.66	2329182.12	8.00	0.00
			6209166.61	2329786.28	8.00	0.00
			6209168.34	2329791.49	8.00	0.00
			6209177.02	2329800.17	8.00	0.00
			6209190.91	2329801.91	8.00	0.00
			6210395.77	2329789.76	8.00	0.00
			6210423.55	2329763.71	8.00	0.00
			6210414.87	2329317.53	8.00	0.00
			6211121.47	2329308.85	8.00	0.00
			6211121.47	2329157.81	8.00	0.00
			6211453.07	2329157.81	8.00	0.00
			6211454.80	2329288.02	8.00	0.00
			6211753.41	2329284.55	8.00	0.00
			6211744.73	2328491.14	8.00	0.00
			6211810.70	2328487.67	8.00	0.00
			6213072.86	2328472.05	8.00	0.00
			6213058.97	2327220.31	8.00	0.00
			6213057.23	2327208.16	8.00	0.00
			6213046.82	2327201.21	8.00	0.00
			6213036.40	2327192.53	8.00	0.00
			6210652.72	2327201.21	8.00	0.00
			6210656.19	2327421.70	8.00	0.00
			6210479.11	2327425.17	8.00	0.00
			6210491.26	2328414.76	8.00	0.00
			6209784.66	2328423.44	8.00	0.00
			6209784.66	2328505.03	8.00	0.00
			6208456.54	2328522.39	8.00	0.00

APPENDIX 10.2:

CADNAA OYD2 CONSTRUCTION NOISE MODEL INPUTS

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12991 - Bloomington Business Park Specific Plan- PLD

CadnaA Noise Prediction Model: 12991_04_MRIDA_Construction.cna
Date: 04.05.21
Analyst: S. Shami

Calculation Configuration

Configuration	
Parameter	Value
General	
Country	(user defined)
Max. Error (dB)	0.00
Max. Search Radius (#(Unit,LEN))	2000.01
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (#(Unit,LEN))	999.99
Min. Length of Section (#(Unit,LEN))	1.01
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Reference Time Day (min)	960.00
Reference Time Night (min)	480.00
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	5.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	2
Search Radius Src	100.00
Search Radius Rcvr	100.00
Max. Distance Source - Rcvr	1000.00 1000.00
Min. Distance Rvcr - Reflector	1.00 1.00
Min. Distance Source - Reflector	0.10
Industrial (ISO 9613)	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Incl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (#(Unit,TEMP))	10
rel. Humidity (%)	70
Ground Absorption G	0.50
Wind Speed for Dir. (#(Unit,SPEED))	3.0
Roads (RLS-90)	
Strictly acc. to RLS-90	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

Receiver Noise Levels

Name	M.	ID	Level Lr			Limit. Value			Land Use			Height		Coordinates		
			Day	Night	CNEL	Day	Night	CNEL	Type	Auto	Noise Type			X	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
RECEIVERS		M-R1	74.4	74.4	81.1	59.0	55.0	0.0				5.00	a	6209085.24	2329695.58	5.00
RECEIVERS		M-R2	74.9	74.9	81.6	63.0	60.0	0.0				5.00	a	6209676.52	2329872.45	5.00
RECEIVERS		M-R3	75.6	75.6	82.3	71.0	67.0	0.0				5.00	a	6210511.59	2329617.24	5.00
RECEIVERS		M-R4	74.5	74.5	81.2	59.0	56.0	0.0				5.00	a	6211644.77	2329342.53	5.00
RECEIVERS		M-R5	76.6	76.6	83.2	67.0	65.0	0.0				5.00	a	6211822.18	2328712.96	5.00
RECEIVERS		M-R6	74.3	74.3	80.9	57.0	54.0	0.0				5.00	a	6212891.19	2328558.88	5.00
RECEIVERS		M-R7	71.6	71.6	78.2	68.0	62.0	0.0				5.00	a	6213126.07	2327054.66	5.00
RECEIVERS		M-R8	73.3	73.3	80.0	59.0	55.0	0.0				5.00	a	6212357.84	2326964.81	5.00
RECEIVERS		M-R9	76.5	76.5	83.2	58.0	55.0	0.0				5.00	a	6210361.40	2328187.64	5.00
RECEIVERS		M-R10	75.1	75.1	81.8	55.0	53.0	0.0				5.00	a	6209028.59	2328394.59	5.00

Area Source(s)

Name	M.	ID	Result. PWL			Result. PWL''			Lw / Li			Operating Time			Height
			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Special	Night	(ft)
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	
SITEBOUNDARY2		CONSTUCTION	136.8	136.8	136.8	79.0	79.0	79.0	Lw''	79					8

Name	Height			Coordinates			
	Begin		End	x	y	z	Ground
	(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
SITEBOUNDARY2	8.00	a		6210384.24	2328391.33	8.00	0.00

Name	Height				Coordinates			
	Begin		End		x	y	z	Ground
	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
					6209789.62	2328404.35	8.00	0.00
					6209791.79	2328482.48	8.00	0.00
					6208470.17	2328489.52	8.00	0.00
					6208475.51	2329147.10	8.00	0.00
					6209165.28	2329144.76	8.00	0.00
					6209167.95	2329774.31	8.00	0.00
					6209911.62	2329769.72	8.00	0.00
					6209995.33	2329769.46	8.00	0.00
					6210431.38	2329768.12	8.00	0.00
					6210431.88	2329283.80	8.00	0.00
					6211115.76	2329279.31	8.00	0.00
					6211114.28	2329130.32	8.00	0.00
					6211443.72	2329128.48	8.00	0.00
					6211444.86	2329258.49	8.00	0.00
					6211745.28	2329255.90	8.00	0.00
					6211744.42	2329162.02	8.00	0.00
					6211738.08	2328466.73	8.00	0.00
					6213054.15	2328454.82	8.00	0.00
					6213049.54	2327774.13	8.00	0.00
					6213041.90	2327183.78	8.00	0.00
					6210461.33	2327173.86	8.00	0.00
					6210469.11	2328392.12	8.00	0.00

APPENDIX 10.3:

CADNAA SP CONSTRUCTION NOISE MODEL INPUTS

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12991 - Bloomington Business Park Specific Plan- PLD

CadnaA Noise Prediction Model: 12991_04_SP_Construction.cna
Date: 04.05.21
Analyst: S. Shami

Calculation Configuration

Configuration	
Parameter	Value
General	
Country	(user defined)
Max. Error (dB)	0.00
Max. Search Radius (#(Unit,LEN))	2000.01
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (#(Unit,LEN))	999.99
Min. Length of Section (#(Unit,LEN))	1.01
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Reference Time Day (min)	960.00
Reference Time Night (min)	480.00
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	5.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	2
Search Radius Src	100.00
Search Radius Rcvr	100.00
Max. Distance Source - Rcvr	1000.00 1000.00
Min. Distance Rvcr - Reflector	1.00 1.00
Min. Distance Source - Reflector	0.10
Industrial (ISO 9613)	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Incl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (#(Unit,TEMP))	10
rel. Humidity (%)	70
Ground Absorption G	0.50
Wind Speed for Dir. (#(Unit,SPEED))	3.0
Roads (RLS-90)	
Strictly acc. to RLS-90	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

Receiver Noise Levels

Name	M.	ID	Level Lr			Limit. Value			Land Use			Height		Coordinates		
			Day	Night	CNEL	Day	Night	CNEL	Type	Auto	Noise Type			X	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
RECEIVERS		SP-R1	73.0	73.0	79.7	71.0	77.0	0.0				5.00	a	6208192.26	2328225.78	5.00
RECEIVERS		SP-R2	76.5	76.5	83.1	61.0	57.0	0.0				5.00	a	6208450.35	2329710.72	5.00
RECEIVERS		SP-R3	75.3	75.3	81.9	70.0	65.0	0.0				5.00	a	6208867.02	2329868.27	5.00
RECEIVERS		SP-R4	76.0	76.0	82.6	75.0	73.0	0.0				5.00	a	6211089.75	2329847.87	5.00
RECEIVERS		SP-R5	75.3	75.3	82.0	59.0	56.0	0.0				5.00	a	6211837.36	2329506.94	5.00
RECEIVERS		SP-R6	79.6	79.6	86.2	57.0	55.0	0.0				5.00	a	6209946.53	2327971.36	5.00

Area Source(s)

Name	M.	ID	Result. PWL			Result. PWL''			Lw / Li			Operating Time			Height
			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Special	Night	(ft)
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	
SITEBOUNDARY3		CONSTRUCTION	138.3	138.3	138.3	79.0	79.0	79.0	Lw''	79					8

Name	Height				Coordinates			
	Begin		End		x	y	z	Ground
	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
SITEBOUNDARY3	8.00	a			6213054.15	2328454.82	8.00	0.00
					6213041.90	2327183.78	8.00	0.00
					6210461.33	2327173.86	8.00	0.00
					6210465.74	2327983.72	8.00	0.00
					6209784.50	2327984.50	8.00	0.00

Name	Height		Coordinates			
	Begin	End	x	y	z	Ground
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
			6209783.01	2327819.48	8.00	0.00
			6209091.09	2327825.26	8.00	0.00
			6209082.85	2327197.94	8.00	0.00
			6208459.25	2327189.94	8.00	0.00
			6208470.17	2328489.52	8.00	0.00
			6208480.64	2329779.41	8.00	0.00
			6209701.25	2329770.36	8.00	0.00
			6211749.91	2329764.06	8.00	0.00
			6211738.08	2328466.73	8.00	0.00