Goodman Logistics Center Fullerton

NOISE IMPACT ANALYSIS

CITY OF FULLERTON

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JULY 13, 2020

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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
Hz	Hertz
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
OPR	Office of Planning and Research
PPV	Peak particle velocity
Project	Goodman Logistics Center Fullerton
REMEL	Reference Energy Mean Emission Level
RMS	Root-mean-square
VdB	Vibration Decibels

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 Goodman Logistics Center Fullerton development ("Project"). The Project site is located at the northeast corner of the Acacia Avenue/Orangethorpe Avenue intersection in the City of Fullerton (2001 E. Orangethorpe Avenue). The Project involves the demolition of all existing structures on the Project site, and the redevelopment of the Project with four buildings totaling 1,561,522 square feet (sf). This includes 1,456,522 sf of warehouse space – expected to be used for fulfillment center and cold storage uses – and approximately 105,000 sf of office space (ground floor and mezzanine).

The Project Applicant may pursue the acquisition of an off-site property located north of E. Orangethorpe Avenue that abuts the southern boundary of the Project site (2301 E. Orangethorpe Avenue). In the event this property is acquired, the two existing buildings on that property would also be demolished and a maximum of approximately 1,609,384 sf of high cube warehouse space would be provided on the Project site. The larger Project (Optional Site Plan) is the basis for analysis in this report to provide a conservative worst-case impact analysis and assumes 804,692 square feet of high cube fulfillment center use and 804,692 square feet of high-cube cold storage warehouse use (inclusive of office space). This study has been prepared to satisfy applicable City of Fullerton standards and thresholds of significance based on guidance provided by Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (1)Off-Site Traffic Noise Analysis

Traffic generated by the operation of the proposed Project will influence the traffic noise levels in surrounding off-site areas. To quantify the off-site traffic noise increases on the surrounding off-site areas, the changes in traffic noise levels on 31 roadway segments surrounding the Project site were calculated based on the change in the average daily traffic (ADT) volumes. The traffic noise levels provided in this analysis are based on the traffic forecasts found in the *Goodman Logistics Center Fullerton Traffic Analysis.* (2) To assess the off-site noise level impacts associated with the proposed Project, noise contour boundaries were developed for Existing and Opening Year (2022) traffic conditions. The analysis shows that the Project-related traffic noise level increases under all "with Project" traffic scenarios would result in *less than significant* impacts at receiving land uses adjacent to the study area roadway segments.

OPERATIONAL NOISE ANALYSIS

Using reference noise levels to represent the expected noise sources from the Goodman Logistics Center Fullerton site, the operational analysis estimates the Project-related stationary-source noise hourly average L_{eq} levels at nearest sensitive receiver locations. The noise-producing activities associated with the proposed Goodman Logistics Center Fullerton are anticipated to be loading dock activity, entry gate & truck movements, roof-top air conditioning units, and trash enclosure activity. The operational noise analysis shows that the Project will satisfy the City of Fullerton stationary-source exterior hourly average L_{eq} noise levels adjusted to reflect the ambient noise level and the City of Anaheim 60 dBA L_{eq} anytime exterior noise level standards at all nearest receiver locations. The Project will contribute a *less than significant* long-term

operational noise level impact to the existing ambient noise environment at the noise-sensitive receiver locations. Therefore, the Project-related operational noise level impacts are *less than significant*.

OPERATIONAL VIBRATION ANALYSIS

On-site operations associated with the Project will include heavy trucks moving on site to and from the loading dock areas. Truck vibration levels are dependent on vehicle characteristics, load, speed, and pavement conditions. Since trucks rarely create vibration that exceed 70 VdB (unless there are bumps due to frequent potholes in the road) (3 p. 113), it is expected that the on-site heavy trucks will be travelling at very low speeds so activity will satisfy the maximum-acceptable vibration criteria of 78 VdB for daytime and 72 VdB for nighttime for residential uses, and therefore, will be *less than significant*.

With respect to off-site truck activity, ground-borne vibration levels from automobile traffic are generally overshadowed by vibration generated by heavy trucks on uneven roadway surfaces. However, due to the rapid drop-off rate of ground-borne vibration and the short duration of the associated events, vehicular traffic-induced ground-borne vibration is rarely perceptible beyond the roadway right-of-way. This is consistent with the FTA *Transit Noise and Vibration Impact Assessment Manual* (3), finding that rubber-tired traffic is rarely perceptible on smooth roadways. Since trucks rarely create vibration that exceeds 70 VdB (unless there are bumps due to frequent potholes in the road) (3 p. 113), it is expected that off-site truck vibration impacts at nearest homes will satisfy the maximum-acceptable vibration criteria of 78 VdB for daytime and 72 VdB for nighttime for residential uses, and therefore, will be *less than significant*.

TYPICAL CONSTRUCTION NOISE ANALYSIS

Using sample reference noise levels to represent the planned typical construction activities of the Goodman Logistics Center Fullerton site, this analysis estimates the Project-related construction noise levels at the closest sensitive receiver locations. This includes the demolition of the Kimberly-Clark buildings and associated facilities and the two existing buildings and associated facilities on the potential expansion site. However, no pile driving is expected as part of the Project construction activities.

To demonstrate compliance with local noise regulations, and to provide a conservative analysis, the Project-only construction noise levels are evaluated against exterior noise level thresholds based on the City of Fullerton and City of Anaheim exterior noise level standards. The typical Project-related short-term construction noise levels are expected to range from 53.7 to 61.6 dBA L_{eq} and will satisfy the noise level standards adjusted to reflect the ambient noise level in City of Fullerton, and the City of Anaheim 60 dBA L_{eq} anytime exterior noise level standards at all the nearest sensitive receiver locations. Therefore, the construction noise impacts are considered *less than significant* at the nearest noise-sensitive receiver locations.

NIGHTTIME CONCRETE POUR NOISE ANALYSIS

While most of the Project's construction activities would occur during the daytime hours, concrete pours are planned to occur at night. Since the nighttime concrete pours will take place outside the permitted City of Fullerton Municipal Code, Section 15.90.050 hours of 7:00 a.m. to 8:00 p.m. on any day except Sunday or a City-recognized holiday, the Project Applicant will be required to obtain authorization for nighttime work from the City of Fullerton. The noise levels associated with the nighttime concrete pour activities are estimated to range from 49.9 to 57.5 dBA L_{eq} and will satisfy the City of Fullerton and City of Anaheim stationary-source exterior noise level standards at all nearest noise sensitive residential receiver locations. Therefore, based on the results of this analysis, all nearest sensitive receiver locations will experience *less than significant* impacts due to the Project related nighttime concrete pour activities.

TYPICAL CONSTRUCTION VIBRATION ANALYSIS

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. At distances ranging from 305 feet to 2,080 feet from typical Project construction activities (at the Project site boundary), construction vibration levels are estimated to range from 29.4 to 54.4 VdB and will remain below the FTA Transit Noise and Vibration Impact Assessment Manual maximum acceptable vibration criteria of 78 VdB for daytime residential uses at all receiver locations. Therefore, the Project-related vibration impacts are considered *less than significant* during typical construction activities at the Project site.

CONCRETE CRUSHING CONSTRUCTION NOISE ANALYSIS

An additional analysis was completed to assess potential noise impacts due to the concrete crushing activities planned near the southern project site boundary on Orangethorpe Avenue. The concrete crushing construction noise levels are estimated to range from 42.9 to 57.9 dBA L_{eq} at the nearest sensitive receiver locations. The concrete crushing construction noise analysis shows that the receiver locations will satisfy the City of Fullerton and City of Anaheim exterior noise level standards at the nearest noise-sensitive receiver locations. Therefore, the noise impacts due to the Project concrete crushing noise is considered *less than significant* at all receiver locations.

CONCRETE CONSTRUCTION VIBRATION ANALYSIS

At distances ranging from 1,347 feet to 3,055 feet from the Project concrete crushing construction activity area planned near the southern project site boundary on Orangethorpe Avenue, concrete crushing construction vibration levels are estimated to range from 24.4 to 35.1 VdB at nearest sensitive receiver locations. The analysis shows that the concrete crushing construction vibration levels will remain below the FTA Transit Noise and Vibration Impact Assessment maximum acceptable vibration criteria of 78 VdB for daytime residential uses at all

receiver locations. Therefore, the Project-related concrete construction vibration impacts are considered *less than significant*.

SUMMARY OF CEQA SIGNIFICANCE FINDINGS

The results of this Goodman Logistics Center Fullerton 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. All impacts are less than significant without mitigation.

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*	-
Operational Vibration		*Less Than Significant*	-
Construction Noise	10	*Less Than Significant*	-
Construction Vibration		*Less Than Significant*	-
Concrete Crushing Noise		*Less Than Significant*	-

MITIGATION MEASURES

The Project would not result in significant construction-related noise impacts requiring mitigation; however, the following MMs identified in The Fullerton Plan EIR are incorporated as part of the proposed project and assumed in the analysis presented in this section. These MMs will be included in the MMRP for the proposed project.

MM N-1 Project applicants shall ensure through contract specifications that the following construction best management practices (BMPs) be implemented by contractors to reduce construction noise levels:

- Ensure that construction equipment is properly muffled according to industry standards and be in good working condition.
- Place noise-generating construction equipment and locate construction staging areas away from sensitive uses, where feasible.
- Schedule high noise-producing activities between the hours of 7:00 AM and 8:00 PM on any day except Sunday or a City-recognized holiday to minimize disruption on sensitive uses.
- Implement noise attenuation measures to the extent feasible, which may include, but are not limited to, temporary noise barriers or noise blankets around stationary construction noise sources.
- Use electric air compressors and similar power tools rather than diesel equipment, where feasible.

- Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than 30 minutes.
- Construction hours, allowable workdays, and the phone number of the job superintendent shall be clearly posted at all construction entrances to allow for surrounding owners and residents to contact the job superintendent. If the City or the job superintendent receives a complaint, the superintendent shall investigate, take appropriate corrective action, and report the action taken to the reporting party.
- Contract specifications shall be included in construction documents, which shall be reviewed by the City prior to issuance of a grading or building permit (whichever is issued first).

MM N-2 Project applicants shall require by contract specifications that heavily loaded trucks used during construction would be routed away from residential streets to the extent feasible. Contract specifications shall be included in construction documents, which shall be reviewed by the City prior to issuance of a grading permit.

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1 INTRODUCTION

This noise analysis has been completed to determine the noise impacts associated with the development of the proposed Goodman Logistics Center Fullerton ("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 65.4-net-acre[1] Project site is located at the northeast corner of the Orangethorpe Avenue and Acacia Avenue intersection and is bounded by Acacia Avenue to the west, Kimberly Avenue and BNSF railroad tracks to the north, State College Boulevard to the east, and Orangethorpe Avenue to the south. The adjacent off-site property at 2301 E. Orangethorpe Avenue that may be acquired by the Project Applicant encompasses approximately 0.7 acres. The Project site and off-site property location is shown on Exhibit 1-A.

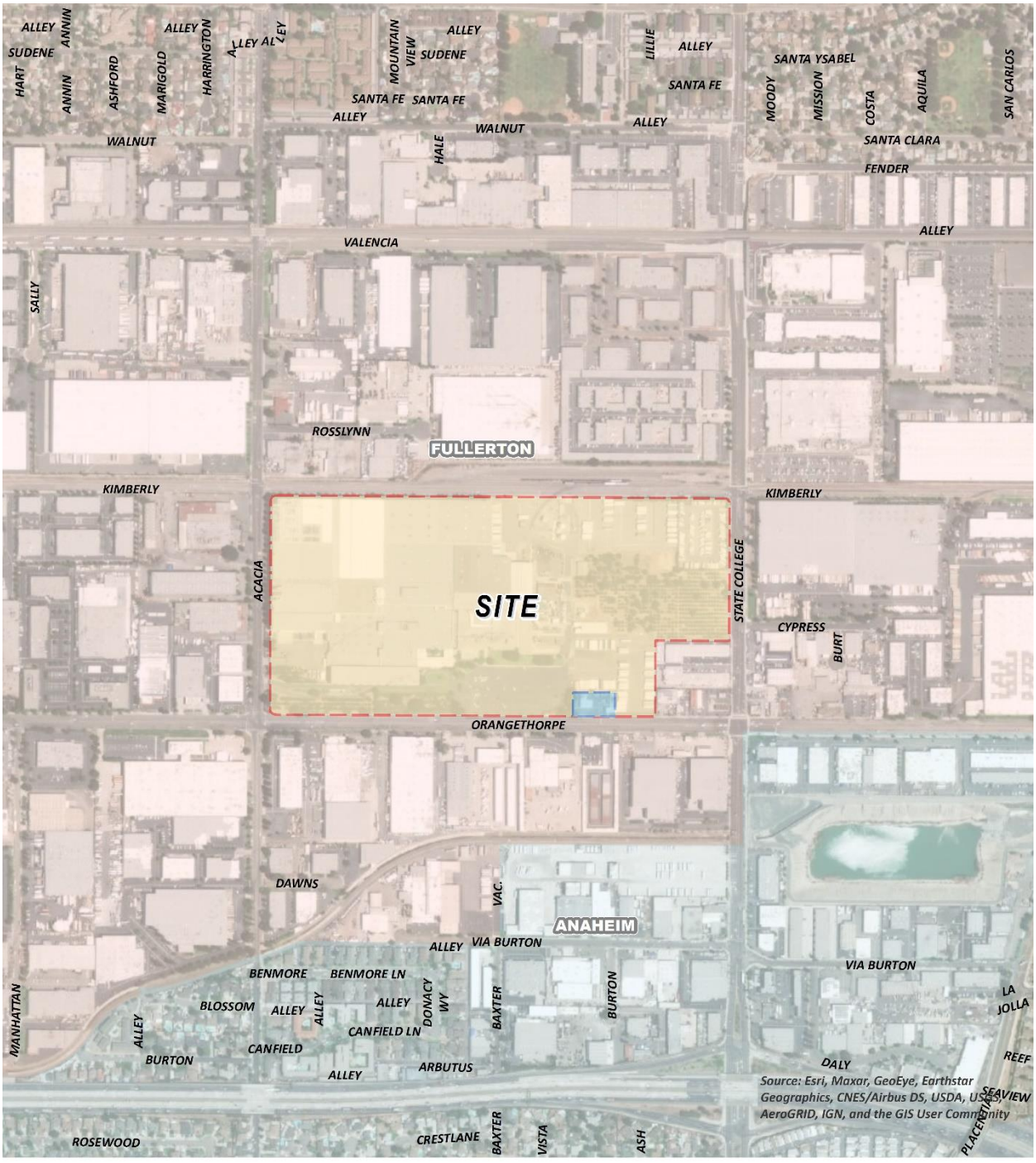
Regional access to the Project site is provided from State Route (SR)-57 and SR-91 located east and south of the Project site, respectively. The Project site is currently occupied by a Kimberly-Clark manufacturing facility, which includes 1,210,720 square feet (sf) of existing manufacturing and warehouse buildings. Kimberly-Clark's operations and associated use of the site will terminate by June 2020. The proposed Project and neighboring land uses are consistent with the industrial land use designation and the growth assumptions for the Southeast Industrial Focus Area anticipated in City of Fullerton General Plan.

1.2 PROJECT DESCRIPTION

The Project involves the demolition of all existing structures on the Project site, and the redevelopment of the Project with four buildings totaling 1,561,522 square feet (sf) as shown on Exhibit 1-B. This includes 1,456,522 sf of warehouse space – expected to be used for fulfillment center and cold storage uses – and approximately 105,000 sf of office space (ground floor and mezzanine). The Project Applicant may pursue the acquisition of an off-site property located north of E. Orangethorpe Avenue that abuts the southern boundary of the Project site (2301 E. Orangethorpe Avenue) as shown on Exhibit 1-C. In the event this property is acquired, the two existing buildings on that property would also be demolished and a maximum of approximately 1,609,384 sf of high cube warehouse space would be provided on the Project site. The larger Project (Optional Site Plan) is the basis for analysis in this report to provide a conservative worst-case impact analysis and assumes 804,692 square feet of high cube fulfillment center use and 804,692 square feet of high-cube cold storage warehouse use (inclusive of office space).

[1] The Project site encompasses approximately 73.1 gross acres, which includes an easement for City of Fullerton Water Department facilities, areas to be dedicated for access improvements along the site-adjacent roadways, and public roadway right-of-way.

EXHIBIT 1-A: LOCATION MAP



LEGEND:

- Site Boundary
- Potential Expansion Site
- City of Fullerton
- City of Anaheim

EXHIBIT 1-B: SITE PLAN

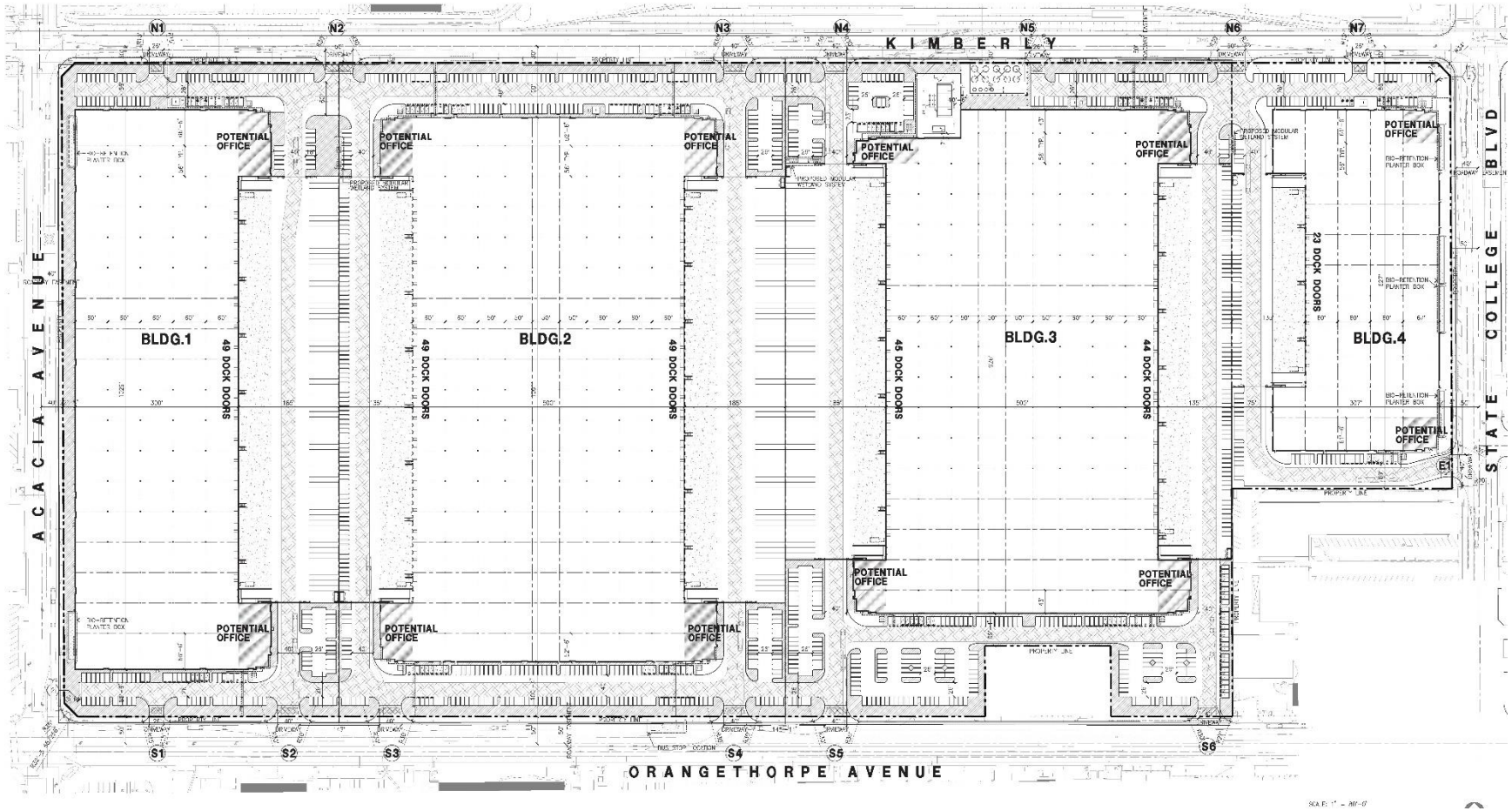
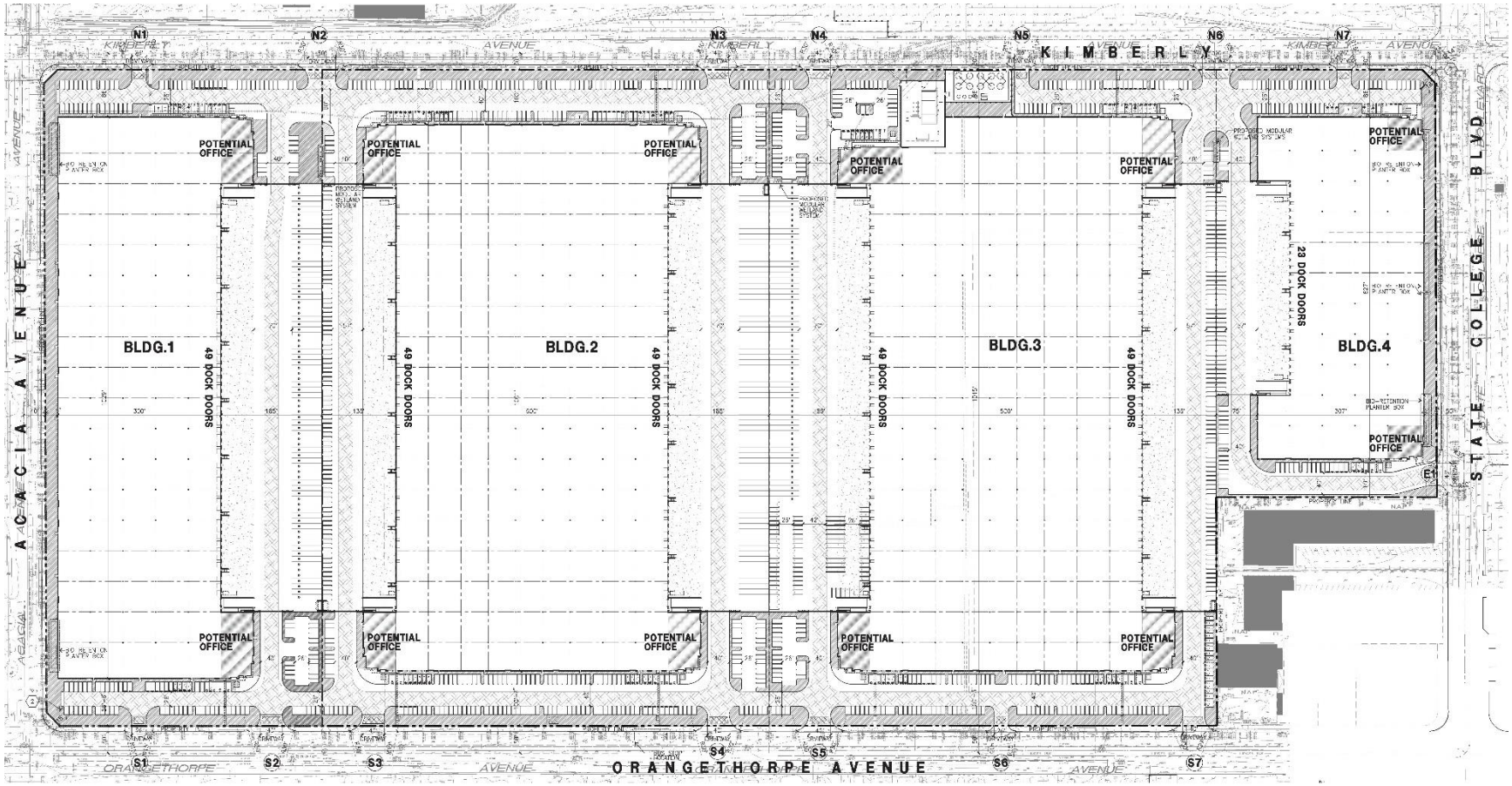


EXHIBIT 1-C: OPTIONAL SITE PLAN



The primary noise-generating on-site Project-related noise sources are expected to be loading dock activity, entry gate & truck movements, roof-top air conditioning units, and trash enclosure activity. This noise analysis is intended to describe noise level impacts associated with the expected maximum noise-generating operational activities at the Project site. To present a conservative approach, this report assumes the Project will operate 24-hours daily for seven days per week. Further, because noise levels generated by cold storage loading dock activity can be slightly higher due to the use of refrigerated trucks or reefers, this analysis conservatively assumes that all loading dock activity is associated with cold storage facilities, even though only 50 percent cold storage is anticipated.

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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. (4) 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. (5) 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 City of Fullerton relies on the percentile noise levels to describe the stationary source noise level limits with respect to residentially zoned properties and sensitive uses (collectively termed sensitive receivers for purposes of this Noise Study). 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 City of Fullerton 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. (4)

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. (6)

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. (4)

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 FHWA does not consider the planting of vegetation to be a noise abatement measure. (6)

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. (6) 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. (6)

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. (7)

2.7 COMMUNITY RESPONSE TO NOISE

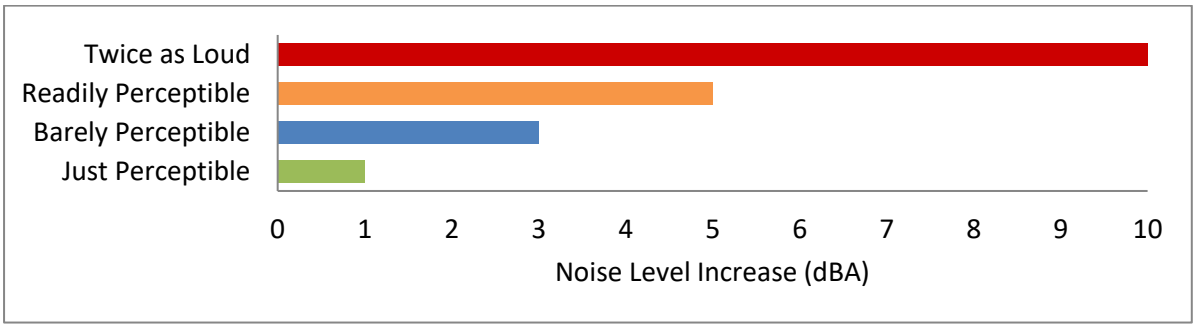
Community responses to noise may range from registering a complaint by telephone or letter, to initiating court action, depending upon everyone's susceptibility to noise and personal attitudes about noise. Several factors are related to the level of community annoyance including:

- 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. (8) 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. (8) 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 are considered *barely perceptible*, and changes of 5 dBA are considered *readily perceptible*. (6)

EXHIBIT 2-B: NOISE LEVEL INCREASE PERCEPTION



2.8 VIBRATION

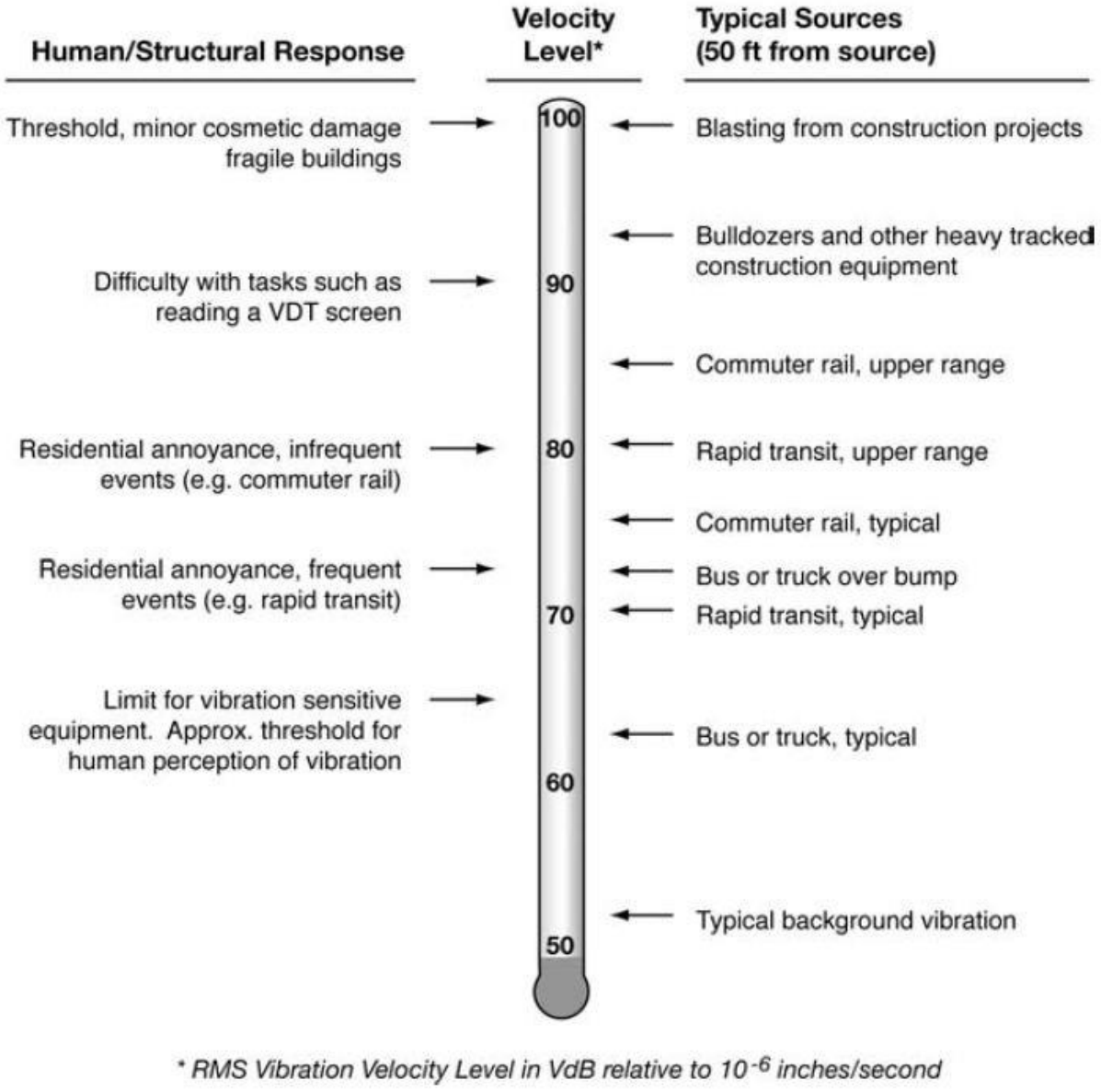
The California Building Code, The Fullerton Plan, and The Fullerton Municipal Code do not have guidance for assessing vibration levels. Therefore, consistent with The Fullerton Plan EIR, the Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment Manual* (3), which provides technical guidance for predicting and assessing noise and vibration impacts is used for purposes of this analysis. According to the FTA, 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 Impact and Vibration Assessment.

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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). (9) The purpose of the Noise 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 STATE OF CALIFORNIA GREEN BUILDING STANDARDS CODE

The State of California's Green Building Standards Code contains mandatory measures for non-residential building construction in Section 5.507 on Environmental Comfort. (10) These noise standards are applied to new construction in California for controlling interior noise levels resulting from exterior noise sources. The regulations specify that acoustical studies must be prepared when non-residential structures are developed in areas where the exterior noise levels exceed 65 dBA CNEL, such as within a noise contour of an airport, freeway, railroad, and other areas where noise contours are not readily available. If the development falls within an airport or freeway 65 dBA CNEL noise contour, the combined sound transmission class (STC) rating of the wall and roof-ceiling assemblies must be at least 50. For those developments in areas where noise contours are not readily available and the noise level exceeds 65 dBA L_{eq} for any hour of operation, a wall and roof-ceiling combined STC rating of 45, and exterior windows with a minimum STC rating of 40 are required (Section 5.507.4.1).

3.3 CITY OF FULLERTON GENERAL PLAN

The City of Fullerton has adopted Chapter 7, Noise, of *The Fullerton Plan* to identify the potential for noise conflicts and identify ways of reducing potential noise impacts. (11) The policies provided below are identified by *The Fullerton Plan* for potential noise issues:

P8.2 ***Mobile Sources:*** *Support projects, programs, policies and regulations to control and abate noise generated by mobile sources.*

P8.3 ***Consideration of Noise in Land Use Decisions:*** *Support projects, programs, policies and regulations which ensure noise-compatible land use planning recognizing the relative importance of noise sources in order of community impact, the local attitudes towards these sources, and the suburban or urban characteristics of the environment, while identifying noise sensitive uses.*

P8.4 ***Noise Reduction Measures:*** *Support projects, programs, policies and regulations to control and abate noise generated by stationary sources.*

P8.5 ***Focus Area Planning:*** *Support projects, programs, policies and regulations to evaluate ways to ensure noise compatible land use planning as part of community-based planning of Focus Areas.*

P8.6 ***Noise Receptors:*** *Support projects, programs, policies and regulations to permit uses where the noise level of the surroundings—after taking into account noise insulation features and other control techniques of the use—is not detrimental to the use.*

P8.7 ***Noise Generators:*** *Support projects, programs, policies and regulations to permit uses and/or activities where the noise generated by the use and/or activity is not detrimental or otherwise a nuisance to the surroundings.*

The noise criteria identified in *The Fullerton Plan*, Table 8, shown here as Exhibit 3-A, provides the City with a planning tool to gauge the compatibility of land uses relative to existing and future exterior noise levels. The *Land Use Compatibility for Community Noise Environments* matrix indicates that the Project industrial land uses are considered *normally acceptable* with exterior noise levels between 50 and 75 CNEL, and *conditionally acceptable* with noise levels between 70 and 80 dBA CNEL. For *conditionally acceptable* land uses, *new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features have been included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.* (11)

EXHIBIT 3-A: LAND USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENTS

Land Use Category	Community Noise Exposure (CNEL)			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential-Low Density, Single-Family, Duplex, Mobile Homes	50 - 60	55 - 70	70 – 75	75 – 85
Residential – Multiple Family	50 – 65	60 – 70	70 – 75	70 – 85
Transient Lodging – Motel, Hotels	50 – 65	60 – 70	70 – 80	80 – 85
Schools, Libraries, Churches, Hospitals, Nursing Homes	50 – 70	60 – 70	70 – 80	80 – 85
Auditoriums, Concert Halls, Amphitheaters	NA	50 – 70	NA	65 – 85
Sports Arenas, Outdoor Spectator Sports	NA	50 – 75	NA	70 – 85
Playgrounds, Neighborhood Parks	50 – 70	NA	67.5 – 77.5	72.5 – 85
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50 – 70	NA	70 – 80	80 – 85
Office Buildings, Business Commercial and Professional	50 – 70	67.5 – 77.5	75 – 85	N/A
Industrial, Manufacturing, Utilities, Agriculture	50 – 75	70 – 80	75 – 85	N/A

CNEL = community noise equivalent level; NA = not applicable

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

CONDITIONALLY ACCEPTABLE: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features have been included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.

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

CLEARLY UNACCEPTABLE: New construction or development should generally not be undertaken.

Source: Office of Planning and Research, California, General Plan Guidelines, October 2003.

3.4 CONSTRUCTION AND OPERATIONAL NOISE STANDARDS

Although the Project site is located within the City of Fullerton, noise-sensitive receivers potentially impacted by operational noise activities are also located in the City of Anaheim. Therefore, to accurately describe the potential Project-related operational noise level contributions, this analysis presents the appropriate operational noise standards for the City of Fullerton and the City of Anaheim.

3.4.1 CITY OF FULLERTON

To minimize the operational (stationary-source) noise activity from industrial land use, the City of Fullerton Municipal Code, Section 15.40.080 requires that *sound related to industrial or manufacturing processes shall comply* with the *Noise Standards and Regulations* outlined in Chapter 15.90. This chapter outlines noise standards for *sensitive receivers* that includes *all property within the residential noise zone* (Section 15.90.030(A)) and *any private or public school, hospital, residential care facility for the elderly, and religious institutions* (Section 15.90.30(B)(1)). For sensitive receivers, the City of Fullerton Municipal Code, Section 15.90.030, identifies operational noise level limits using the percentile noise descriptors. The L_{50} percentile noise descriptor identifies the noise levels occurring 50 percent of the time. These standards shall not exceed:

- The noise standard for a cumulative period of more than 30 minutes in any hour (L_{50})
- The noise standard plus 5 dB(A) for a cumulative period of more than 15 minutes but less than 30 minutes in any hour (L_{25})
- The noise standard plus 10 dB(A) for a cumulative period of more than 5 minutes but less than 15 minutes in any hour (L_8)
- The noise standard plus 15 dB(A) for a cumulative period of more than one minute but less than five minutes in any hour (L_2)
- The noise standard plus 20 dB(A) for a cumulative period of less than one minute in an hour (L_{max}).

In the event the ambient noise level exceeds any of the five noise limit categories listed above, the cumulative period applicable to the category shall be increased to reflect the ambient noise level. The City does not have specific noise level limits for commercial or industrial zones. Rather, the Municipal Code regulates the noise caused by any use on a sensitive receiver. The exterior noise level standards of the City of Fullerton Municipal Code applicable to the sensitive receivers are shown on Table 3-1 and included in Appendix 3.1 where Daytime is 7:00 a.m. to 10:00 p.m. and Nighttime is 10:00 p.m. to 7:00 a.m.

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.)	50	55	60	65	70

[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. (City of Fullerton Municipal Code, Section 15.90.030 included in Appendix 3.1).

Noise sources associated with construction, repair, remodeling, or grading of any real property are exempt from noise level standards provide they take place between the hours of 7:00 a.m. and 8:00 p.m. on any day except Sunday or a City-recognized holiday.

3.4.2 CITY OF ANAHEIM

The City of Anaheim Municipal Code, Chapter 6.70 *Sound Pressure Levels,* included in Appendix 3.2, limits sound levels for stationary sources of noise radiated for extended periods from any premises in excess of 60 decibels at the property line. (12) Sound created by construction or building repair of any premises within the City of Anaheim is exempt from the applications of the Municipal Code during the hours of 7:00 a.m. and 7:00 p.m. Chapter 6.70 of the City of Anaheim Municipal Code is included in Appendix 3.2.

3.5 VIBRATION STANDARDS

Construction activity can result in varying degrees of ground-borne vibration, depending on the equipment and methods used, distance to the affected structures and soil type. Construction vibration is generally associated with pile driving and rock blasting. Other construction equipment such as air compressors, light trucks, hydraulic loaders, etc., generates little or no ground vibration. (3) The City of Fullerton does not identify specific vibration level limits and instead will rely on the Federal Transit Administration (FTA) methodology for the purpose of analyzing vibration impacts from the proposed project. The FTA *Transit Noise and Vibration Impact Assessment* methodology provides guidelines for the maximum-acceptable vibration criteria for different types of land uses. These guidelines allow 90 VdB for industrial (workshop) use, 84 VdB for office use and 78 VdB for daytime residential uses and 72 VdB for nighttime uses in buildings where people normally sleep. (3)

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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. (1) 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?

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 Fullerton Municipal Airport located over 4.5 miles west 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 SIGNIFICANCE CRITERIA SUMMARY

Noise impacts shall be considered significant if any of the following occur as a direct result of the proposed development.

OFF-SITE TRAFFIC NOISE

Table 5.6-7 of The Fullerton Plan Final Program EIR noise section presents the thresholds of *Significance of Changes in Cumulative Noise Exposure* and is used to describe the amount to which a given exterior noise level increase is considered acceptable. According to Table 5.6-7 an increase in ambient noise levels is assumed to be a significant noise impact if a project causes ambient noise levels to exceed the following at noise sensitive locations:

- Where the existing ambient noise level is less than 60 dBA, a project related permanent increase in ambient noise levels of 5 dBA CNEL or greater.
- Where the existing ambient noise level is greater than 60 dBA, a project related permanent increase in ambient noise levels of 3 dBA CNEL or greater.

LONG-TERM OPERATIONAL NOISE & VIBRATION

- If Project-related operational (stationary-source) noise levels:
    - exceed the exterior 55 dBA L_{50} daytime or 50 dBA L_{50} nighttime noise level standards for sensitive receivers. These standards shall not be exceeded plus 5 dBA for a cumulative period of more than 15 minutes but less than 30 minutes in any hour (L_{25}), or plus 10 dB(A) for a cumulative period of more than 5 minutes but less than 15 minutes in any

hour (L_8), or plus 15 dB(A) for a cumulative period of more than one minute but less than five minutes in any hour (L_2), or plus 20 dB(A) for a cumulative period of less than one minute in an hour (L_{max}). In the event the ambient noise level exceeds any of the five noise limit categories listed above, the cumulative period applicable to the category shall be increased to reflect the ambient noise level. (City of Fullerton Municipal Code, Section 15.90.030).

- exceed the 60 dBA Leq anytime noise level standard at the property line (City of Anaheim Municipal Code Section 6.70)

- If the existing ambient noise levels at the noise-sensitive receivers near the Project site:
  - are less than 60 dBA L_{eq} and the Project creates a 5 dBA L_{eq} or greater Project-related noise level increase; or
  - are greater than 60 L_{eq} and the Project creates a 3 dBA L_{eq} or greater Project-related noise level increase; or
- If Project generated operational vibration levels exceed the FTA's acceptable vibration thresholds of 78 VdB for daytime residential use and 72 VdB for nighttime uses in buildings where people normally sleep. (FTA Transit Noise and Vibration Impact Assessment).

SHORT-TERM CONSTRUCTION NOISE & VIBRATION

The City of Fullerton and City of Anaheim both exempt noise from construction from compliance with Noise Standards within identified hours. For purposes of performing a conservative analysis however, the following criteria are applied to daytime and night-time construction-related noise:

- If Project-related construction noise levels:
  - exceed the exterior 55 dBA L_{50} daytime or 50 dBA L_{50} nighttime noise level standards for sensitive receivers. These standards shall not be exceeded plus 5 dBA for a cumulative period of more than 15 minutes but less than 30 minutes in any hour (L_{25}), or plus 10 dB(A) for a cumulative period of more than 5 minutes but less than 15 minutes in any hour (L_8), or plus 15 dB(A) for a cumulative period of more than one minute but less than five minutes in any hour (L_2), or plus 20 dB(A) for a cumulative period of less than one minute in an hour (L_{max}). In the event the ambient noise level exceeds any of the five noise limit categories listed above, the cumulative period applicable to the category shall be increased to reflect the ambient noise level. (City of Fullerton Municipal Code, Section 15.90.030).
  - exceed the 60 dBA Leq anytime noise level standard at the property line (City of Anaheim Municipal Code Section 6.70)
- If Project generated construction vibration levels exceed the FTA's acceptable vibration thresholds of 78 VdB for daytime residential use and 72 VdB for nighttime uses in buildings where people normally sleep. (FTA Transit Noise and Vibration Impact Assessment).

5 EXISTING NOISE LEVEL MEASUREMENTS

To assess the existing noise level environment, 24-hour noise level measurements were taken at seven locations in the Project study area. The receiver locations were selected to describe and document the existing noise environment within the Project study area. Exhibit 5-A provides the boundaries of the Project study area and the noise level measurement locations. To fully describe the existing noise conditions, noise level measurements were collected by Urban Crossroads, Inc. on Wednesday, April 29, 2020. Appendix 5.1 includes study area photos. These measurements represent background ambient noise conditions during the mandatory State of California stay at home order due to the Covid-19 pandemic. Based on a comparison of existing noise level measurements taken in December 2019, we were able to estimate a 2.5 dBA L_{eq} reduction in noise levels due to the stay at home order. Therefore, the noise levels presented below conservatively overstate the relative project noise level increases to compensate for the lower ambient noise level measurements.

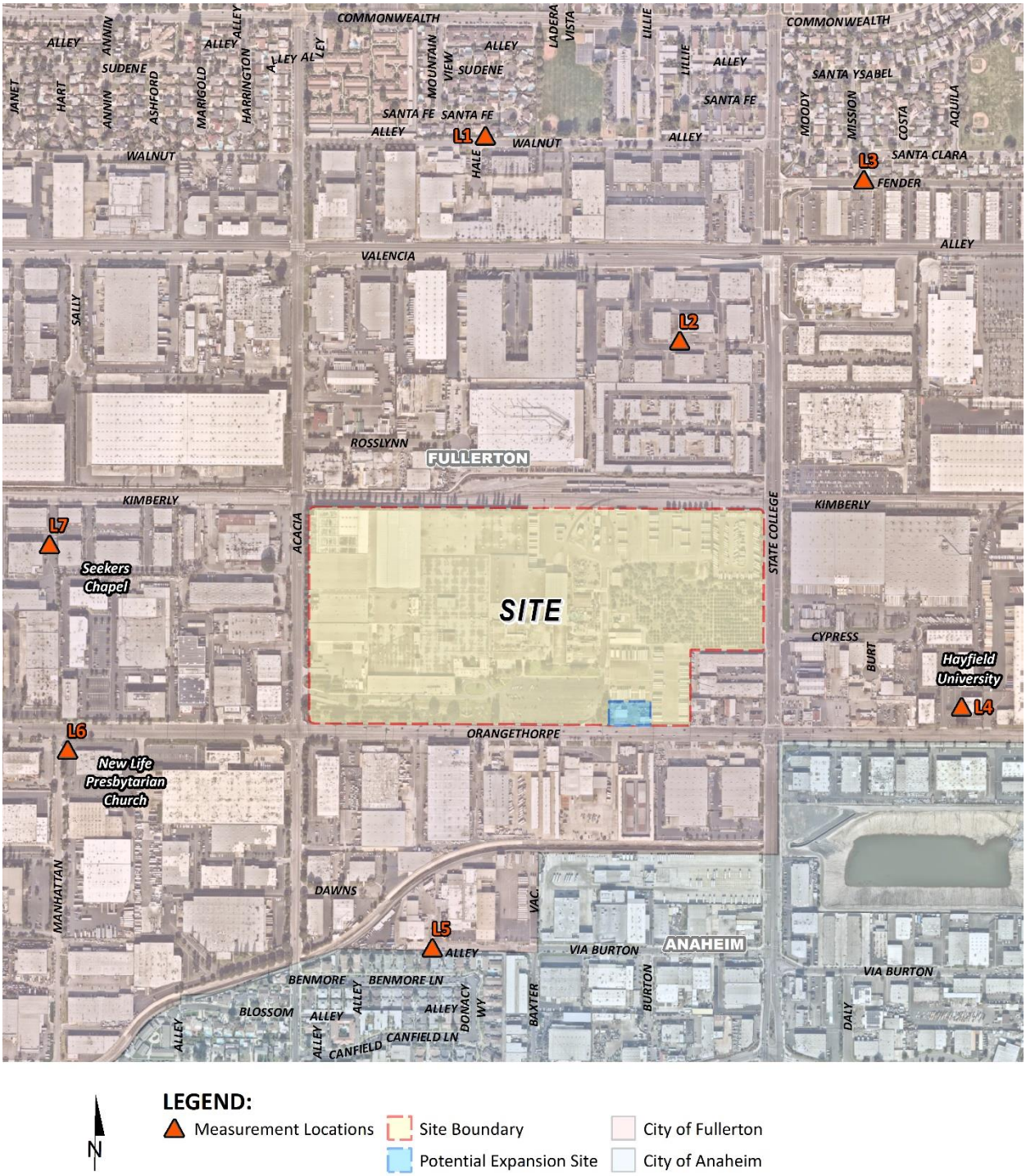
5.1 MEASUREMENT PROCEDURE AND CRITERIA

To describe the existing noise environment, the hourly noise levels were measured 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. (13)

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 site. 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*. (4) 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*. (3)

EXHIBIT 5-A: NOISE MEASUREMENT LOCATIONS



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. (3) 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 nearest 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.

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. Except for Location L5, which is in the City of Anaheim, each measurement location is in the City of Fullerton. These locations were largely selected to describe the existing ambient noise level conditions at similar distances north, south, east, and west of the Project site. These measurement locations will be used to assess the incremental Project noise level increases attributed to the Project. Appendix 5.2 provides a summary of the existing hourly ambient noise levels described below:

- Location L1 represents the noise levels north of the Project site on Walnut Avenue near existing single-family residential home at 2016 E Santa Fe Avenue. This location describes the closest residential neighborhoods at the transition from industrial to residential to the north. The noise levels at this location consist primarily of traffic noise from Walnut Avenue. The noise level measurements collected show an overall 24-hour exterior noise level of 66.2 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 64.9 dBA L_{eq} with an average nighttime noise level of 57.5 dBA L_{eq}.

- Location L2 represents the noise levels north of the Project site at 637 South State College Boulevard. The ambient noise levels at this location account parking lot vehicle movements as well as traffic noise from Valencia Drive and State College Boulevard. The noise level measurements collected show an overall 24-hour exterior noise level of 64.7 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 63.0 dBA L_{eq} with an average nighttime noise level of 56.2 dBA L_{eq}.

- Location L3 represents the noise levels northeast of the Project site on Fender Avenue near existing single-family residential home at 2400 Santa Clara Avenue. This location describes the closest residential neighborhoods at the transition from industrial to residential to the northeast. The 24-hour CNEL indicates that the overall exterior noise level is 67.9 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 65.4 dBA L_{eq} with an average nighttime noise level of 59.8 dBA L_{eq}. Background traffic noise from Fender Avenue represents the primary source of noise at this location.

- Location L4 represents the noise levels east of the Project site near Hayfield University. The noise level measurements collected show an overall 24-hour exterior noise level of 66.4 dBA CNEL. The

energy (logarithmic) average daytime noise level was calculated at 62.5 dBA L_{eq} with an average nighttime noise level of 59.0 dBA L_{eq}. The noise levels at this location consist primarily of traffic noise from East Orangethorpe Avenue and parking lot vehicle movements.

- Location L5 represents the noise levels south of the Project site near existing single-family residential homes at 1545 E Benmore Lane in the City of Anaheim. The 24-hour CNEL indicates that the overall exterior noise level is 68.9 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 63.0 dBA L_{eq} with an average nighttime noise level of 62.2 dBA L_{eq}. Traffic on Benmore Lane represents the primary source of noise at this location.

- Location L6 represents the noise levels southwest of the Project site near the New Life Presbyterian Church. The 24-hour CNEL indicates that the overall exterior noise level is 65.5 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 61.4 dBA L_{eq} with an average nighttime noise level of 58.3 dBA L_{eq}. Traffic on East Orangethorpe Avenue represents the primary source of noise at this location.

- Location L7 represents the noise levels west of the Project site near Seekers Chapel. The 24-hour CNEL indicates that the overall exterior noise level is 58.1 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 54.8 dBA L_{eq} with an average nighttime noise level of 50.6 dBA L_{eq}. Parking lot vehicle movements and traffic on Kimberly Avenue represent the primary source of noise at this location.

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

Location[1]	Description	Energy Average Noise Level (dBA L_{eq})[2]		CNEL
		Daytime	Nighttime	
L1	Located north of the Project site on Walnut Avenue near existing single-family residential home at 2016 E Santa Fe Avenue.	64.9	57.5	66.2
L2	Located northeast of the Project site near 637 South State College Boulevard.	63.0	56.2	64.7
L3	Located northeast of the Project site on Fender avenue near existing single-family residential home at 2400 Santa Clara Avenue.	65.4	59.8	67.9
L4	Located east of the Project site near Hayfield University.	62.5	59.0	66.4
L5	Located south of the Project site near existing single-family residential homes at 1545 E Benmore Lane.	63.0	62.2	68.9
L6	Located southwest of the Project site near the New Life Presbyterian Church.	61.4	58.3	65.5
L7	Located east of the Project site near Seekers Chapel.	54.8	50.6	58.1

[1] See Exhibit 5-A 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 OFF-SITE TRAFFIC NOISE METHODS AND PROCEDURES

The following section outlines the methods and procedures used to model and analyze the future traffic noise environment. Consistent with the *Land Use Compatibility for Community Noise Environments*, 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. (14) 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. (15) 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. (16)

6.2 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 31 study area roadway segments, the distance from the centerline to adjacent land use based on the functional roadway classifications per The Fullerton Plan Mobility Chapter, and the posted vehicle speeds. The ADT volumes used in this study area presented on Table 6-2 are based on the *Goodman Logistics Center Fullerton Traffic Analysis* for warehousing use, prepared by Urban Crossroads, Inc. for the following traffic scenarios under both Without and With Project alternatives: Existing, and Opening Year (2022). (2)

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, 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 Receiving Land Use (Feet)[2]	Vehicle Speed (mph)[3]
1	Raymond Av.	n/o Kimberly Av.	I	42'	40
2	Raymond Av.	s/o Kimberly Av.	I	42'	40
3	Raymond Av.	s/o Orangethorpe Av.	I	42'	40
4	Raymond Av.	s/o SR-91 Westbound Ramps	I	45'	50
5	Raymond Av.	s/o SR-91 Eastbound Ramps	EDR/MDR/GC/NCR	45'	50
6	Acacia Av.	n/o Kimberly Av.	I	40'	40
7	Acacia Av.	s/o Kimberly Av.	I	40'	40
8	N. State College Bl.	n/o Chapman Av.	C/LDR/HDR	50'	40
9	N. State College Bl.	s/o Chapman Av.	C/LMDR/LDR	50'	35
10	N. State College Bl.	s/o Commonwealth Av.	MDR/LDR/I	50'	40
11	N. State College Bl.	s/o Kimberly Av.	I	50'	40
12	N. State College Bl.	s/o Dwy. 16	I	50'	40
13	N. State College Bl.	s/o Orangethorpe Av.	I/GC/I/WU	50'	40
14	N. State College Bl.	s/o SR-91 Westbound Ramps	I/LDR/MDR	53'	55
15	N. State College Bl.	s/o SR-91 Eastbound Ramps	LDR/MDR	53'	55
16	S. Placentia Av.	n/o Kimberly Av.	I	42'	40
17	S. Placentia Av.	s/o Kimberly Av.	I	42'	40
18	Kimberly Av.	e/o Raymond Av.	I	30'	45
19	Kimberly Av.	e/o Dwy. 5	I	30'	45
20	Kimberly Av.	e/o Dwy. 11	I	30'	45
21	Orangethorpe Av.	w/o Raymond Av.	GC/OL/I	50'	40
22	Orangethorpe Av.	e/o Raymond Av.	I	50'	45
23	Orangethorpe Av.	e/o Acacia Av.	I	50'	45
24	Orangethorpe Av.	e/o Dwy. 6	I	50'	45
25	Orangethorpe Av.	e/o Dwy. 10	I	50'	45
26	Orangethorpe Av.	w/o N. State College Bl.	I	50'	45
27	Orangethorpe Av.	e/o N. State College Bl.	I	50'	45
28	Orangethorpe Av.	w/o S. Placentia Av.	I	50'	45
29	Orangethorpe Av.	e/o S. Placentia Av.	LDR/I/C	60'	45
30	Orangethorpe Av.	e/o SR-57 Southbound Ramps	LDR/C	60'	45
31	Orangethorpe Av.	e/o SR-57 Northbound Ramps	LDR/C/I/CM	60'	45

[1] The Fullerton Plan Community Development Plan, City of Anaheim General Plan Land Use Plan, City of Placentia General Plan Land Use Map.
[2] Distance to receiving land use is based upon the right-of-way distances.
[3] Goodman Logistics Center Traffic Analysis.
"I"= Industrial; "EDR"= Estate Density Residential; "NCR"= Neighborhood Center Commercial; "C"= Commercial; "LDR"= Low Density Residential; "HDR"= High Density Residential; "LMDR"= Low-Medium Density Residential; "MDR"= Medium Density Residential; "WU"= Water Uses; "GC"= General Commercial; "OL"= Office Low; "CM"= Commercial-Manufacturing.

TABLE 6-2: AVERAGE DAILY TRAFFIC VOLUMES

ID	Roadway	Segment	Average Daily Traffic Volumes[1]			
			Existing (2020)		Opening Year Cumulative (2022)	
			Without Project	With Project	Without Project	With Project
1	Raymond Av.	n/o Kimberly Av.	23,031	23,157	24,580	24,706
2	Raymond Av.	s/o Kimberly Av.	23,511	23,636	24,861	24,987
3	Raymond Av.	s/o Orangethorpe Av.	29,674	29,971	31,037	31,334
4	Raymond Av.	s/o SR-91 Westbound Ramps	28,583	28,709	29,684	29,810
5	Raymond Av.	s/o SR-91 Eastbound Ramps	29,102	29,228	29,973	30,099
6	Acacia Av.	n/o Kimberly Av.	7,815	7,941	8,188	8,314
7	Acacia Av.	s/o Kimberly Av.	7,548	7,926	7,772	8,150
8	N. State College Bl.	n/o Chapman Av.	36,863	37,160	37,766	38,063
9	N. State College Bl.	s/o Chapman Av.	25,624	25,921	26,431	26,728
10	N. State College Bl.	s/o Commonwealth Av.	23,284	23,581	24,276	24,573
11	N. State College Bl.	s/o Kimberly Av.	23,058	24,084	23,525	24,551
12	N. State College Bl.	s/o Dwy. 16	23,244	24,373	23,716	24,844
13	N. State College Bl.	s/o Orangethorpe Av.	27,451	28,704	28,017	29,269
14	N. State College Bl.	s/o SR-91 Westbound Ramps	26,945	27,585	27,501	28,141
15	N. State College Bl.	s/o SR-91 Eastbound Ramps	22,525	22,651	22,992	23,118
16	S. Placentia Av.	n/o Kimberly Av.	20,981	21,107	23,741	23,867
17	S. Placentia Av.	s/o Kimberly Av.	20,848	20,974	22,809	22,935
18	Kimberly Av.	e/o Raymond Av.	1,890	2,142	2,136	2,388
19	Kimberly Av.	e/o Dwy. 5	1,917	2,481	2,230	2,794
20	Kimberly Av.	e/o Dwy. 11	1,837	2,671	2,148	2,982
21	Orangethorpe Av.	w/o Raymond Av.	34,347	34,644	35,670	35,966
22	Orangethorpe Av.	e/o Raymond Av.	32,976	33,444	33,929	34,397
23	Orangethorpe Av.	e/o Acacia Av.	32,284	32,768	33,295	33,779
24	Orangethorpe Av.	e/o Dwy. 6	32,284	32,756	33,295	33,767
25	Orangethorpe Av.	e/o Dwy. 10	32,018	32,785	33,023	33,790
26	Orangethorpe Av.	w/o N. State College Bl.	32,018	33,169	33,023	34,175
27	Orangethorpe Av.	e/o N. State College Bl.	31,006	32,032	31,981	33,007
28	Orangethorpe Av.	w/o S. Placentia Av.	29,568	30,594	30,514	31,541
29	Orangethorpe Av.	e/o S. Placentia Av.	31,698	32,599	33,419	34,320
30	Orangethorpe Av.	e/o SR-57 Southbound Ramps	35,266	35,780	36,686	37,199
31	Orangethorpe Av.	e/o SR-57 Northbound Ramps	37,050	37,176	38,133	38,259

[1] Source: Goodman Logistics Center Traffic Analysis.

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 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 6-6 show the vehicle mixes used for the with Project traffic scenarios.

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] County of Orange Land Use/Noise Compatibility Manual, December 1993. Values rounded to the nearest one-hundredth.
"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			Total
	Autos	Medium Trucks	Heavy Trucks	
All Segments	96.36%	2.47%	1.17%	100.00%

Based on a 24-hour count taken at State College Boulevard and Kimberly Avenue (Goodman Logistics Center Traffic Analysis, Urban Crossroads, Inc.). Vehicle mix percentage 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	Raymond Av.	n/o Kimberly Av.	96.38%	2.46%	1.16%	100.00%
2	Raymond Av.	s/o Kimberly Av.	96.38%	2.46%	1.16%	100.00%
3	Raymond Av.	s/o Orangethorpe Av.	96.24%	2.52%	1.24%	100.00%
4	Raymond Av.	s/o SR-91 Westbound Ramps	96.37%	2.46%	1.16%	100.00%
5	Raymond Av.	s/o SR-91 Eastbound Ramps	96.37%	2.46%	1.16%	100.00%
6	Acacia Av.	n/o Kimberly Av.	96.41%	2.44%	1.15%	100.00%
7	Acacia Av.	s/o Kimberly Av.	96.53%	2.36%	1.11%	100.00%
8	N. State College Bl.	n/o Chapman Av.	96.26%	2.51%	1.23%	100.00%
9	N. State College Bl.	s/o Chapman Av.	96.22%	2.52%	1.25%	100.00%
10	N. State College Bl.	s/o Commonwealth Av.	96.21%	2.53%	1.26%	100.00%
11	N. State College Bl.	s/o Kimberly Av.	94.97%	3.06%	1.97%	100.00%
12	N. State College Bl.	s/o Dwy. 16	94.89%	3.09%	2.02%	100.00%
13	N. State College Bl.	s/o Orangethorpe Av.	94.78%	3.14%	2.08%	100.00%
14	N. State College Bl.	s/o SR-91 Westbound Ramps	95.95%	2.64%	1.41%	100.00%
15	N. State College Bl.	s/o SR-91 Eastbound Ramps	96.38%	2.46%	1.16%	100.00%
16	S. Placentia Av.	n/o Kimberly Av.	96.38%	2.46%	1.16%	100.00%
17	S. Placentia Av.	s/o Kimberly Av.	96.38%	2.46%	1.16%	100.00%
18	Kimberly Av.	e/o Raymond Av.	96.78%	2.18%	1.03%	100.00%
19	Kimberly Av.	e/o Dwy. 5	91.70%	4.37%	3.93%	100.00%
20	Kimberly Av.	e/o Dwy. 11	87.01%	6.38%	6.61%	100.00%
21	Orangethorpe Av.	w/o Raymond Av.	96.26%	2.51%	1.23%	100.00%
22	Orangethorpe Av.	e/o Raymond Av.	96.14%	2.56%	1.30%	100.00%
23	Orangethorpe Av.	e/o Acacia Av.	96.16%	2.55%	1.29%	100.00%
24	Orangethorpe Av.	e/o Dwy. 6	95.97%	2.64%	1.40%	100.00%
25	Orangethorpe Av.	e/o Dwy. 10	95.56%	2.81%	1.63%	100.00%
26	Orangethorpe Av.	w/o N. State College Bl.	95.36%	2.89%	1.75%	100.00%
27	Orangethorpe Av.	e/o N. State College Bl.	95.63%	2.77%	1.60%	100.00%
28	Orangethorpe Av.	w/o S. Placentia Av.	95.59%	2.79%	1.62%	100.00%
29	Orangethorpe Av.	e/o S. Placentia Av.	95.63%	2.78%	1.60%	100.00%
30	Orangethorpe Av.	e/o SR-57 Southbound Ramps	96.03%	2.61%	1.36%	100.00%
31	Orangethorpe Av.	e/o SR-57 Northbound Ramps	96.37%	2.47%	1.17%	100.00%

[1] Source: Goodman Logistics Center Traffic Analysis.
[2] Total of vehicle mix percentage values rounded to the nearest one-hundredth.

TABLE 6-6: OPENING YEAR (2022) WITH PROJECT VEHICLE MIX

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
1	Raymond Av.	n/o Kimberly Av.	96.37%	2.46%	1.16%	100.00%
2	Raymond Av.	s/o Kimberly Av.	96.37%	2.46%	1.16%	100.00%
3	Raymond Av.	s/o Orangethorpe Av.	96.25%	2.52%	1.24%	100.00%
4	Raymond Av.	s/o SR-91 Westbound Ramps	96.37%	2.46%	1.16%	100.00%
5	Raymond Av.	s/o SR-91 Eastbound Ramps	96.37%	2.46%	1.16%	100.00%
6	Acacia Av.	n/o Kimberly Av.	96.41%	2.44%	1.15%	100.00%
7	Acacia Av.	s/o Kimberly Av.	96.52%	2.36%	1.12%	100.00%
8	N. State College Bl.	n/o Chapman Av.	96.27%	2.51%	1.23%	100.00%
9	N. State College Bl.	s/o Chapman Av.	96.23%	2.52%	1.25%	100.00%
10	N. State College Bl.	s/o Commonwealth Av.	96.22%	2.53%	1.26%	100.00%
11	N. State College Bl.	s/o Kimberly Av.	95.00%	3.05%	1.96%	100.00%
12	N. State College Bl.	s/o Dwy. 16	94.92%	3.08%	2.00%	100.00%
13	N. State College Bl.	s/o Orangethorpe Av.	94.81%	3.13%	2.06%	100.00%
14	N. State College Bl.	s/o SR-91 Westbound Ramps	95.96%	2.64%	1.41%	100.00%
15	N. State College Bl.	s/o SR-91 Eastbound Ramps	96.38%	2.46%	1.16%	100.00%
16	S. Placentia Av.	n/o Kimberly Av.	96.37%	2.46%	1.16%	100.00%
17	S. Placentia Av.	s/o Kimberly Av.	96.38%	2.46%	1.16%	100.00%
18	Kimberly Av.	e/o Raymond Av.	96.74%	2.21%	1.05%	100.00%
19	Kimberly Av.	e/o Dwy. 5	92.22%	4.16%	3.62%	100.00%
20	Kimberly Av.	e/o Dwy. 11	87.99%	5.97%	6.04%	100.00%
21	Orangethorpe Av.	w/o Raymond Av.	96.26%	2.51%	1.23%	100.00%
22	Orangethorpe Av.	e/o Raymond Av.	96.14%	2.56%	1.30%	100.00%
23	Orangethorpe Av.	e/o Acacia Av.	96.17%	2.55%	1.29%	100.00%
24	Orangethorpe Av.	e/o Dwy. 6	95.98%	2.63%	1.39%	100.00%
25	Orangethorpe Av.	e/o Dwy. 10	95.58%	2.80%	1.62%	100.00%
26	Orangethorpe Av.	w/o N. State College Bl.	95.39%	2.88%	1.73%	100.00%
27	Orangethorpe Av.	e/o N. State College Bl.	95.65%	2.76%	1.59%	100.00%
28	Orangethorpe Av.	w/o S. Placentia Av.	95.62%	2.78%	1.61%	100.00%
29	Orangethorpe Av.	e/o S. Placentia Av.	95.66%	2.76%	1.58%	100.00%
30	Orangethorpe Av.	e/o SR-57 Southbound Ramps	96.04%	2.60%	1.35%	100.00%
31	Orangethorpe Av.	e/o SR-57 Northbound Ramps	96.37%	2.47%	1.17%	100.00%

[1] Source: Goodman Logistics Center Traffic Analysis.
[2] Total of vehicle mix percentage values rounded to the nearest one-hundredth.

7 OFF-SITE TRAFFIC NOISE IMPACTS

To assess the off-site traffic CNEL noise level impacts associated with the proposed Project, noise contours were developed based on the *Goodman Logistics Center Fullerton Traffic Analysis*. (2) 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 24-hour dBA CNEL 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 CNEL 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 through 7-6 present a summary of the exterior dBA CNEL traffic noise levels without barrier attenuation. Roadway segments are analyzed without Project and with Project conditions in each of the following timeframes: Existing and Opening Year (2022). Appendix 7.1 includes a summary of the dBA CNEL traffic noise level contours for each of the traffic scenarios.

TABLE 7-1: EXISTING WITHOUT PROJECT NOISE 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	Raymond Av.	n/o Kimberly Av.	I	72.2	59	127	274
2	Raymond Av.	s/o Kimberly Av.	I	72.3	60	129	278
3	Raymond Av.	s/o Orangethorpe Av.	I	73.3	70	151	325
4	Raymond Av.	s/o SR-91 Westbound Ramps	I	74.3	87	188	406
5	Raymond Av.	s/o SR-91 Eastbound Ramps	EDR/MDR/GC/NCR	74.4	89	191	411
6	Acacia Av.	n/o Kimberly Av.	I	67.4	RW	58	125
7	Acacia Av.	s/o Kimberly Av.	I	67.3	RW	57	122
8	N. State College Bl.	n/o Chapman Av.	C/LDR/HDR	76.3	131	282	608
9	N. State College Bl.	s/o Chapman Av.	C/LMDR/LDR	73.3	84	180	388
10	N. State College Bl.	s/o Commonwealth Av.	MDR/LDR/I	74.3	96	208	448
11	N. State College Bl.	s/o Kimberly Av.	I	74.2	96	207	445
12	N. State College Bl.	s/o Dwy. 16	I	74.3	96	208	447
13	N. State College Bl.	s/o Orangethorpe Av.	I/GC/I/WU	75.0	108	232	500
14	N. State College Bl.	s/o SR-91 Westbound Ramps	I/LDR/MDR	75.6	125	270	582
15	N. State College Bl.	s/o SR-91 Eastbound Ramps	LDR/MDR	74.8	111	240	517
16	S. Placentia Av.	n/o Kimberly Av.	I	71.8	56	120	258
17	S. Placentia Av.	s/o Kimberly Av.	I	71.8	55	119	257
18	Kimberly Av.	e/o Raymond Av.	I	63.7	RW	RW	53
19	Kimberly Av.	e/o Dwy. 5	I	63.8	RW	RW	54
20	Kimberly Av.	e/o Dwy. 11	I	63.6	RW	RW	52
21	Orangethorpe Av.	w/o Raymond Av.	GC/OL/I	76.0	125	269	580
22	Orangethorpe Av.	e/o Raymond Av.	I	77.0	147	316	681
23	Orangethorpe Av.	e/o Acacia Av.	I	76.9	145	311	671
24	Orangethorpe Av.	e/o Dwy. 6	I	76.9	145	311	671
25	Orangethorpe Av.	e/o Dwy. 10	I	76.9	144	310	667
26	Orangethorpe Av.	w/o N. State College Bl.	I	76.9	144	310	667
27	Orangethorpe Av.	e/o N. State College Bl.	I	76.7	141	303	653
28	Orangethorpe Av.	w/o S. Placentia Av.	I	76.5	136	294	633
29	Orangethorpe Av.	e/o S. Placentia Av.	LDR/I/C	74.4	118	255	550
30	Orangethorpe Av.	e/o SR-57 Southbound Ramps	LDR/C	74.9	127	274	591
31	Orangethorpe Av.	e/o SR-57 Northbound Ramps	LDR/C/I/CM	75.1	131	283	610

[1] The Fullerton Plan Community Development Plan, City of Anaheim General Plan Land Use Plan, City of Placentia General Plan Land Use Map.
[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. "I"= Industrial; "EDR"= Estate Density Residential; "NCR"= Neighborhood Center Commercial; "C"= Commercial; "LDR"= Low Density Residential; "HDR"= High Density Residential; "LMDR"= Low-Medium Density Residential; "MDR"= Medium Density Residential; "WU"= Water Uses; "GC"= General Commercial; "OL"= Office Low; "CM"= Commercial-Manufacturing.

TABLE 7-2: EXISTING WITH PROJECT NOISE 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	Raymond Av.	n/o Kimberly Av.	I	72.2	59	128	275
2	Raymond Av.	s/o Kimberly Av.	I	72.3	60	129	278
3	Raymond Av.	s/o Orangethorpe Av.	I	73.4	71	154	331
4	Raymond Av.	s/o SR-91 Westbound Ramps	I	74.3	88	189	407
5	Raymond Av.	s/o SR-91 Eastbound Ramps	EDR/MDR/GC/NCR	74.4	89	191	412
6	Acacia Av.	n/o Kimberly Av.	I	67.5	RW	58	126
7	Acacia Av.	s/o Kimberly Av.	I	67.4	RW	58	125
8	N. State College Bl.	n/o Chapman Av.	C/LDR/HDR	76.4	133	287	618
9	N. State College Bl.	s/o Chapman Av.	C/LMDR/LDR	73.5	86	184	397
10	N. State College Bl.	s/o Commonwealth Av.	MDR/LDR/I	74.4	99	213	459
11	N. State College Bl.	s/o Kimberly Av.	I	75.3	113	244	525
12	N. State College Bl.	s/o Dwy. 16	I	75.4	115	247	533
13	N. State College Bl.	s/o Orangethorpe Av.	I/GC/I/WU	76.2	129	278	600
14	N. State College Bl.	s/o SR-91 Westbound Ramps	I/LDR/MDR	75.9	132	284	612
15	N. State College Bl.	s/o SR-91 Eastbound Ramps	LDR/MDR	74.9	112	240	518
16	S. Placentia Av.	n/o Kimberly Av.	I	71.8	56	120	258
17	S. Placentia Av.	s/o Kimberly Av.	I	71.8	55	119	257
18	Kimberly Av.	e/o Raymond Av.	I	64.0	RW	RW	56
19	Kimberly Av.	e/o Dwy. 5	I	67.2	RW	42	91
20	Kimberly Av.	e/o Dwy. 11	I	69.0	RW	56	120
21	Orangethorpe Av.	w/o Raymond Av.	GC/OL/I	76.1	127	274	590
22	Orangethorpe Av.	e/o Raymond Av.	I	77.2	151	326	702
23	Orangethorpe Av.	e/o Acacia Av.	I	77.1	149	321	691
24	Orangethorpe Av.	e/o Dwy. 6	I	77.2	152	327	704
25	Orangethorpe Av.	e/o Dwy. 10	I	77.5	157	339	731
26	Orangethorpe Av.	w/o N. State College Bl.	I	77.6	161	348	750
27	Orangethorpe Av.	e/o N. State College Bl.	I	77.3	154	332	716
28	Orangethorpe Av.	w/o S. Placentia Av.	I	77.2	150	323	696
29	Orangethorpe Av.	e/o S. Placentia Av.	LDR/I/C	75.0	129	279	601
30	Orangethorpe Av.	e/o SR-57 Southbound Ramps	LDR/C	75.2	133	286	616
31	Orangethorpe Av.	e/o SR-57 Northbound Ramps	LDR/C/I/CM	75.1	132	284	611

[1] The Fullerton Plan Community Development Plan, City of Anaheim General Plan Land Use Plan, City of Placentia General Plan Land Use Map.

[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. "I"= Industrial; "EDR"= Estate Density Residential; "NCR"= Neighborhood Center Commercial; "C"= Commercial; "LDR"= Low Density Residential; "HDR"= High Density Residential; "LMDR"= Low-Medium Density Residential; "MDR"= Medium Density Residential; "WU"= Water Uses; "GC"= General Commercial; "OL"= Office Low; "CM"= Commercial-Manufacturing.

TABLE 7-3: OPENING YEAR (2022) WITHOUT PROJECT NOISE 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	Raymond Av.	n/o Kimberly Av.	I	72.5	62	133	286
2	Raymond Av.	s/o Kimberly Av.	I	72.6	62	134	288
3	Raymond Av.	s/o Orangethorpe Av.	I	73.5	72	155	334
4	Raymond Av.	s/o SR-91 Westbound Ramps	I	74.5	90	193	416
5	Raymond Av.	s/o SR-91 Eastbound Ramps	EDR/MDR/GC/NCR	74.5	90	194	419
6	Acacia Av.	n/o Kimberly Av.	I	67.6	RW	60	129
7	Acacia Av.	s/o Kimberly Av.	I	67.4	RW	58	125
8	N. State College Bl.	n/o Chapman Av.	C/LDR/HDR	76.4	133	287	618
9	N. State College Bl.	s/o Chapman Av.	C/LMDR/LDR	73.5	85	184	396
10	N. State College Bl.	s/o Commonwealth Av.	MDR/LDR/I	74.5	99	214	461
11	N. State College Bl.	s/o Kimberly Av.	I	74.3	97	209	451
12	N. State College Bl.	s/o Dwy. 16	I	74.4	98	210	453
13	N. State College Bl.	s/o Orangethorpe Av.	I/GC/I/WU	75.1	109	235	507
14	N. State College Bl.	s/o SR-91 Westbound Ramps	I/LDR/MDR	75.7	127	274	590
15	N. State College Bl.	s/o SR-91 Eastbound Ramps	LDR/MDR	74.9	113	243	524
16	S. Placentia Av.	n/o Kimberly Av.	I	72.4	60	130	280
17	S. Placentia Av.	s/o Kimberly Av.	I	72.2	59	126	272
18	Kimberly Av.	e/o Raymond Av.	I	64.2	RW	RW	58
19	Kimberly Av.	e/o Dwy. 5	I	64.4	RW	RW	59
20	Kimberly Av.	e/o Dwy. 11	I	64.3	RW	RW	58
21	Orangethorpe Av.	w/o Raymond Av.	GC/OL/I	76.1	128	276	595
22	Orangethorpe Av.	e/o Raymond Av.	I	77.1	149	322	694
23	Orangethorpe Av.	e/o Acacia Av.	I	77.1	148	318	685
24	Orangethorpe Av.	e/o Dwy. 6	I	77.1	148	318	685
25	Orangethorpe Av.	e/o Dwy. 10	I	77.0	147	316	681
26	Orangethorpe Av.	w/o N. State College Bl.	I	77.0	147	316	681
27	Orangethorpe Av.	e/o N. State College Bl.	I	76.9	144	310	667
28	Orangethorpe Av.	w/o S. Placentia Av.	I	76.7	139	300	646
29	Orangethorpe Av.	e/o S. Placentia Av.	LDR/I/C	74.7	123	264	570
30	Orangethorpe Av.	e/o SR-57 Southbound Ramps	LDR/C	75.1	131	281	606
31	Orangethorpe Av.	e/o SR-57 Northbound Ramps	LDR/C/I/CM	75.2	134	289	622

[1] The Fullerton Plan Community Development Plan, City of Anaheim General Plan Land Use Plan, City of Placentia General Plan Land Use Map.

[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. "I"= Industrial; "EDR"= Estate Density Residential; "NCR"= Neighborhood Center Commercial; "C"= Commercial; "LDR"= Low Density Residential; "HDR"= High Density Residential; "LMDR"= Low-Medium Density Residential; "MDR"= Medium Density Residential; "WU"= Water Uses; "GC"= General Commercial; "OL"= Office Low; "CM"= Commercial-Manufacturing.

TABLE 7-4: OPENING YEAR (2022) WITH PROJECT NOISE CONTOURS

ID	Road	Segment	Receiving General Plan 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	Raymond Av.	n/o Kimberly Av.	I	72.5	62	133	287
2	Raymond Av.	s/o Kimberly Av.	I	72.6	62	134	289
3	Raymond Av.	s/o Orangethorpe Av.	I	73.6	73	158	341
4	Raymond Av.	s/o SR-91 Westbound Ramps	I	74.5	90	194	417
5	Raymond Av.	s/o SR-91 Eastbound Ramps	EDR/MDR/GC/NCR	74.5	90	195	420
6	Acacia Av.	n/o Kimberly Av.	I	67.7	RW	60	130
7	Acacia Av.	s/o Kimberly Av.	I	67.5	RW	59	127
8	N. State College Bl.	n/o Chapman Av.	C/LDR/HDR	76.5	135	291	628
9	N. State College Bl.	s/o Chapman Av.	C/LMDR/LDR	73.6	87	188	405
10	N. State College Bl.	s/o Commonwealth Av.	MDR/LDR/I	74.6	102	219	472
11	N. State College Bl.	s/o Kimberly Av.	I	75.4	114	246	531
12	N. State College Bl.	s/o Dwy. 16	I	75.5	116	250	539
13	N. State College Bl.	s/o Orangethorpe Av.	I/GC/I/WU	76.3	131	281	606
14	N. State College Bl.	s/o SR-91 Westbound Ramps	I/LDR/MDR	76.0	134	288	620
15	N. State College Bl.	s/o SR-91 Eastbound Ramps	LDR/MDR	74.9	113	244	525
16	S. Placentia Av.	n/o Kimberly Av.	I	72.4	60	130	280
17	S. Placentia Av.	s/o Kimberly Av.	I	72.2	59	127	273
18	Kimberly Av.	e/o Raymond Av.	I	64.5	RW	RW	60
19	Kimberly Av.	e/o Dwy. 5	I	67.5	RW	44	95
20	Kimberly Av.	e/o Dwy. 11	I	69.2	RW	57	124
21	Orangethorpe Av.	w/o Raymond Av.	GC/OL/I	76.2	130	281	605
22	Orangethorpe Av.	e/o Raymond Av.	I	77.3	154	332	715
23	Orangethorpe Av.	e/o Acacia Av.	I	77.2	152	327	705
24	Orangethorpe Av.	e/o Dwy. 6	I	77.4	155	333	717
25	Orangethorpe Av.	e/o Dwy. 10	I	77.6	160	345	744
26	Orangethorpe Av.	w/o N. State College Bl.	I	77.8	164	354	763
27	Orangethorpe Av.	e/o N. State College Bl.	I	77.5	157	338	729
28	Orangethorpe Av.	w/o S. Placentia Av.	I	77.3	153	329	709
29	Orangethorpe Av.	e/o S. Placentia Av.	LDR/I/C	75.2	133	288	619
30	Orangethorpe Av.	e/o SR-57 Southbound Ramps	LDR/C	75.3	136	293	631
31	Orangethorpe Av.	e/o SR-57 Northbound Ramps	LDR/C/I/CM	75.2	134	289	623

[1] The Fullerton Plan Community Development Plan, City of Anaheim General Plan Land Use Plan, City of Placentia General Plan Land Use Map.

[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. "I"= Industrial; "EDR"= Estate Density Residential; "NCR"= Neighborhood Center Commercial; "C"= Commercial; "LDR"= Low Density Residential; "HDR"= High Density Residential; "LMDR"= Low-Medium Density Residential; "MDR"= Medium Density Residential; "WU"= Water Uses; "GC"= General Commercial; "OL"= Office Low; "CM"= Commercial-Manufacturing.

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 to fully analyze all the existing traffic scenarios identified in the *Goodman Logistics Center Fullerton Traffic Analysis*. This condition is provided solely for informational purposes and will not occur, since the Project will not be fully developed and occupied under Existing conditions. Consistent with the Project Traffic Analysis, the off-site with project traffic volumes include the existing trip generation Kimberly Clark as part of the without project traffic volumes. Therefore, the with Project traffic noise level increases account for only the net increase in Project trips. Table 7-1 shows the Existing without Project conditions CNEL noise levels. The Existing without Project exterior noise levels are expected to range from 63.6 to 77.0 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-2 shows the Existing with Project conditions will range from 64.0 to 77.6 dBA CNEL. Table 7-5 shows that the Project off-site traffic noise level impacts will range from 0.0 to 5.4 dBA CNEL.

Based on the 5 dBA CNEL increase significance criteria when noise levels are below 60 dBA CNEL and 3 dBA CNEL increase criteria when the noise levels already exceed 60 dBA CNEL, two of the 31 study area roadway segments are shown to exceed the off-site traffic noise level increase significance criteria due to the Existing with Project conditions.

- Kimberly Avenue east of Driveway 5 (Segment #19)
- Kimberly Avenue east of Driveway 11 (Segment #20)

A review of the off-site traffic noise level increases show that neither of these two segments include noise sensitive receivers; therefore, all the study area roadway segments will experience *less than significant* noise level increases on receiving land uses due to the Project-related traffic.

7.3 OPENING YEAR (2022) PROJECT TRAFFIC NOISE LEVEL INCREASES

Table 7-3 presents the Opening Year (2022) without Project conditions CNEL noise levels. The Opening Year (2022) without Project exterior noise levels are expected to range from 64.2 to 77.1 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-4 shows that the Opening Year (2022) with Project conditions will range from 64.5 to 77.8 dBA CNEL. Table 7-6 shows that the Project off-site traffic noise level increases will range from 0.0 to 4.9 dBA CNEL

Based on the 5 dBA CNEL increase significance criteria when noise levels are below 60 dBA CNEL and 3 dBA CNEL increase criteria when the noise levels already exceed 60 dBA CNEL, two of the 31 study area roadway segments are shown to exceed the off-site traffic noise level increase significance criteria due to the Opening Year (2022) with Project conditions.

- Kimberly Avenue east of Driveway 5 (Segment #19)
- Kimberly Avenue east of Driveway 11 (Segment #20)

A review of the off-site traffic noise level increases show that neither of these two segments include noise sensitive receivers; therefore, all the study area roadway segments will experience *less than significant* noise level increases on receiving land uses due to the Project-related traffic.

TABLE 7-5: EXISTING WITH PROJECT TRAFFIC NOISE LEVEL INCREASES

ID	Road	Segment	Receiving Land Use[1]	CNEL at Receiving Land Use (dBA)[2]			Noise Sensitive Land Use?	Incremental Noise Level Increase Threshold[3]	
				No Project Ambient	With Project	Project Addition		Limit	Exceeded?
1	Raymond Av.	n/o Kimberly Av.	I	72.2	72.2	0.0	No	3	No
2	Raymond Av.	s/o Kimberly Av.	I	72.3	72.3	0.0	No	3	No
3	Raymond Av.	s/o Orangethorpe Av.	I	73.3	73.4	0.1	No	3	No
4	Raymond Av.	s/o SR-91 Westbound Ramps	I	74.3	74.3	0.0	No	3	No
5	Raymond Av.	s/o SR-91 Eastbound Ramps	EDR/MDR/GC/NCR	74.4	74.4	0.0	Yes	3	No
6	Acacia Av.	n/o Kimberly Av.	I	67.4	67.5	0.1	No	3	No
7	Acacia Av.	s/o Kimberly Av.	I	67.3	67.4	0.1	No	3	No
8	N. State College Bl.	n/o Chapman Av.	C/LDR/HDR	76.3	76.4	0.1	Yes	3	No
9	N. State College Bl.	s/o Chapman Av.	C/LMDR/LDR	73.3	73.5	0.2	Yes	3	No
10	N. State College Bl.	s/o Commonwealth Av.	MDR/LDR/I	74.3	74.4	0.1	Yes	3	No
11	N. State College Bl.	s/o Kimberly Av.	I	74.2	75.3	1.1	No	3	No
12	N. State College Bl.	s/o Dwy. 16	I	74.3	75.4	1.1	No	3	No
13	N. State College Bl.	s/o Orangethorpe Av.	I/GC/I/WU	75.0	76.2	1.2	No	3	No
14	N. State College Bl.	s/o SR-91 Westbound Ramps	I/LDR/MDR	75.6	75.9	0.3	Yes	3	No
15	N. State College Bl.	s/o SR-91 Eastbound Ramps	LDR/MDR	74.8	74.9	0.1	Yes	3	No
16	S. Placentia Av.	n/o Kimberly Av.	I	71.8	71.8	0.0	No	3	No
17	S. Placentia Av.	s/o Kimberly Av.	I	71.8	71.8	0.0	No	3	No
18	Kimberly Av.	e/o Raymond Av.	I	63.7	64.0	0.3	No	3	No
19	Kimberly Av.	e/o Dwy. 5	I	63.8	67.2	3.4	No	3	Yes
20	Kimberly Av.	e/o Dwy. 11	I	63.6	69.0	5.4	No	3	Yes
21	Orangethorpe Av.	w/o Raymond Av.	GC/OL/I	76.0	76.1	0.1	No	3	No
22	Orangethorpe Av.	e/o Raymond Av.	I	77.0	77.2	0.2	No	3	No
23	Orangethorpe Av.	e/o Acacia Av.	I	76.9	77.1	0.2	No	3	No

ID	Road	Segment	Receiving Land Use[1]	CNEL at Receiving Land Use (dBA)[2]			Noise Sensitive Land Use?	Incremental Noise Level Increase Threshold[3]	
				No Project Ambient	With Project	Project Addition		Limit	Exceeded?
24	Orangethorpe Av.	e/o Dwy. 6	I	76.9	77.2	0.3	No	3	No
25	Orangethorpe Av.	e/o Dwy. 10	I	76.9	77.5	0.6	No	3	No
26	Orangethorpe Av.	w/o N. State College Bl.	I	76.9	77.6	0.7	No	3	No
27	Orangethorpe Av.	e/o N. State College Bl.	I	76.7	77.3	0.6	No	3	No
28	Orangethorpe Av.	w/o S. Placentia Av.	I	76.5	77.2	0.7	No	3	No
29	Orangethorpe Av.	e/o S. Placentia Av.	LDR/I/C	74.4	75.0	0.6	Yes	3	No
30	Orangethorpe Av.	e/o SR-57 Southbound Ramps	LDR/C	74.9	75.2	0.3	Yes	3	No
31	Orangethorpe Av.	e/o SR-57 Northbound Ramps	LDR/C/I/CM	75.1	75.1	0.0	Yes	3	No

[1] The Fullerton Plan Community Development Plan, City of Anaheim General Plan Land Use Plan, City of Placentia General Plan Land Use Map.

[2] The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the receiving land use.

[3] Does the Project create an incremental noise level increase exceeding the significance criteria (Section 4.2)?

"I"= Industrial; "EDR"= Estate Density Residential; "NCR"= Neighborhood Center Commercial; "C"= Commercial; "LDR"= Low Density Residential; "HDR"= High Density Residential; "LMDR"= Low-Medium Density Residential; "MDR"= Medium Density Residential; "WU"= Water Uses; "GC"= General Commercial; "OL"= Office Low; "CM"= Commercial-Manufacturing.

TABLE 7-6: OPENING YEAR (2022) WITH PROJECT TRAFFIC NOISE INCREASES

ID	Road	Segment	Receiving Land Use[1]	CNEL at Receiving Land Use (dBA)[2]			Noise Sensitive Land Use?	Incremental Noise Level Increase Threshold[3]	
				No Project Ambient	With Project	Project Addition		Limit	Exceeded?
1	Raymond Av.	n/o Kimberly Av.	I	72.5	72.5	0.0	No	3	No
2	Raymond Av.	s/o Kimberly Av.	I	72.6	72.6	0.0	No	3	No
3	Raymond Av.	s/o Orangethorpe Av.	I	73.5	73.6	0.1	No	3	No
4	Raymond Av.	s/o SR-91 Westbound Ramps	I	74.5	74.5	0.0	No	3	No
5	Raymond Av.	s/o SR-91 Eastbound Ramps	EDR/MDR/GC/NCR	74.5	74.5	0.0	Yes	3	No
6	Acacia Av.	n/o Kimberly Av.	I	67.6	67.7	0.1	No	3	No
7	Acacia Av.	s/o Kimberly Av.	I	67.4	67.5	0.1	No	3	No
8	N. State College Bl.	n/o Chapman Av.	C/LDR/HDR	76.4	76.5	0.1	Yes	3	No
9	N. State College Bl.	s/o Chapman Av.	C/LMDR/LDR	73.5	73.6	0.1	Yes	3	No
10	N. State College Bl.	s/o Commonwealth Av.	MDR/LDR/I	74.5	74.6	0.1	Yes	3	No
11	N. State College Bl.	s/o Kimberly Av.	I	74.3	75.4	1.1	No	3	No
12	N. State College Bl.	s/o Dwy. 16	I	74.4	75.5	1.1	No	3	No
13	N. State College Bl.	s/o Orangethorpe Av.	I/GC/I/WU	75.1	76.3	1.2	No	3	No
14	N. State College Bl.	s/o SR-91 Westbound Ramps	I/LDR/MDR	75.7	76.0	0.3	Yes	3	No
15	N. State College Bl.	s/o SR-91 Eastbound Ramps	LDR/MDR	74.9	74.9	0.0	Yes	3	No
16	S. Placentia Av.	n/o Kimberly Av.	I	72.4	72.4	0.0	No	3	No
17	S. Placentia Av.	s/o Kimberly Av.	I	72.2	72.2	0.0	No	3	No
18	Kimberly Av.	e/o Raymond Av.	I	64.2	64.5	0.3	No	3	No
19	Kimberly Av.	e/o Dwy. 5	I	64.4	67.5	3.1	No	3	Yes
20	Kimberly Av.	e/o Dwy. 11	I	64.3	69.2	4.9	No	3	Yes
21	Orangethorpe Av.	w/o Raymond Av.	GC/OL/I	76.1	76.2	0.1	No	3	No
22	Orangethorpe Av.	e/o Raymond Av.	I	77.1	77.3	0.2	No	3	No
23	Orangethorpe Av.	e/o Acacia Av.	I	77.1	77.2	0.1	No	3	No

ID	Road	Segment	Receiving Land Use[1]	CNEL at Receiving Land Use (dBA)[2]			Noise Sensitive Land Use?	Incremental Noise Level Increase Threshold[3]	
				No Project Ambient	With Project	Project Addition		Limit	Exceeded?
24	Orangethorpe Av.	e/o Dwy. 6	I	77.1	77.4	0.3	No	3	No
25	Orangethorpe Av.	e/o Dwy. 10	I	77.0	77.6	0.6	No	3	No
26	Orangethorpe Av.	w/o N. State College Bl.	I	77.0	77.8	0.8	No	3	No
27	Orangethorpe Av.	e/o N. State College Bl.	I	76.9	77.5	0.6	No	3	No
28	Orangethorpe Av.	w/o S. Placentia Av.	I	76.7	77.3	0.6	No	3	No
29	Orangethorpe Av.	e/o S. Placentia Av.	LDR/I/C	74.7	75.2	0.5	Yes	3	No
30	Orangethorpe Av.	e/o SR-57 Southbound Ramps	LDR/C	75.1	75.3	0.2	Yes	3	No
31	Orangethorpe Av.	e/o SR-57 Northbound Ramps	LDR/C/I/CM	75.2	75.2	0.0	Yes	3	No

[1] The Fullerton Plan Community Development Plan, City of Anaheim General Plan Land Use Plan, City of Placentia General Plan Land Use Map.

[2] The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the receiving land use.

[3] Does the Project create an incremental noise level increase exceeding the significance criteria (Section 4.2)?

"I"= Industrial; "EDR"= Estate Density Residential; "NCR"= Neighborhood Center Commercial; "C"= Commercial; "LDR"= Low Density Residential; "HDR"= High Density Residential; "LMDR"= Low-Medium Density Residential; "MDR"= Medium Density Residential; "WU"= Water Uses; "GC"= General Commercial; "OL"= Office Low; "CM"= Commercial-Manufacturing.

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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 Exhibit 8-A, were identified as representative locations for analysis. Sensitive uses or 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. In addition to noise sensitive residential noise zones, the City of Fullerton Municipal Code Section 15.90.030(B)(1) defines sensitive use as any private or public school, hospital, residential care facility for the elderly, and religious institution. 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, eight sensitive receiver locations in the vicinity of the Project site were identified, including the location of the nearest sensitive receiver to the project site. All distances are measured from the Project site boundary to the outdoor living areas (e.g., private backyards) or 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.

R1: Location R1 represents the existing noise sensitive residence at 231 South Acacia Avenue in the City of Fullerton, approximately 1,984 feet northwest of the Project site. This location describes the closest residential neighborhoods at the transition from industrial to residential to the northwest. Since there are no private outdoor living areas (backyards) facing the Project site, receiver R1 is placed at the residential building façade. A 24-hour noise measurement was taken near this location, L1, to describe the existing ambient noise environment.

R2: Location R2 represents the existing noise sensitive residence at 2016 East Santa Fe Avenue in the City of Fullerton, approximately 2,080 feet north of the Project site. This location describes the closest residential neighborhoods at the transition from industrial to residential to the north. R2 is placed in the private outdoor living area (backyard) facing the Project site behind the existing 6’ foot high barrier. A 24-hour noise measurement was taken near this location, L1, to describe the existing ambient noise environment.

R3: Location R3 represents the True Unity Baptist Church at 765 South State College Boulevard in the City of Fullerton, approximately 305 feet north of the Project site. Receiver R3 is placed at the building façade. A 24-hour noise measurement near this location, L2, is used to describe the existing ambient noise environment.

R4: Location R4 represents the existing noise sensitive residence at 2400 Santa Clara Avenue in the City of Fullerton, approximately 1,876 feet northeast of the Project site. This location describes the closest residential neighborhoods at the transition from industrial to residential to the northeast. R4 is placed in the private outdoor living area (backyard) facing the Project site behind the existing 6’ foot high barrier. A 24-hour noise

measurement near this location, L3, is used to describe the existing ambient noise environment.

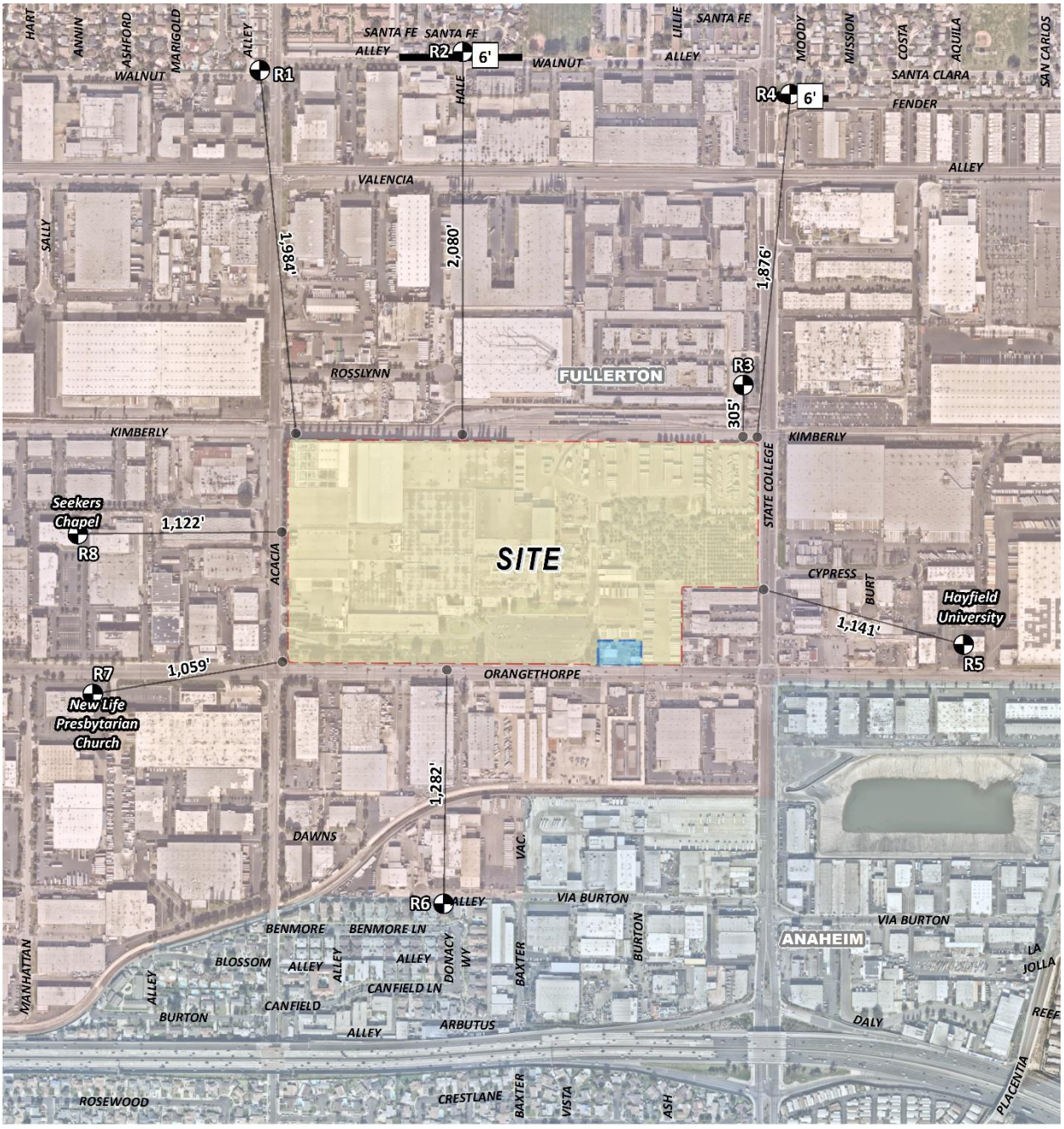
R5: Location R5 represents Hayfield University at 2495 East Orangethorpe Avenue in the City of Fullerton approximately 1,141 feet east of the Project site. Receiver R5 is placed at the building façade. A 24-hour noise measurement near this location, L4, is used to describe the existing ambient noise environment.

R6: Location R6 represents the existing noise sensitive residence at 1545 East Benmore Lane, in the City of Anaheim, approximately 1,282 feet south of the Project site. Since there are no private outdoor living areas (backyards) facing the Project site, receiver R6 is placed at the residential building façade. A 24-hour noise measurement near this location, L5, is used to describe the existing ambient noise environment.

R7: Location R7 represents the New Life Presbyterian Church at 1430 East Orangethorpe Avenue in the City of Fullerton, approximately 1,059 feet southwest of the Project site. Receiver R7 is placed at the building façade. A 24-hour noise measurement near this location, L6, is used to describe the existing ambient noise environment.

R8: Location R8 represents Seekers Chapel at 1521 East Orangethorpe Avenue in the City of Fullerton, approximately 1,122 feet west of the Project site. Receiver R8 is placed at the building façade. A 24-hour noise measurement near this location, L7, is used to describe the existing ambient noise environment.

EXHIBIT 8-A: SENSITIVE RECEIVER LOCATIONS



LEGEND:

- Site Boundary
- Potential Expansion Site
- City of Fullerton
- City of Anaheim
- 6' Existing Barrier Height (in feet)
- Existing Barrier
- Receiver Locations
- Distance from receiver to Project site boundary (in feet)

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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 Goodman Logistics Center Fullerton Project. Exhibit 9-A identifies the representative noise source locations used to assess the operational noise levels

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, entry gate & truck movements, roof-top air conditioning units, 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, entry gate & truck movements, roof-top air conditioning units, 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. (13)

EXHIBIT 9-A: OPERATIONAL NOISE SOURCE LOCATIONS

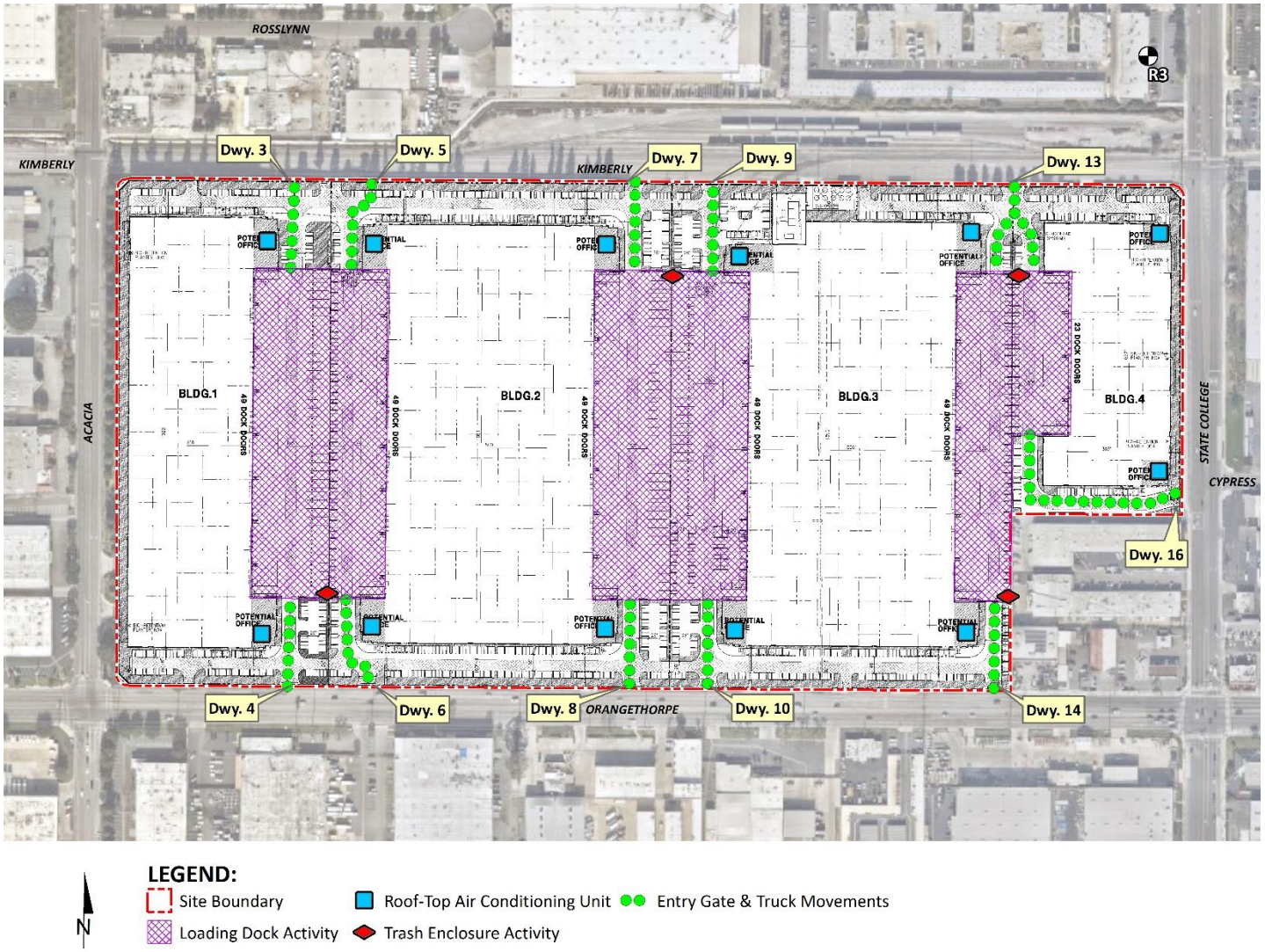


TABLE 9-1: REFERENCE NOISE LEVEL MEASUREMENTS

Noise Source	Duration (hh:mm:ss)	Ref. Distance (Feet)	Noise Source Height (Feet)	Min./Hour[5]		Reference Noise Level (dBA L_{eq})		Sound Power Level (dBA)[6]
				Day	Night	@ Ref. Dist.	@ 50 Feet	
Loading Dock Activity[1]	00:14:00	30'	8'	60	60	70.1	65.7	111.5
Entry Gate & Truck Movements[2]	00:15:00	20'	8'	-[7]	-[7]	64.0	58.0	89.7
Roof-Top Air Conditioning Units[3]	96:00:00	5'	5'	39	28	77.2	57.2	88.9
Trash Enclosure Activity[4]	00:00:32	8'	5'	5	5	72.7	56.8	89.0

[1] As measured by Urban Crossroads, Inc. at the Nature's Best Distribution Facility in the City of Chino.
[2] As measured by Urban Crossroads, Inc. at the Motivational Fulfillment & Logistics Services distribution facility in the City of Chino.
[3] Lennox SCA120 series 10-ton model packaged air conditioning unit.
[4] As measured by Urban Crossroads, Inc. at a commercial and office park trash enclosure in the City of Costa Mesa.
[5] Anticipated duration (minutes within the hour) of noise activity during typical hourly conditions expected at the Project site. "Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.
[6] 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.
[7] Entry Gate & Truck Movements are calculate based on the number of events by time of day (See Table 9-2).

9.2.2 LOADING DOCK ACTIVITY

The reference loading dock activities are intended to describe the typical operational noise activities associated with the Project. This includes truck idling, reefer activity (refrigerator truck/cold storage), deliveries, backup alarms, unloading/loading, docking including a combination of tractor trailer semi-trucks, two-axle delivery trucks, and background forklift operations. Since the noise levels generated by cold storage loading dock activity can be slightly higher due to the use of refrigerated trucks or reefers, this analysis conservatively assumes that all loading dock activity is associated with cold storage facilities, even though only 50 percent cold storage is anticipated. To describe the loading dock activities for cold storage, a reference noise level measurement was collected at the Nature's Best distribution facility located at 16081 Fern Avenue in the City of Chino. During the fourteen-minute truck idling/reefer activity reference noise level measurement, approximately 20 delivery trucks were docked, idling, or parked in the northern loading dock area.

The truck idling/reefer activity reference noise level measurement was taken in the center of the loading dock activity area and represents multiple concurrent noise sources resulting in a combined noise level of 65.7 dBA L_{eq} at a uniform distance of 50 feet. Specifically, the reference noise level measurement represents one truck located approximately 30 feet from the noise level meter with another truck passing by to park roughly 20 feet away, both with their engines idling. Throughout the reference noise level measurement, a separate docked and running reefer truck was located approximately 50 feet east of the measurement location. Additional background noise sources included truck pass-by noise, truck drivers talking to each other next to docked trucks, and air brake release noise when trucks parked.

9.2.3 ENTRY GATE & TRUCK MOVEMENTS

An entry gate and truck movements reference noise level measurement were taken at the southern entry gate of the Motivational Fulfillment & Logistics Services distribution facility located at 6810 Bickmore Avenue in the City of Chino over a 15-minute period and represents multiple noise sources producing a reference noise level of 58.0 dBA L_{eq} at 50 feet. The noise sources included at this measurement location account for the rattling and squeaking during normal opening and closing operations, the gate closure equipment, truck engines idling outside the entry gate, truck movements through the entry gate, and background truck court activities and forklift backup alarm noise. The reference entry gate and truck movement noise levels are used to describe typical truck movements entering and exiting the loading dock area. This activity is considered a moving point source or line source and is used to represent the truck movements from the driveway locations to the loading docks. Since these noise levels represent the typical tractor trailer entering and exiting, the noise levels adequately describe the planned entry gate and truck movements activities at the Project site.

Consistent with the *Goodman Logistics Center Fullerton Traffic Analysis*, the Project is expected to generate a total of approximately 3,422 trip-ends per day (actual vehicles) and includes 904 truck trip-ends per day. (2) 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 by driveway location 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.

9.2.4 ROOF-TOP AIR CONDITIONING UNITS

To assess the noise levels created by the roof-top air conditioning units, reference noise level measurements were collected from a Lennox SCA120 series 10-ton model packaged air conditioning unit. At 5 feet from the roof-top air conditioning unit, the exterior noise levels were measured at 77.2 dBA L_{eq}. 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. This reference noise level describes the expected roof-top air conditioning units located 5 feet above the roof for the planned air conditioning units at the Project site.

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
Driveway 3	904	10%	90	86.50%	2.70%	10.80%	78	2	10
Driveway 4		10%	90	86.50%	2.70%	10.80%	78	2	10
Driveway 5		8%	72	86.50%	2.70%	10.80%	62	2	8
Driveway 6		9%	81	86.50%	2.70%	10.80%	70	2	9
Driveway 7		8%	72	86.50%	2.70%	10.80%	62	2	8
Driveway 8		10%	90	86.50%	2.70%	10.80%	78	2	10
Driveway 9		8%	72	86.50%	2.70%	10.80%	62	2	8
Driveway 10		10%	90	86.50%	2.70%	10.80%	78	2	10
Driveway 13		13%	118	86.50%	2.70%	10.80%	102	3	13
Driveway 14		9%	81	86.50%	2.70%	10.80%	70	2	9
Driveway 16		5%	45	86.50%	2.70%	10.80%	39	1	5

[1] Driveway locations as shown on Exhibit 9-A. The potential consolidation of driveways 3 and 5 into a single driveway will not change the number of truck trips on Kimberly Avenue or the entry gate & truck movement operational noise levels.
[2] Total Project truck trips according to Table 4-3 of the Goodman Logistics Center Traffic Analysis.
[3] Project truck trip distribution according to Exhibit 4-2 of the Goodman Logistics Center Traffic Analysis.
[4] Calculated trip trucks per location represents the product of the total project truck trips by and the trip distribution.
[5] Heavy truck time of day vehicle splits as shown on Table 6-3.
[6] Calculated time of day entry gate and truck movements by location.

9.2.5 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, 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 each of the Project buildings. Typical trash enclosure activities are estimated to occur for 5 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. This includes the additional noise attenuation provided by the existing intervening building structures and noise barriers located between the Project and the nearest receiver locations. 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 (PWL) 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 (PWL) are connected to the sound source and are independent of distance. Sound pressure levels vary substantially with distance from the source and diminish as a result 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 0.0 was used in the CadnaA noise analysis to account for hard site conditions. Appendix 9.1 includes the detailed noise model inputs used to estimate the Project operational noise levels presented in this section.

9.4 PROJECT OPERATIONAL NOISE LEVELS

Using the reference noise levels to represent the proposed Project operations that include loading dock activity, entry gate & truck movements, roof-top air conditioning units, and trash enclosure activity, Urban Crossroads, Inc. calculated the operational source noise levels that are expected to be generated at the Project site and the Project-related noise level increases that would be experienced at each of the sensitive receiver locations. Tables 9-3 shows the 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 30.1 to 41.7 dBA L_{eq}.

TABLE 9-3: DAYTIME PROJECT OPERATIONAL NOISE LEVELS

Noise Source[1]	Operational Noise Levels by Receiver Location (dBA Leq)							
	R1	R2	R3	R4	R5	R6	R7	R8
Loading Dock Activity	39.7	41.5	33.6	38.0	34.4	37.5	33.2	29.2
Entry Gate & Truck Movements	23.3	23.0	18.1	21.3	20.5	18.9	28.6	11.9
Roof-Top Air Conditioning Units	26.4	26.9	33.5	26.8	29.9	26.8	29.5	22.5
Trash Enclosure Activity	8.4	9.1	4.0	8.6	2.0	6.4	1.4	1.4
Total (All Noise Sources)	**40.0**	**41.7**	**36.6**	**38.4**	**35.8**	**37.9**	**35.7**	**30.1**

[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 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 29.7 to 41.6 dBA L_{eq}. The differences between the daytime and nighttime noise levels is largely related to the duration of noise activity (Table 9-1).

TABLE 9-4: NIGHTTIME PROJECT OPERATIONAL NOISE LEVELS

Noise Source[1]	Operational Noise Levels by Receiver Location (dBA Leq)							
	R1	R2	R3	R4	R5	R6	R7	R8
Loading Dock Activity	39.7	41.5	33.6	38.0	34.4	37.5	33.2	29.2
Entry Gate & Truck Movements	14.4	14.0	9.1	12.5	11.7	10.0	19.7	3.0
Roof-Top Air Conditioning Units	24.0	24.5	31.1	24.4	27.5	24.4	27.1	20.1
Trash Enclosure Activity	7.4	8.2	3.0	7.7	1.1	5.4	0.4	0.4
Total (All Noise Sources)	**39.8**	**41.6**	**35.6**	**38.2**	**35.2**	**37.7**	**34.3**	**29.7**

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

9.5 PROJECT OPERATIONAL NOISE LEVEL COMPLIANCE

To demonstrate compliance with local noise regulations, the Project-only operational noise levels are evaluated against exterior noise level thresholds based on the City of Fullerton and City of Anaheim exterior noise level standards at the nearest noise-sensitive receiver locations. Table 9-5 shows that the operational noise levels associated with Goodman Logistics Center Fullerton Project will satisfy the City of Fullerton operational noise level standards adjusted to reflect the ambient noise level and the City of Anaheim 60 dBA L_{eq} anytime exterior noise level standards at all the nearest sensitive receiver locations. Therefore, the operational noise impacts are considered *less than significant* at the nearest noise-sensitive receiver locations.

TABLE 9-5: OPERATIONAL NOISE LEVEL COMPLIANCE

Receiver Location[1]	Use	City	Meas. Location[2]	Project Operational Noise Levels (dBA Leq)[3]		Noise Level Standards (dBA Leq)[4]		Noise Level Standards Exceeded?[5]	
				Daytime	Nighttime	Daytime	Nighttime	Daytime	Nighttime
R1	Residential	Fullerton	L1	40.0	39.8	64.9	57.5	No	No
R2	Residential	Fullerton	L1	41.7	41.6	64.9	57.5	No	No
R3	Church	Fullerton	L2	36.6	35.6	63.0	56.2	No	No
R4	Residential	Fullerton	L3	38.4	38.2	65.4	59.8	No	No
R5	School	Fullerton	L4	35.8	35.2	62.5	59.0	No	No
R6	Residential	Anaheim	L5	37.9	37.7	60.0	60.0	No	No
R7	Church	Fullerton	L6	35.7	34.3	61.4	58.3	No	No
R8	Church	Fullerton	L7	30.1	29.7	54.8	50.6	No	No

[1] See Exhibit 8-A for the receiver locations.
[2] Reference noise level measurement locations as shown on Exhibit 5-A.
[3] Proposed Project operational noise levels as shown on Tables 9-3 and 9-4.
[4] Exterior noise level standards adjusted to reflect the ambient noise levels (Table 5-1) per the City of Fullerton Municipal Code, Section 15.90.030 and the City of Anaheim Municipal Code, Chapter 6.70.
[5] Do the estimated Project operational noise source activities exceed the noise level standards?
"Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

9.6 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 nearest 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. (4) 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 describe the Project noise level increases to the existing ambient noise environment. As indicated on Tables 9-6 and 9-7, the Project will generate daytime and nighttime operational noise level increases ranging from 0.0 to 0.1 dBA L_{eq} at the receiver locations. Project-related operational noise level increases will satisfy the operational noise level increase significance criteria presented in Section 4.2. Therefore, the incremental Project operational noise level increase is considered *less than significant* at all receiver locations.

9.7 OPERATIONAL VIBRATION IMPACTS

On-site operations associated with the Project will include heavy trucks moving on site to and from the loading dock areas. Truck vibration levels are dependent on vehicle characteristics, load, speed, and pavement conditions. Since trucks rarely create vibration that exceed 70 VdB (unless there are bumps due to frequent potholes in the road) (3 p. 113), it is expected that the on-site heavy trucks will be travelling at very low speeds so activity will satisfy the maximum-acceptable vibration criteria of 78 VdB for daytime and 72 VdB for nighttime for residential uses, and therefore, will be *less than significant*.

With respect to off-site truck activity, ground-borne vibration levels from automobile traffic are generally overshadowed by vibration generated by heavy trucks on uneven roadway surfaces. However, due to the rapid drop-off rate of ground-borne vibration and the short duration of the associated events, vehicular traffic-induced ground-borne vibration is rarely perceptible beyond the roadway right-of-way. This is consistent with the FTA *Transit Noise and Vibration Impact Assessment Manual* (3), finding that rubber-tired traffic is rarely perceptible on smooth roadways. Since trucks rarely create vibration that exceed 70 VdB (unless there are bumps due to frequent potholes in the road) (3 p. 113), it is expected that off-site truck vibration impacts at nearest homes will satisfy the maximum-acceptable vibration criteria of 78 VdB for daytime and 72 VdB for nighttime for residential uses, and therefore, will be *less than significant*.

TABLE 9-6: 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?
R1	40.0	L1	64.9	64.9	0.0	3.0	No
R2	41.7	L1	64.9	64.9	0.0	3.0	No
R3	36.6	L2	63.0	63.0	0.0	3.0	No
R4	38.4	L3	65.4	65.4	0.0	3.0	No
R5	35.8	L4	62.5	62.5	0.0	3.0	No
R6	37.9	L5	63.0	63.0	0.0	3.0	No
R7	35.7	L6	61.4	61.4	0.0	3.0	No
R8	30.1	L7	54.8	54.8	0.0	5.0	No

[1] See Exhibit 8-A for the receiver locations.
[2] Total Project daytime operational noise levels as shown on Table 9-3.
[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 in Section 4.2.

TABLE 9-7: 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?
R1	39.8	L1	57.5	57.6	0.1	5.0	No
R2	41.6	L1	57.5	57.6	0.1	5.0	No
R3	35.6	L2	56.2	56.2	0.0	5.0	No
R4	38.2	L3	59.8	59.8	0.0	5.0	No
R5	35.2	L4	59.0	59.0	0.0	5.0	No
R6	37.7	L5	62.2	62.2	0.0	3.0	No
R7	34.3	L6	58.3	58.3	0.0	5.0	No
R8	29.7	L7	50.6	50.6	0.0	5.0	No

[1] See Exhibit 8-A for the receiver locations.
[2] Total Project nighttime operational noise levels as shown on Table 9-4.
[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 in Section 4.2.

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, City of Fullerton Municipal Code Section 15.90.050, states that construction activities are limited to the hours of 7:00 a.m. to 8:00 p.m. on any day except Sunday or a City-recognized holiday. (17)

10.1 CONSTRUCTION NOISE LEVELS

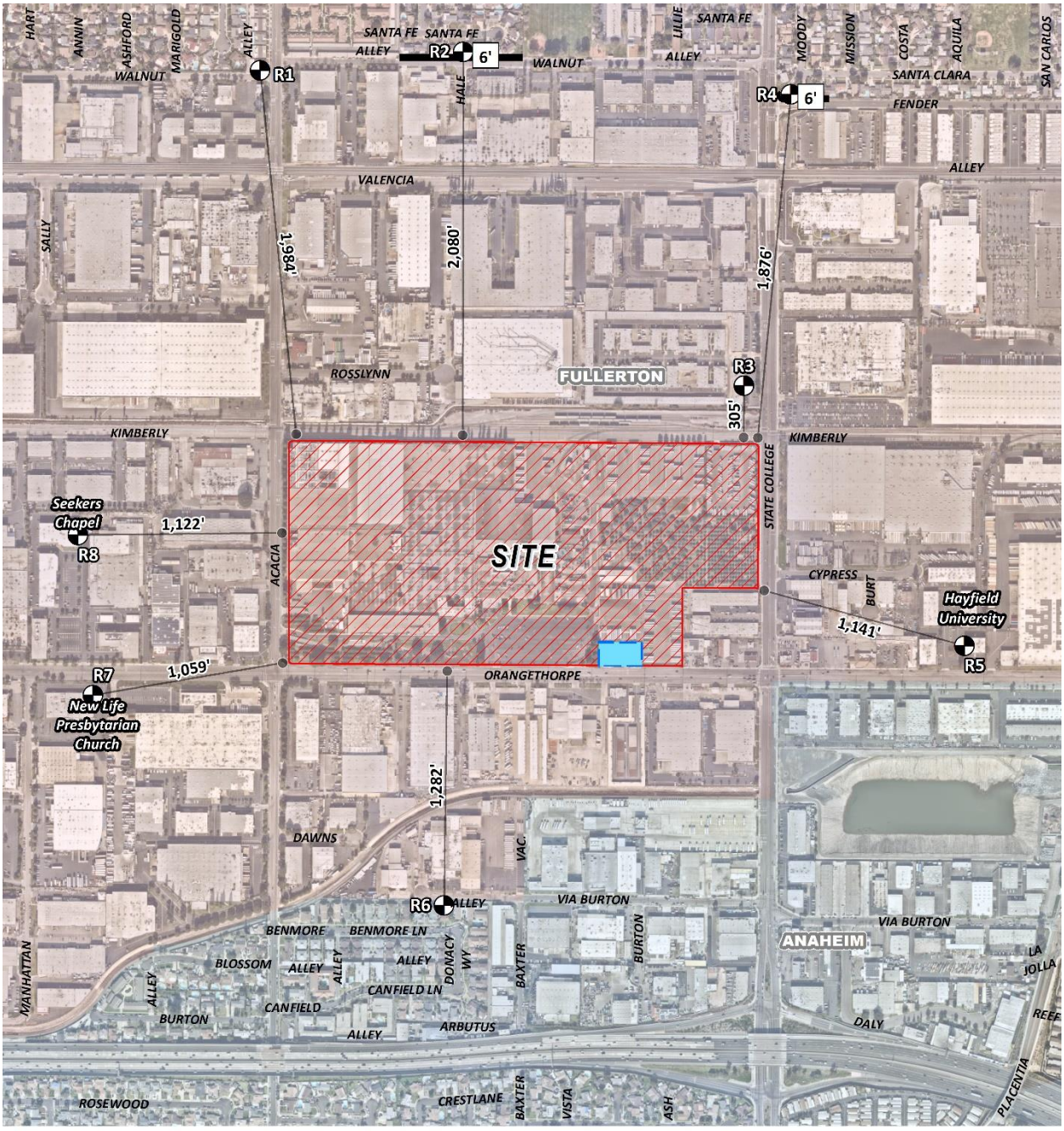
Noise generated by the Project construction equipment will include a combination of trucks, power tools, concrete mixers, and portable generators operating simultaneously that when combined can reach high levels. The number and mix of construction equipment are expected to occur in the following stages:

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

This construction noise analysis was prepared using reference noise level measurements taken by Urban Crossroads, Inc. to describe the typical construction activity noise levels for each stage of Project construction. This includes the demolition of existing buildings and facilities on the Kimberly-Clark site and the potential expansion site. However, no pile driving is expected as part of the Project construction activities. The construction reference noise level measurements represent a list of typical construction activity noise levels with multiple pieces of equipment operating simultaneously to conservatively estimate Project construction noise levels.

Noise levels generated by heavy construction equipment can range from approximately 68 dBA to more than 80 dBA when measured at 50 feet. However, these noise levels diminish with distance from the construction site at a rate of 6 dBA per doubling of distance. For example, a noise level of 80 dBA measured at 50 feet from the noise source to the receiver would be reduced to 74 dBA at 100 feet from the source to the receiver, and would be further reduced to 68 dBA at 200 feet from the source to the receiver.

EXHIBIT 10-A: TYPICAL CONSTRUCTION NOISE SOURCE LOCATIONS



10.2 TYPICAL CONSTRUCTION REFERENCE NOISE LEVELS

To describe the Project typical construction noise levels, measurements were collected for similar activities at several construction sites. Table 10-1 provides a summary of the construction reference noise level measurements. Since the reference noise levels were collected at varying distances of 30 feet and 50 feet, all construction noise level measurements presented on Table 10-1 have been adjusted for consistency to describe a uniform reference distance of 50 feet. Construction noise generated from concrete crushing activities and nighttime concrete pours are addressed separately, below.

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 Activity	67.9	71.9
	Backhoe	64.2	
	Water Truck Pass-By & Backup Alarm	71.9	
Site Preparation	Scraper, Water Truck, & Dozer Activity	75.3	75.3
	Backhoe	64.2	
	Water Truck Pass-By & Backup Alarm	71.9	
Grading	Rough Grading Activities	73.5	73.5
	Water Truck Pass-By & Backup Alarm	71.9	
	Construction Vehicle Maintenance Activities	67.5	
Building Construction	Foundation Trenching	68.2	71.6
	Framing	62.3	
	Concrete Mixer Backup Alarms & Air Brakes	71.6	
Paving	Concrete Mixer Truck Movements	71.2	71.2
	Concrete Paver Activities	65.6	
	Concrete Mixer Pour & Paving Activities	65.9	
Architectural Coating	Air Compressors	65.2	65.2
	Generator	64.9	
	Crane	62.3	

[1] Reference construction noise level measurements taken by Urban Crossroads, Inc.

10.3 TYPICAL CONSTRUCTION NOISE ANALYSIS

Using the reference construction equipment noise levels and the CadnaA noise prediction model, calculations of the Project construction noise level impacts with multiple pieces of equipment operating simultaneously at the nearest sensitive receiver locations were completed. This includes the additional noise attenuation provided by the existing intervening building structures and noise barriers located between the Project site and the nearest receiver locations.

The reference noise level measurements were collected from existing construction operations with similar equipment as those expected with the Project. While the construction size, scope of work, and ambient noise levels vary for the reference noise level measurements, each piece of construction equipment fully represents the expected noise levels for each activity. The construction noise analysis does not rely on any one reference noise level to fully describe the potential impacts. Rather, a combination of individual construction noise level measurements is used to describe typical activities for each stage of construction.

As shown on Table 10-2, the construction noise levels are expected to range from 53.7 to 61.6 dBA L_{eq} at the nearest receiver locations. Appendix 10.1 includes the detailed CadnaA construction noise model inputs.

TABLE 10-2: TYPICAL 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]
R1	55.9	59.3	57.5	55.6	55.2	49.2	59.3
R2	54.3	57.7	55.9	54.0	53.6	47.6	57.7
R3	57.9	61.3	59.5	57.6	57.2	51.2	61.3
R4	54.0	57.4	55.6	53.7	53.3	47.3	57.4
R5	58.2	61.6	59.8	57.9	57.5	51.5	61.6
R6	50.6	54.0	52.2	50.3	49.9	43.9	54.0
R7	56.8	60.2	58.4	56.5	56.1	50.1	60.2
R8	50.3	53.7	51.9	50.0	49.6	43.6	53.7

[1] Noise 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 TYPICAL DAYTIME CONSTRUCTION NOISE LEVEL COMPLIANCE

To demonstrate compliance with local noise regulations, the Project-only construction noise levels are conservatively evaluated against exterior noise level thresholds based on the City of Fullerton and City of Anaheim at the nearest noise-sensitive receiver locations. Table 10-3 shows that the construction noise levels associated with Goodman Logistics Center Fullerton Project will satisfy the City of Fullerton noise level standards adjusted to reflect the ambient noise level, and the City of Anaheim 60 dBA L_{eq} anytime exterior noise level standards at all the nearest sensitive receiver locations. Therefore, the construction noise impacts are considered *less than significant* at the nearest noise-sensitive receiver locations.

TABLE 10-3: TYPICAL DAYTIME CONSTRUCTION NOISE LEVEL COMPLIANCE

Receiver Location[1]	Use	City	Meas. Location[2]	Construction Noise Levels (dBA L_{eq})		
				Highest Construction[3]	Daytime Threshold[4]	Threshold Exceeded?[5]
R1	Residential	Fullerton	L1	59.3	64.9	No
R2	Residential	Fullerton	L1	57.7	64.9	No
R3	Church	Fullerton	L2	61.3	63.0	No
R4	Residential	Fullerton	L3	57.4	65.4	No
R5	School	Fullerton	L4	61.6	62.5	No
R6	Residential	Anaheim	L5	54.0	60.0	No
R7	Church	Fullerton	L6	60.2	61.4	No
R8	Church	Fullerton	L7	53.7	54.8	No

[1] Noise receiver locations are shown on Exhibit 10-A.
[2] Reference noise level measurement locations as shown on Exhibit 5-A.
[3] Construction noise level calculations based on distance from the project site boundaries (construction activity area) to nearby receiver locations as shown on Table 10-2.
[4] Exterior noise level standards adjusted to reflect the daytime ambient noise levels (Table 5-1) per the City of Fullerton Municipal Code, Section 15.90.030 and the City of Anaheim Municipal Code, Chapter 6.70.
[5] Do the estimated Project construction noise levels exceed the daytime construction noise level threshold?

10.5 NIGHTTIME CONCRETE POUR NOISE ANALYSIS

It is our understanding that nighttime concrete pouring activities will occur as a part of Project construction activities. Nighttime concrete pouring activities are often used to support reduced concrete mixer truck transit times and lower air temperatures than during the daytime hours. Since the nighttime concrete pours will take place outside the permitted City of Fullerton Municipal Code, Section 15.90.050 hours of 7:00 a.m. to 8:00 p.m. on any day except Sunday or a City-recognized holiday, the Project Applicant will be required to obtain authorization for nighttime work from the City of Fullerton. Any nighttime construction noise activities shall satisfy the noise limit categories outlined in Section 15.90.030 of the Municipal Code.

As shown on Table 10-4, the noise levels associated with the nighttime concrete pour activities (paving) are estimated to range from 49.6 to 57.5 dBA L_{eq} and will satisfy the stationary-source exterior hourly average L_{eq} noise levels adjusted to reflect the ambient noise level and the City of Anaheim 60 dBA L_{eq} anytime exterior noise level standards at all the receiver locations, with the exception of one receiver in the City of Fullerton. The estimated nighttime concrete pour activity noise levels include the additional noise attenuation provided by the existing intervening building structures and noise barriers located between the Project site and the nearest receiver locations. While location R3, may experience nighttime noise concrete pour activity noise levels that exceed the existing nighttime ambient noise conditions, this receiver is not operational during the nighttime hours. Therefore, based on the results of this analysis, all nearest noise receiver locations will experience *less than significant* impacts due to the Project related nighttime concrete pour activities

TABLE 10-4: NIGHTTIME CONCRETE POUR NOISE LEVEL COMPLIANCE

Receiver Location[1]	Use	City	Meas. Location[2]	Construction Noise Levels (dBA L_{eq})		
				Paving Construction[3]	Nighttime Threshold[4]	Threshold Exceeded?[5]
R1	Residential	Fullerton	L1	55.2	57.5	No
R2	Residential	Fullerton	L1	53.6	57.5	No
R3	Church	Fullerton	L2	57.2	56.2	Yes
R4	Residential	Fullerton	L3	53.3	59.8	No
R5	School	Fullerton	L4	57.5	59.0	No
R6	Residential	Anaheim	L5	49.9	60.0	No
R7	Church	Fullerton	L6	56.1	58.3	No
R8	Church	Fullerton	L7	49.6	50.6	No

[1] Noise receiver locations are shown on Exhibit 10-A.
[2] Reference noise level measurement locations as shown on Exhibit 5-A.
[3] Paving construction noise level calculations based on distance from the construction noise source activity to nearby receiver locations as shown on Table 10-2.
[4] Exterior noise level standards adjusted to reflect the nighttime ambient noise levels (Table 5-1) per the City of Fullerton Municipal Code, Section 15.90.030.
[5] Do the estimated Project construction noise levels exceed the nighttime construction noise level threshold?

10.6 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) (3). 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 10-5. It should be noted that pile driving is not required for the Project. This list includes vibration source levels for a hoe ram or breaker representing a percussion hammer fitted to an excavator for breaking concrete. 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. To describe the human response (annoyance) associated with vibration impacts the FTA provides the following equation: $L_{VdB}(D) = L_{VdB}(25\text{ ft}) - 30\log(D/25)$

TABLE 10-5: VIBRATION SOURCE LEVELS FOR TYPICAL CONSTRUCTION EQUIPMENT

Equipment	Vibration Decibels (VdB) at 25 feet
Small bulldozer	58
Jackhammer	79
Loaded Trucks	86
Large bulldozer	87
Hoe Ram (Breaker)	87

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual

Table 10-6 presents the expected typical construction equipment vibration levels at the nearest receiver locations. At distances ranging from 305 feet to 2,080 feet from typical Project construction activities (at the Project site boundary), construction vibration levels are estimated to range from 29.4 to 54.4 VdB and will remain below the FTA Transit Noise and Vibration Impact Assessment Manual maximum acceptable vibration criteria of 78 VdB for daytime residential uses at all receiver locations.

Therefore, the Project-related vibration impacts are considered *less than significant* during typical construction activities at the Project site. Moreover, the vibration levels reported at the sensitive receiver locations 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.

TABLE 10-6: TYPICAL CONSTRUCTION EQUIPMENT VIBRATION LEVELS

Receiver Location[1]	Distance to Construction Activity (Feet)	Receiver Vibration Levels (VdB)[2]					Threshold VdB[3]	Threshold Exceeded?[4]
		Small Bulldozer	Jack-hammer	Loaded Trucks	Large Bulldozer	Highest Vibration Levels		
R1	1,984'	1.0	22.0	29.0	30.0	30.0	78	No
R2	2,080'	0.4	21.4	28.4	29.4	29.4	78	No
R3	305'	25.4	46.4	53.4	54.4	54.4	78	No
R4	1,876'	1.7	22.7	29.7	30.7	30.7	78	No
R5	1,141'	8.2	29.2	36.2	37.2	37.2	78	No
R6	1,282'	6.7	27.7	34.7	35.7	35.7	78	No
R7	1,059'	9.2	30.2	37.2	38.2	38.2	78	No
R8	1,122'	8.4	29.4	36.4	37.4	37.4	78	No

[1] Noise receiver locations are shown on Exhibit 10-A.
[2] Based on the Vibration Source Levels of Construction Equipment included on Table 10-5.
[3] FTA Transit Noise and Vibration Impact Assessment Manual maximum acceptable vibration criteria as shown in Section 4.2.
[4] Does the vibration level exceed the maximum acceptable vibration threshold?

10.7 CONCRETE CRUSHING CONSTRUCTION REFERENCE NOISE LEVELS

An additional analysis was completed to assess potential noise level impacts due to concrete crushing activities planned near the southern project site boundary on Orangethorpe Avenue. Exhibit 10-B shows the location of the planned concrete crushing activity area in relation to the receiver locations. The concrete crushing construction noise analysis was prepared using reference construction equipment noise levels from the Federal Highway Administration (FHWA) published in the Roadway Construction Noise Model (RCNM), which includes a national database of construction equipment reference noise emission levels. (18) Table 10-7 provides a summary of the reference average L_{eq} noise levels used to describe concrete crushing construction activities.

The reference noise level summary describes construction activity noise levels with multiple pieces of concrete construction equipment operating simultaneously and includes source noise levels for a hoe ram or breaker representing a percussion hammer fitted to an excavator for breaking concrete. A default ground attenuation factor of 0.0 was used in the CadnaA noise prediction model to account for hard site conditions.

TABLE 10-7: CONCRETE CRUSHING CONSTRUCTION REFERENCE NOISE LEVELS

Construction Stage	Typical Equipment	Reference Noise Level @ 50 Feet (dBA L_{eq})[1]	Highest Reference Noise Level (dBA L_{eq})
Concrete Crushing	Mounted Impact Hammer (Hoe Ram)	83	83
	Rubber Tired Dozers	75	
	Dump Truck	72	

[1] FHWA's Roadway Construction Noise Model, January 2006.

10.8 CONCRETE CRUSHING CONSTRUCTION NOISE ANALYSIS AND COMPLIANCE

Using the reference RCNM construction equipment noise levels and the CadnaA noise prediction model, calculations of the Project construction noise level impacts at 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 (as shown on Exhibit 10-B) to each receiver location. As shown on Table 10-8, the concrete crushing construction noise levels are estimated to range from 42.9 to 57.9 dBA L_{eq} at the nearest receiver locations.

The concrete crushing construction noise analysis shows that the receiver locations will satisfy the City of Fullerton and City of Anaheim exterior noise level standards at the nearest noise-sensitive receiver locations. Therefore, the noise impacts due to the Project concrete crushing noise is considered *less than significant* at all receiver locations. Appendix 10.2 includes the detailed CadnaA concrete crushing construction equipment noise model inputs.

EXHIBIT 10-B: CONCRETE CRUSHING NOISE SOURCE LOCATIONS

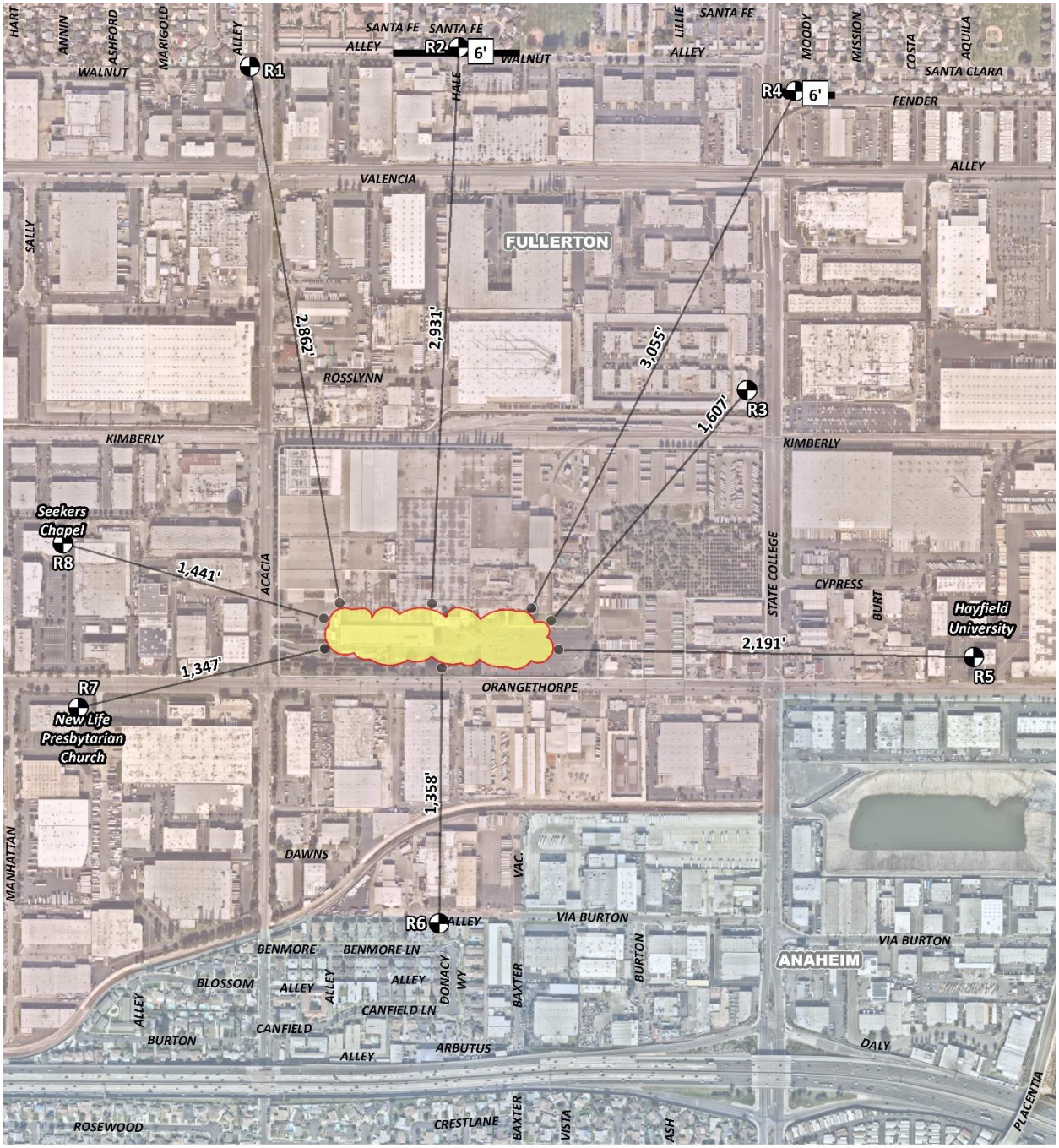


TABLE 10-8: CONCRETE CRUSHING CONSTRUCTION EQUIPMENT NOISE LEVEL SUMMARY

Receiver Location[1]	Use	City	Meas. Location[2]	Construction Noise Levels (dBA L_{eq})		
				Concrete Crushing[3]	Daytime Threshold[4]	Threshold Exceeded?[5]
R1	Residential	Fullerton	L1	57.1	64.9	No
R2	Residential	Fullerton	L1	55.6	64.9	No
R3	Church	Fullerton	L2	42.9	63.0	No
R4	Residential	Fullerton	L3	55.1	65.4	No
R5	School	Fullerton	L4	52.4	62.5	No
R6	Residential	Anaheim	L5	51.7	60.0	No
R7	Church	Fullerton	L6	57.9	61.4	No
R8	Church	Fullerton	L7	46.3	54.8	No

[1] Noise receiver locations are shown on Exhibit 10-B.
[2] Reference noise level measurement locations as shown on Exhibit 5-A.
[3] Concrete crushing noise level calculations provided in Appendix 10.2
[4] Exterior noise level standards adjusted to reflect the daytime ambient noise levels (Table 5-1) per the City of Fullerton Municipal Code, Section 15.90.030 and the City of Anaheim Municipal Code, Chapter 6.70.
[5] Do the estimated Project construction noise levels exceed the daytime construction noise level threshold?

10.9 CONCRETE CRUSHING CONSTRUCTION VIBRATION ANALYSIS AND COMPLIANCE

Using the vibration source level of construction equipment list provided on Table 10-5 that includes source levels for a hoe ram or breaker representing a percussion hammer fitted to an excavator for breaking concrete and the construction vibration assessment methodology published by the FTA, it is possible to estimate the Project concrete crushing construction vibration impacts. Table 10-9 presents the expected concrete crushing construction equipment vibration levels when the equipment with the highest reference vibration activity operating at the closest point from the edge of primary construction activity (Project site boundary) to each receiver location.

At distances ranging from 1,347 feet to 3,055 feet from the Project concrete crushing construction activities as shown on Exhibit 10-B, construction vibration levels are estimated to range from 24.4 to 35.1 VdB and will remain below the FTA Transit Noise and Vibration Impact Assessment Manual maximum acceptable vibration criteria of 78 VdB for daytime residential uses at all receiver locations. Therefore, the Project-related vibration impacts are considered *less than significant* during Project concrete crushing construction activities at the Project site.

TABLE 10-9: CONCRETE CRUSHING EQUIPMENT VIBRATION LEVELS

Receiver Location[1]	Distance to Construction Activity (Feet)	Receiver Vibration Levels (VdB)[2]						Threshold VdB[3]	Threshold Exceeded?[4]
		Small Bulldozer	Jack-hammer	Loaded Trucks	Large Bulldozer	Hoe Ram (Breaker)	Highest Vibration Levels		
R1	2,862'	0.0	17.2	24.2	25.2	25.2	25.2	78	No
R2	2,931'	0.0	16.9	23.9	24.9	24.9	24.9	78	No
R3	1,607'	3.8	24.8	31.8	32.8	32.8	32.8	78	No
R4	3,055'	0.0	16.4	23.4	24.4	24.4	24.4	78	No
R5	2,191'	0.0	20.7	27.7	28.7	28.7	28.7	78	No
R6	1,358'	6.0	27.0	34.0	35.0	35.0	35.0	78	No
R7	1,347'	6.1	27.1	34.1	35.1	35.1	35.1	78	No
R8	1,441'	5.2	26.2	33.2	34.2	34.2	34.2	78	No

[1] Concrete Crushing receiver locations are shown on Exhibit 10-B.
[2] Based on the Vibration Source Levels of Construction Equipment included on Table 10-5.
[3] FTA Transit Noise and Vibration Impact Assessment Manual maximum acceptable vibration criteria as shown in Section 4.2.
[4] Does the vibration level exceed the maximum acceptable vibration threshold?

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11 REFERENCES

1. **State of California.** *California Environmental Quality Act, Appendix G.* 2018.
2. **Urban Crossroads.** *Goodman Logistics Center Traffic Analysis.* July 2020.
3. **U.S. Department of Transportation, Federal Transit Administration.** *Transit Noise and Vibration Impact Assessment Manual.* September 2018.
4. **California Department of Transportation Environmental Program.** *Technical Noise Supplement - A Technical Supplement to the Traffic Noise Analysis Protocol.* Sacramento, CA : s.n., September 2013.
5. **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.
6. **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.
7. **U.S. Department of Transportation, Federal Highway Administration.** *Highway Traffic Noise in the United States, Problem and Response.* April 2000. p. 3.
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9. **Office of Planning and Research.** *State of California General Plan Guidelines.* October 2017.
10. **State of California.** *2016 California Green Building Standards Code.* January 2017.
11. **City of Fullerton.** *The Fullerton Plan, Chapter 7, Noise.* May 2012.
12. **City of Anaheim.** *Municipal Code Chapter 6.70 Sound Pressure Levels.*
13. **American National Standards Institute (ANSI).** *Specification for Sound Level Meters ANSI S1.4-2014/IEC 61672-1:2013.*
14. **U.S. Department of Transportation, Federal Highway Administration.** *FHWA Highway Traffic Noise Prediction Model.* December 1978. FHWA-RD-77-108.
15. **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.
16. **California Department of Transportation.** *Traffic Noise Attenuation as a Function of Ground and Vegetation Final Report.* June 1995. FHWA/CA/TL-95/23.
17. **City of Fullerton.** *Municipal Code, Chapter 15.90 Noise Standards and Regulation.*
18. **U.S. Department of Transportation, Federal Highway Administration, Office of Environment and Planning.** *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 Goodman Logistics Center Fullerton 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) 336-5979.

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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:

CITY OF FULLERTON MUNICIPAL CODE

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15.40.080. Industrial environmental controls.

To minimize environmental pollution by industrial or other activities the following standards are prescribed for any activity carried on in an industrial zone classification:

A. Noise control:

Sound related to industrial or manufacturing processes, excluding traffic noise, shall comply with Chapter 15.90 of this title.

B. Smoke, dust, fumes and contaminants:

Industrial or manufacturing processes out of which evolve smoke, dust, fumes, particulate matter, contaminants and specific contaminants, shall comply with the latest rules and regulations of the South Coast Air Quality Management District.

C. Odors:

Odors from gases or other odorous matter shall not be in such quantities as to be offensive beyond the property line of the parcel from which said odors emanate.

D. Hazardous materials:

1. Hazardous materials shall not be emitted into the air or ground that can cause damage to health, to animals or vegetation, or other forms of property or that can cause any excessive staining beyond the property line of the lot on which the use is located.

2. A permit shall be obtained for storage of hazardous materials from the Fullerton Fire Department.

E. Vibration:

Vibration from any machine, operation or process that can cause noticeable displacement as measured at the property line of the parcel on which the use is located shall be prohibited.

F. Glare:

All on-site lighting devices shall be designed so as to limit glare/spillover onto adjacent property with a residential zone classification.

(Ord. 3066, (part), 2005: Ord. 2982, 2001)

Chapter 15.90
NOISE STANDARDS AND REGULATION

Sections:

15.90.010. Intent and purpose.

A. In order to control unnecessary, excessive and annoying sounds emanating from incorporated areas of the city, it shall be the policy of the city to prohibit such sounds generated from all sources as specified in this chapter except that noise regulated by any penal statute or ordinance and those activities that have been preempted by state or federal law.

B. Specified noise levels have been determined to be detrimental to the public health, welfare and safety and contrary to public interest; therefore, creating, maintaining, causing or allowing to create, maintain or cause any noise in a manner prohibited by or not in conformity with the provisions of this chapter is a public nuisance and shall be punishable as such.

(Ord. 2982, 2001)

15.90.020. Definitions.

A. Whenever used in this chapter, the following words, phrases and terms shall have the meaning as indicated below:

AMBIENT NOISE LEVEL means the all-encompassing noise level associated with a given environment, being a composite of sounds from all sources, excluding the alleged offensive noise, at the location and approximate time at which a comparison with the alleged offensive noise is to be made.

CUMULATIVE PERIOD means an additive period of time composed of individual time segments that may be continuous or interrupted.

DECIBEL (dB) means a unit that denotes the ratio between two quantities which are proportional to power: the number of decibels corresponding to the ratio of 2 amounts of power is

10 times the logarithm to the base 10 of this ratio.

EMERGENCY MACHINERY, VEHICLE OR WORK means any machinery, vehicle or work used, employed or performed in an effort to protect, provide or restore safe conditions in the community or for the citizenry, or work by private or public utilities when restoring utility service.

FIXED NOISE SOURCE means a stationary device that creates sounds while fixed or motionless, including but not limited to industrial and commercial machinery and equipment, pumps, fans, compressors, generators, air conditioners and refrigeration equipment.

GRADING means any excavating or filling of earth material or any combination thereof conducted to prepare a site for construction or other improvements thereon.

IMPACT NOISE means the noise produced by the collision of one mass in motion with a second mass that may be either in motion or at rest.

MOBILE NOISE SOURCE shall mean any noise source that is not stationary, including but not limited to motorized vehicles, trains, and aircraft.

NOISE LEVEL means the "A" weighted sound pressure level in decibels obtained by using a sound level meter at slow response with a reference pressure of 20 micro-newtons per square meter. The unit of measurement shall be designated as dB(A).

PERSON means a person, firm, association, co-partnership, joint venture, corporation of any entity, public or private in nature.

RESIDENTIAL PROPERTY means a parcel of real property that is developed and used either in part or in whole for residential purposes, other than transient uses such as hotels and motels.

SIMPLE TONE NOISEmeans a noise characterized by a predominant frequency or frequencies so that other frequencies cannot be readily distinguished.

SOUND PRESSURE LEVEL of a sound, in decibels, means 20 times the logarithm to the base 10 of the ratio of the pressure of the sound to a reference pressure, which reference pressure shall be explicitly stated.

B. A ***NOISE ZONE*** is defined as an area where a specific set of standards has been established for allowable interior and exterior noise levels.

1. A ***RESIDENTIAL NOISE ZONE*** includes all properties with a residential zone classification, whether incorporated or unincorporated.

2. A ***COMMERCIAL NOISE ZONE*** includes all properties with a commercial or public land use zone classification, whether incorporated or unincorporated.

3. An ***INDUSTRIAL NOISE ZONE*** includes all properties with an industrial zone classification, whether incorporated or unincorporated.

(Ord. 2982, 2001)

15.90.030. Noise standards.

A. The following noise standards, unless otherwise specifically indicated, shall apply to all property within the Residential Noise Zone:

Allowable Interior Noise Level	Time Period

Not to exceed 55 dB(A)	7:00 a.m. - 10:00 p.m.
Not to exceed 45 dB(A)	10:00 p.m. - 7:00 a.m.

Allowable Exterior Noise Level	Time Period
Not to exceed 55 dB(A)	7:00 a.m. - 10:00 p.m.
Not to exceed 50 dB(A)	10:00 p.m. - 7:00 a.m.

B. Noise standards for a sensitive use:

1. A "sensitive use" for the purpose of this chapter means any private or public school, hospital, residential care facility for the elderly, and religious institution.

2. It shall be unlawful for any person at any location within the incorporated area of the city to create any noise that causes the noise level at any sensitive use, while the same is in operation to exceed the noise limits as specified for the Residential Noise Zone, notwithstanding the sensitive use may be located outside of the Residential Noise Zone.

C. It shall be unlawful for any person at any location within the incorporated area of the city to create any noise which can be classified as being continuous, reoccurring, predictable, or whose operation of noise-generating capabilities can be stopped or started at a specified time, or to allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person, which causes the noise level, when measured on the property, either incorporated or unincorporated, to exceed:

1. The noise standard for a cumulative period of more than 30 minutes in any hour;

2. The noise standard plus 5 dB(A) for a cumulative period of more than 15 minutes but less than 30 minutes in any hour;

3. The noise standard plus 10 dB(A) for a cumulative period of more than 5 minutes but less than 15 minutes in any hour;

4. The noise standard plus 15 dB(A) for a cumulative period of more than one minute but less than five minutes in any hour;

5. The noise standard plus 20 dB(A) for a cumulative period of less than one minute in an hour.

D. In the event the ambient noise level exceeds any of the five noise limit categories listed in Subsection C, the cumulative period applicable to the category shall be increased to reflect the ambient noise level.

(Ord. 2982, 2001)

15.90.040. Activities exempt from standards.

A. The following activities shall be exempt from the noise level standards specified by this chapter:

1. School bands, school athletic and school entertainment events.

2. Outdoor gatherings, public dances, shows and sporting and entertainment events provided the events are conducted pursuant to a permit and/or license issued by the city.

3. Activities conducted on public parks, public playgrounds and public or private school grounds.

4. Any mechanical device, apparatus or equipment used, related to or connected with the use of machinery, vehicles, or work due to an emergency.

5. All mechanical devices, apparatus or equipment which are utilized for the protection or salvage of agricultural crops during periods of potential or actual frost damage or other adverse weather conditions.

6. Mobile noise sources associated with agricultural pest control through pesticide application.

7. Noise from vehicular traffic on public streets.

B. For the drilling of water wells, the Director of Development Services may approve or conditionally approve an exception or limited exemption from the noise level standards of this chapter.

(Ord. 2982, 2001)

15.90.050. Activities with special provisions.

A. The following activities shall be exempt from the noise level standards specified by this chapter provided they take place between the hours of 7 a.m. and 8 p.m. on any day except Sunday or a City-recognized holiday.

1. Noise sources associated with construction, repair, remodeling, or grading of any real property;

2. Mobile noise sources associated with agricultural operations;

3. Noise sources associated with the maintenance of real property, including normal maintenance and repair by city and utility crews.

B. Installation of air conditioning, refrigeration and pool equipment shall be certified to be within the provisions of this chapter for night and day operation noise levels.

(Ord. 2982, 2001: Ord. 3026, 2003)

15.90.060. Noise level measurement.

A. The location selected for measuring exterior noise levels shall be at any point on the affected property. The affected property shall be the address from which the complaint was received.

B. The location selected for measuring interior noise levels shall be made within the affected property at a point at least four feet from the wall, ceiling or floor nearest the noise source.

C. Any noise level measurements made pursuant to the provisions of this chapter shall be performed using a sound level meter that meets the American National Standard Institute's Standard S1.4 - 1971 for Type 1 or Type 2 sound level meters or an instrument and the associated recording and analyzing equipment which will provide equivalent data.

(Ord. 2982, 2001)

15.90.070. Enforcement.

A. The Director of Development Services and his duly authorized representatives are directed to enforce the provisions of this chapter.

B. No person shall interfere with, oppose or resist any authorized person charged with the enforcement of this chapter.

(Ord. 2982, 2001)

15.90.080. Appeal.

A. The owner or operator of a noise source who has been cited in violation of the provisions of this chapter may appeal the citation to the City Council. Within 15 days following receipt of a notice of appeal, the City Clerk shall forward to the City Council the recommendation of the Director of Development Services, the notice of appeal, and all evidence concerning the appeal received by the Director. In addition, any person may file with the City Council written arguments supporting or attacking the citation. The City Clerk shall mail to the applicant and the complainant a notice of the date set for hearing of the appeal. The notice shall be mailed at least ten days prior to the hearing date.

B. Within 60 days following its receipt of the notice of the appeal, the City Council shall affirm, modify or reverse the citation. The decision shall be based upon the evaluation by the City Council of the matter. As part of its decision, the City Council may direct the Director of Development Services to conduct further proceedings on the appeal. Failure of the City Council to affirm, modify or reverse the citation within the 60-day period shall constitute an affirmation of the citation.

(Ord. 2982, 2001)

APPENDIX 3.2:

CITY OF ANAHEIM MUNICIPAL CODE

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Chapter 6.70 SOUND PRESSURE LEVELS

Sections:

6.70.010 ESTABLISHED.

Sound produced in excess of the sound pressure levels permitted herein are hereby determined to be objectionable and constitute an infringement upon the right and quiet enjoyment ofproperty in this City.

No person shall within the City create any sound radiated for extended periods from any premises which produces asound pressure level at any point on the property line in excess of sixty decibels (Re 0.0002 Microbar) read on the A-scale of a sound level meter. Readings shall be taken in accordance with the instrument manufacturer's instructions, using the slowest meter response.

The sound level measuring microphone shall be placed at any point on the property line, but not closer than three (3) feet from any wall and not less than three (3) feet above the ground, where the above listed maximum sound pressure level shall apply. At any point the measured level shall be the average of not less than three (3) readings taken at two (2) minute intervals. To have valid readings, the levels must be five (5) decibels or more above the levels prevailing at the same point when the source's ofthe alleged objectionable sound are not operating.

Sound pressure levels shall be measured with a sound level meter manufactured according to American Standard S1.4-1961 published by the American Standards Association, Inc., New York City, New York.

Traffic sounds sound created by emergencyactivities and sound created by governmental units or their contractors shall be exempt from the applications of this chapter. Sound created by construction or building repair of any premises within the City shall be exempt from the applications of this chapter during the hours of 7:00 a.m. to 7:00 p.m. Additional work hours may be permitted if deemed necessary by the Director of Public Works or Building Official. (Ord. 2526 § 1 (part); June 18, 1968; Ord. 3400 § 1; February 11, 1975: Ord. 6020 § 1; April 25, 2006.)

6.70.020 VIOLATIONS AND PENALTIES.

The first violation of this chapter by any person shall be punishable as an infraction in accordance with applicable provisions of the California Penal Code and the California Government Code. The second and all subsequent violations of said chapter committed by such person shall be punishable as a misdemeanor. (Ord. 5929 § 9; July 27, 2004.)

6.70.030 ENFORCEMENT.

The Code Enforcement Manager of the City of Anaheim shall enforce the provisions of this chapter. (Ord. 5812 § 25; June 11, 2002.)

APPENDIX 5.1:

STUDY AREA PHOTOS

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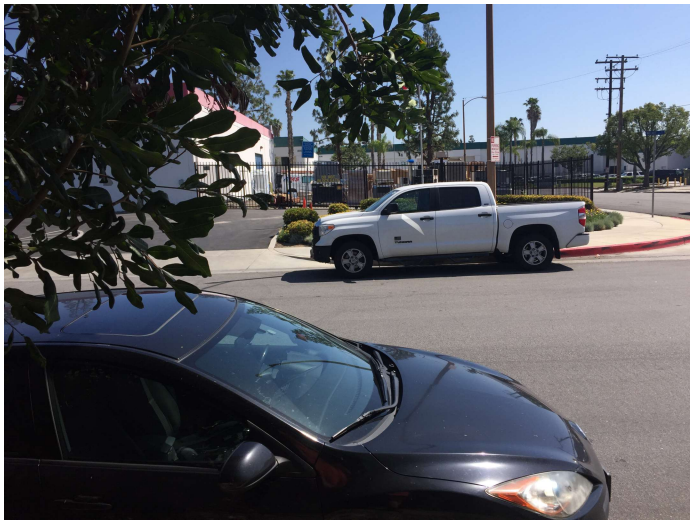
JN:13158 Study Area Photos

L1_E
33, 52' 7.530000", 117, 53' 41.360000"

L1_N
33, 52' 6.830000", 117, 53' 40.970000"



L1_S
33, 52' 7.340000", 117, 53' 41.160000"

L1_W
33, 52' 7.770000", 117, 53' 41.380000"

L2_E
33, 51' 56.460000", 117, 53' 28.360000"

L2_N
33, 51' 56.600000", 117, 53' 28.640000"

JN:13158 Study Area Photos

L2_S
33, 51' 56.730000", 117, 53' 28.470000"

L2_W
33, 51' 56.460000", 117, 53' 28.360000"

L3_E
33, 52' 5.450000", 117, 53' 16.420000"

L3_N
33, 52' 5.490000", 117, 53' 16.420000"

L3_S
33, 52' 5.460000", 117, 53' 16.420000"

L3_W
33, 52' 5.450000", 117, 53' 16.420000"

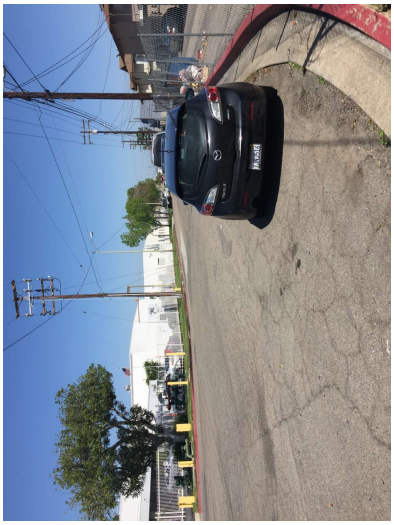
JN:13158 Study Area Photos

L4_E
33, 51' 36.620000", 117, 53' 9.410000"

L4_N
33, 51' 36.630000", 117, 53' 9.440000"

L4_S
33, 51' 36.630000", 117, 53' 9.440000"

L4_W
33, 51' 36.620000", 117, 53' 9.410000"



L5_E
33, 51' 22.960000", 117, 53' 44.050000"

L5_N
33, 51' 22.720000", 117, 53' 42.400000"

JN:13158 Study Area Photos

L5_S
33, 51' 23.120000", 117, 53' 44.100000"

L5_W
33, 51' 22.960000", 117, 53' 44.020000"

L6_E
33, 51' 33.520000", 117, 54' 8.300000"

L6_N
33, 51' 33.500000", 117, 54' 8.220000"

L6_S
33, 51' 33.500000", 117, 54' 8.220000"

L6_W
33, 51' 33.560000", 117, 54' 8.300000"

JN:13158 Study Area Photos

L7_E
33, 51' 45.660000", 117, 54' 9.260000"

L7_N
33, 51' 44.750000", 117, 54' 9.620000"

L7_S
33, 51' 44.750000", 117, 54' 9.620000"

L7_W
33, 51' 45.780000", 117, 54' 9.180000"

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APPENDIX 5.2:

NOISE LEVEL MEASUREMENT WORKSHEETS

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24-Hour Noise Level Measurement Summary

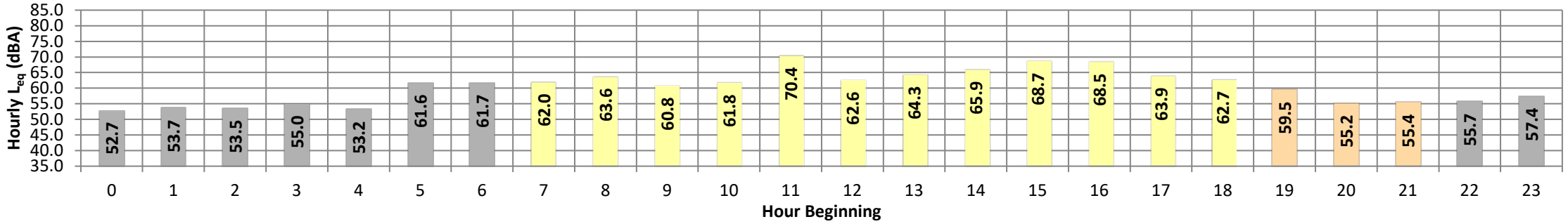
Date: Wednesday, April 29, 2020
Project: Goodman Logistics Center

Location: L1 - Located north of the Project site on Walnut Avenue near existing single-family residential home at 2016 E Santa Fe Avenue.

Meter: Piccolo I

JN: 13158
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	52.7	78.1	41.5	66.0	62.0	52.0	49.0	43.0	43.0	42.0	42.0	41.0	52.7	10.0	62.7
	1	53.7	75.8	41.3	67.0	63.0	53.0	51.0	45.0	43.0	42.0	41.0	41.0	53.7	10.0	63.7
	2	53.5	76.7	42.0	67.0	64.0	54.0	52.0	45.0	44.0	42.0	42.0	42.0	53.5	10.0	63.5
	3	55.0	81.4	41.6	68.0	63.0	53.0	51.0	44.0	43.0	42.0	42.0	41.0	55.0	10.0	65.0
	4	53.2	76.3	40.4	67.0	62.0	52.0	50.0	44.0	43.0	41.0	41.0	40.0	53.2	10.0	63.2
	5	61.6	87.6	40.5	73.0	71.0	65.0	62.0	54.0	50.0	44.0	43.0	41.0	61.6	10.0	71.6
	6	61.7	85.0	43.9	73.0	70.0	67.0	65.0	58.0	53.0	47.0	46.0	44.0	61.7	10.0	71.7
Day	7	62.0	80.6	43.4	73.0	71.0	69.0	67.0	57.0	50.0	45.0	44.0	43.0	62.0	0.0	62.0
	8	63.6	87.7	43.7	75.0	72.0	68.0	65.0	56.0	50.0	46.0	45.0	44.0	63.6	0.0	63.6
	9	60.8	80.2	43.9	73.0	70.0	67.0	64.0	56.0	50.0	45.0	45.0	44.0	60.8	0.0	60.8
	10	61.8	80.8	45.4	74.0	72.0	68.0	65.0	56.0	50.0	47.0	46.0	46.0	61.8	0.0	61.8
	11	70.4	95.6	48.1	76.0	74.0	72.0	72.0	71.0	66.0	53.0	51.0	49.0	70.4	0.0	70.4
	12	62.6	83.2	46.7	75.0	72.0	69.0	66.0	57.0	51.0	48.0	48.0	47.0	62.6	0.0	62.6
	13	64.3	84.9	47.5	76.0	74.0	71.0	69.0	58.0	53.0	49.0	49.0	48.0	64.3	0.0	64.3
	14	65.9	84.6	46.4	78.0	75.0	72.0	70.0	62.0	54.0	49.0	49.0	47.0	65.9	0.0	65.9
	15	68.7	96.9	50.0	78.0	75.0	70.0	68.0	60.0	55.0	51.0	51.0	50.0	68.7	0.0	68.7
	16	68.5	96.6	48.8	79.0	76.0	72.0	70.0	62.0	55.0	50.0	50.0	49.0	68.5	0.0	68.5
	17	63.9	86.7	45.7	76.0	73.0	70.0	68.0	58.0	52.0	48.0	47.0	46.0	63.9	0.0	63.9
	18	62.7	84.1	45.6	75.0	72.0	68.0	65.0	54.0	49.0	47.0	46.0	46.0	62.7	0.0	62.7
Evening	19	59.5	82.3	44.6	72.0	70.0	66.0	62.0	52.0	47.0	45.0	45.0	45.0	59.5	5.0	64.5
	20	55.2	77.6	42.6	69.0	66.0	55.0	52.0	46.0	44.0	43.0	43.0	43.0	55.2	5.0	60.2
	21	55.4	79.3	43.3	69.0	64.0	54.0	49.0	45.0	44.0	44.0	43.0	43.0	55.4	5.0	60.4
Night	22	55.7	79.6	42.6	69.0	64.0	54.0	50.0	46.0	45.0	44.0	43.0	43.0	55.7	10.0	65.7
	23	57.4	82.8	42.4	69.0	67.0	63.0	60.0	50.0	45.0	43.0	43.0	42.0	57.4	10.0	67.4

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	60.8	80.2	43.4	73.0	70.0	67.0	64.0	54.0	49.0	45.0	44.0	43.0
	Max	70.4	96.9	50.0	79.0	76.0	72.0	72.0	71.0	66.0	53.0	51.0	50.0
Energy Average		65.7	Average:		75.7	73.0	69.7	67.4	58.9	52.9	48.2	47.6	46.6
Evening	Min	55.2	77.6	42.6	69.0	64.0	54.0	49.0	45.0	44.0	43.0	43.0	43.0
	Max	59.5	82.3	44.6	72.0	70.0	66.0	62.0	52.0	47.0	45.0	45.0	45.0
Energy Average		57.2	Average:		70.0	66.7	58.3	54.3	47.7	45.0	44.0	43.7	43.7
Night	Min	52.7	75.8	40.4	66.0	62.0	52.0	49.0	43.0	43.0	41.0	41.0	40.0
	Max	61.7	87.6	43.9	73.0	71.0	67.0	65.0	58.0	53.0	47.0	46.0	44.0
Energy Average		57.5	Average:		68.8	65.1	57.0	54.4	47.7	45.4	43.0	42.6	41.7

L_{eq} (dBA)		
24-Hour	Daytime	Nighttime
63.3	64.9	57.5

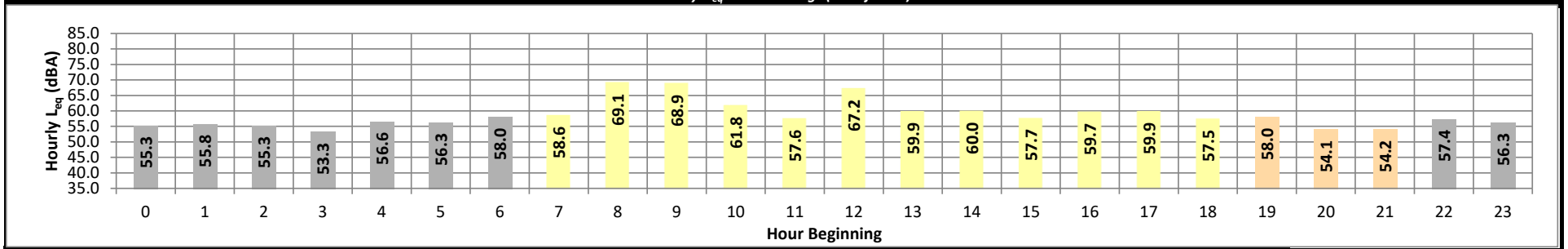
24-Hour CNEL (dBA)
66.2

24-Hour Noise Level Measurement Summary

Date: Wednesday, April 29, 2020 *Location:* L2 - Located northeast of the Project site near Picture This at 631 S State College Blvd. *Meter:* Piccolo I *JN:* 13158

Project: Goodman Logistics Center *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	55.3	74.8	49.8	67.0	61.0	56.0	55.0	52.0	51.0	51.0	50.0	50.0	55.3	10.0	65.3
	1	55.8	80.3	48.0	66.0	59.0	56.0	54.0	52.0	51.0	50.0	49.0	48.0	55.8	10.0	65.8
	2	55.3	79.4	49.4	65.0	60.0	57.0	55.0	52.0	51.0	50.0	50.0	50.0	55.3	10.0	65.3
	3	53.3	70.3	48.3	60.0	57.0	55.0	54.0	52.0	51.0	50.0	50.0	49.0	53.3	10.0	63.3
	4	56.6	78.7	49.5	67.0	62.0	57.0	56.0	53.0	52.0	50.0	50.0	50.0	56.6	10.0	66.6
	5	56.3	79.0	49.4	66.0	63.0	59.0	56.0	53.0	52.0	51.0	50.0	50.0	56.3	10.0	66.3
	6	58.0	79.4	52.3	69.0	65.0	59.0	57.0	55.0	54.0	53.0	53.0	52.0	58.0	10.0	68.0
Day	7	58.6	79.3	52.0	70.0	65.0	60.0	58.0	56.0	55.0	53.0	53.0	52.0	58.6	0.0	58.6
	8	69.1	100.0	54.9	80.0	79.0	68.0	64.0	58.0	57.0	56.0	55.0	55.0	69.1	0.0	69.1
	9	68.9	87.6	54.4	80.0	79.0	79.0	71.0	58.0	57.0	55.0	55.0	55.0	68.9	0.0	68.9
	10	61.8	83.3	52.7	74.0	70.0	65.0	62.0	57.0	56.0	54.0	54.0	53.0	61.8	0.0	61.8
	11	57.6	73.6	53.8	65.0	63.0	60.0	58.0	57.0	56.0	55.0	55.0	54.0	57.6	0.0	57.6
	12	67.2	87.2	52.9	78.0	76.0	75.0	74.0	58.0	57.0	54.0	54.0	53.0	67.2	0.0	67.2
	13	59.9	82.8	51.0	71.0	67.0	63.0	60.0	57.0	55.0	53.0	52.0	51.0	59.9	0.0	59.9
	14	60.0	79.2	55.1	68.0	65.0	62.0	61.0	59.0	58.0	56.0	56.0	55.0	60.0	0.0	60.0
	15	57.7	73.4	52.9	66.0	63.0	60.0	59.0	57.0	56.0	54.0	54.0	53.0	57.7	0.0	57.7
	16	59.7	82.6	52.6	70.0	67.0	61.0	59.0	57.0	56.0	54.0	53.0	53.0	59.7	0.0	59.7
	17	59.9	84.9	51.0	74.0	66.0	59.0	57.0	55.0	54.0	52.0	52.0	51.0	59.9	0.0	59.9
	18	57.5	81.0	52.1	66.0	64.0	59.0	57.0	55.0	55.0	53.0	53.0	52.0	57.5	0.0	57.5
Evening	19	58.0	88.3	51.1	63.0	57.0	56.0	55.0	54.0	53.0	52.0	52.0	51.0	58.0	5.0	63.0
	20	54.1	69.4	51.4	57.0	56.0	55.0	55.0	54.0	53.0	52.0	52.0	51.0	54.1	5.0	59.1
	21	54.2	64.5	50.4	58.0	57.0	55.0	55.0	54.0	53.0	52.0	51.0	51.0	54.2	5.0	59.2
Night	22	57.4	76.7	50.7	68.0	66.0	61.0	59.0	53.0	53.0	52.0	51.0	51.0	57.4	10.0	67.4
	23	56.3	76.1	50.6	67.0	62.0	57.0	56.0	54.0	53.0	52.0	52.0	51.0	56.3	10.0	66.3

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	57.5	73.4	51.0	65.0	63.0	59.0	57.0	55.0	54.0	52.0	52.0	51.0
	Max	69.1	100.0	55.1	80.0	79.0	79.0	74.0	59.0	58.0	56.0	56.0	55.0
Energy Average		63.8	Average:		71.8	68.7	64.3	61.7	57.0	56.0	54.1	53.8	53.1
Evening	Min	54.1	64.5	50.4	57.0	56.0	55.0	55.0	54.0	53.0	52.0	51.0	51.0
	Max	58.0	88.3	51.4	63.0	57.0	56.0	55.0	54.0	53.0	52.0	52.0	51.0
Energy Average		55.8	Average:		59.3	56.7	55.3	55.0	54.0	53.0	52.0	51.7	51.0
Night	Min	53.3	70.3	48.0	60.0	57.0	55.0	54.0	52.0	51.0	50.0	49.0	48.0
	Max	58.0	80.3	52.3	69.0	66.0	61.0	59.0	55.0	54.0	53.0	53.0	52.0
Energy Average		56.2	Average:		66.1	61.7	57.4	55.8	52.9	52.0	51.0	50.6	50.1

L_{eq} (dBA)

24-Hour	*Daytime*	*Nighttime*
61.5	**63.0**	**56.2**

24-Hour CNEL (dBA)

64.7

24-Hour Noise Level Measurement Summary

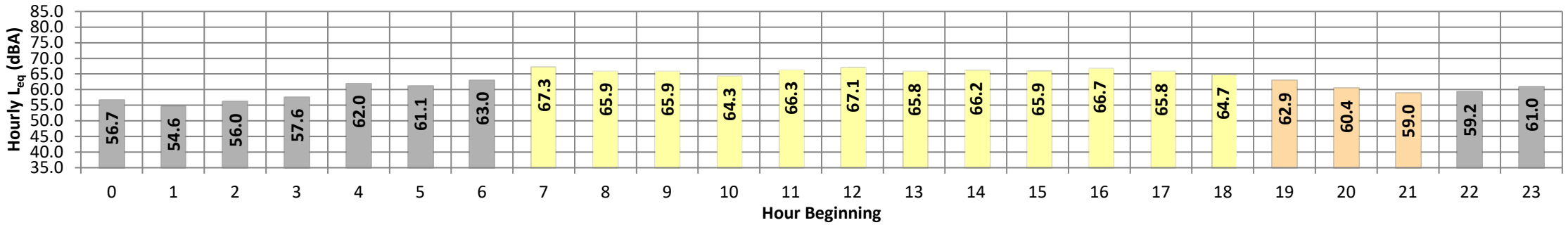
Date: Wednesday, April 29, 2020
Project: Goodman Logistics Center

Location: L3 - Located northeast of the Project site on Fender avenue near existing single-family residential home at 2400 Santa Clara Avenue.

Meter: Piccolo II

JN: 13158
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	56.7	67.0	48.9	66.6	65.8	63.2	61.4	56.2	51.2	49.3	49.1	49.0	56.7	10.0	66.7
	1	54.6	63.3	48.3	62.9	62.4	60.7	59.5	54.3	50.9	49.0	48.7	48.4	54.6	10.0	64.6
	2	56.0	64.0	47.7	63.7	63.4	62.4	61.8	56.8	50.6	48.5	48.1	47.8	56.0	10.0	66.0
	3	57.6	68.6	47.9	68.1	67.2	64.5	62.9	55.8	50.5	48.6	48.4	48.1	57.6	10.0	67.6
	4	62.0	75.9	47.4	75.2	73.8	69.1	66.1	55.8	49.8	47.8	47.6	47.5	62.0	10.0	72.0
	5	61.1	73.5	49.0	72.9	71.8	68.5	66.1	58.8	52.2	49.6	49.4	49.1	61.1	10.0	71.1
	6	63.0	74.5	48.6	74.1	73.2	70.4	68.4	61.3	54.5	49.3	49.0	48.7	63.0	10.0	73.0
Day	7	67.3	78.7	54.9	78.3	77.3	74.2	72.0	65.9	61.5	56.2	55.7	55.0	67.3	0.0	67.3
	8	65.9	76.1	54.7	75.7	74.7	72.4	70.9	65.8	60.5	56.0	55.5	54.9	65.9	0.0	65.9
	9	65.9	77.1	53.5	76.5	75.5	72.8	71.0	65.1	59.5	54.6	54.1	53.7	65.9	0.0	65.9
	10	64.3	75.7	50.7	75.2	74.3	71.6	69.8	63.0	55.9	51.5	51.2	50.8	64.3	0.0	64.3
	11	66.3	77.7	52.1	77.2	76.1	73.2	71.5	65.1	59.8	53.1	52.5	52.2	66.3	0.0	66.3
	12	67.1	78.3	52.1	77.8	76.8	74.2	72.3	66.2	59.9	53.2	52.7	52.3	67.1	0.0	67.1
	13	65.8	77.3	51.7	76.8	75.7	72.7	70.9	64.8	58.9	52.8	52.3	51.8	65.8	0.0	65.8
	14	66.2	77.5	53.4	76.9	75.8	73.2	71.4	65.3	59.9	54.3	53.9	53.5	66.2	0.0	66.2
	15	65.9	76.8	53.9	76.2	75.1	72.8	71.2	65.5	60.1	54.9	54.5	54.0	65.9	0.0	65.9
	16	66.7	78.3	53.5	77.6	76.4	73.5	71.7	65.8	60.3	54.6	54.0	53.7	66.7	0.0	66.7
	17	65.8	77.4	53.0	76.8	75.6	72.8	70.9	64.7	59.2	54.0	53.5	53.1	65.8	0.0	65.8
	18	64.7	76.7	52.4	76.2	75.1	71.8	69.6	62.9	57.3	53.2	52.9	52.5	64.7	0.0	64.7
Evening	19	62.9	74.7	51.9	74.2	73.2	70.3	68.4	59.9	54.9	52.5	52.2	52.0	62.9	5.0	67.9
	20	60.4	73.9	50.0	73.2	71.8	67.4	64.7	55.7	52.4	50.4	50.2	50.1	60.4	5.0	65.4
	21	59.0	71.4	50.2	71.0	69.9	66.4	63.9	55.0	51.6	50.6	50.4	50.3	59.0	5.0	64.0
Night	22	59.2	72.0	50.1	71.6	70.5	66.9	63.7	54.1	51.4	50.5	50.4	50.2	59.2	10.0	69.2
	23	61.0	70.1	53.2	69.7	69.0	67.1	66.0	60.9	56.7	54.1	53.8	53.3	61.0	10.0	71.0

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	64.3	75.7	50.7	75.2	74.3	71.6	69.6	62.9	55.9	51.5	51.2	50.8
	Max	67.3	78.7	54.9	78.3	77.3	74.2	72.3	66.2	61.5	56.2	55.7	55.0
Energy Average		66.1	Average:		76.7	75.7	72.9	71.1	65.0	59.4	54.1	53.6	53.1
Evening	Min	59.0	71.4	50.0	71.0	69.9	66.4	63.9	55.0	51.6	50.4	50.2	50.1
	Max	62.9	74.7	51.9	74.2	73.2	70.3	68.4	59.9	54.9	52.5	52.2	52.0
Energy Average		61.1	Average:		72.8	71.7	68.0	65.7	56.9	53.0	51.2	51.0	50.8
Night	Min	54.6	63.3	47.4	62.9	62.4	60.7	59.5	54.1	49.8	47.8	47.6	47.5
	Max	63.0	75.9	53.2	75.2	73.8	70.4	68.4	61.3	56.7	54.1	53.8	53.3
Energy Average		59.8	Average:		69.4	68.6	65.9	64.0	57.1	52.0	49.6	49.4	49.1

L_{eq} (dBA)		
24-Hour	Daytime	Nighttime
64.0	65.4	59.8

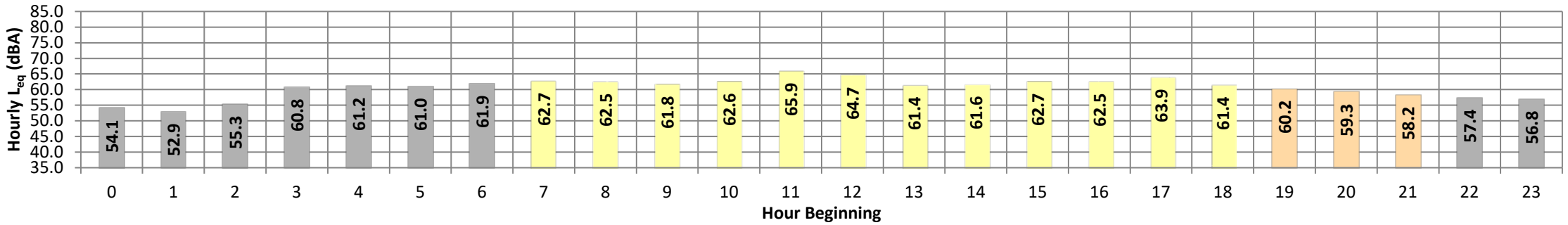
24-Hour CNEL (dBA)
67.9

24-Hour Noise Level Measurement Summary

Date: Wednesday, April 29, 2020 *Location:* L4 - Located east of the Project site near Hayfield University. *Meter:* Piccolo II *JN:* 13158

Project: Goodman Logistics Center *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	63.3	47.8	61.6	60.8	59.7	58.8	54.1	51.4	49.3	49.0	48.4	54.1	10.0	64.1
	1	52.9	64.0	44.6	62.6	61.2	59.4	58.5	52.1	48.1	46.0	45.7	45.2	52.9	10.0	62.9
	2	55.3	66.2	44.2	64.7	63.8	62.3	61.4	54.2	48.6	46.3	45.1	44.6	55.3	10.0	65.3
	3	60.8	66.8	58.1	65.6	65.0	64.0	63.3	60.9	60.0	59.0	58.8	58.5	60.8	10.0	70.8
	4	61.2	68.7	56.9	67.3	66.6	65.1	64.4	61.7	59.8	58.0	57.8	57.3	61.2	10.0	71.2
	5	61.0	70.3	50.6	69.1	68.3	66.8	65.9	61.7	58.4	52.5	51.7	51.0	61.0	10.0	71.0
	6	61.9	70.6	51.3	69.0	68.3	67.1	66.3	63.3	59.6	53.5	52.7	51.8	61.9	10.0	71.9
Day	7	62.7	72.4	51.1	70.7	69.9	68.2	67.1	63.8	60.2	53.6	52.6	51.6	62.7	0.0	62.7
	8	62.5	71.1	52.2	69.7	68.9	67.5	66.6	63.8	60.5	54.4	53.6	52.8	62.5	0.0	62.5
	9	61.8	70.6	51.5	68.8	68.1	66.7	65.9	63.0	59.9	53.8	52.8	52.0	61.8	0.0	61.8
	10	62.6	69.5	57.0	68.0	67.3	66.4	65.8	63.7	61.7	58.7	58.3	57.6	62.6	0.0	62.6
	11	65.9	72.3	62.5	70.8	69.9	68.8	68.1	66.3	65.2	63.6	63.4	62.9	65.9	0.0	65.9
	12	64.7	72.7	60.9	70.6	69.7	67.8	67.1	65.1	63.7	61.9	61.6	61.2	64.7	0.0	64.7
	13	61.4	69.2	52.5	67.9	67.1	65.9	65.2	62.6	59.9	54.5	53.7	53.0	61.4	0.0	61.4
	14	61.6	70.6	53.1	68.9	68.1	66.9	65.7	62.4	59.6	55.0	54.3	53.6	61.6	0.0	61.6
	15	62.7	70.9	55.0	69.3	68.7	67.4	66.5	63.5	61.1	56.8	56.2	55.4	62.7	0.0	62.7
	16	62.5	69.9	55.3	68.4	67.7	66.8	66.1	63.7	61.3	57.1	56.4	55.7	62.5	0.0	62.5
	17	63.9	74.7	54.7	72.3	71.2	69.4	68.4	64.1	61.3	56.7	55.9	55.1	63.9	0.0	63.9
	18	61.4	69.4	52.3	68.1	67.3	66.2	65.5	62.8	59.7	54.2	53.5	52.8	61.4	0.0	61.4
Evening	19	60.2	69.5	50.2	67.9	66.8	65.6	64.8	61.3	57.4	51.7	51.1	50.6	60.2	5.0	65.2
	20	59.3	70.2	48.4	68.1	66.8	65.3	64.0	59.7	56.0	50.3	49.5	48.8	59.3	5.0	64.3
	21	58.2	67.5	48.3	66.0	65.0	63.5	62.8	59.4	55.3	49.8	49.3	48.7	58.2	5.0	63.2
Night	22	57.4	66.8	47.9	65.3	64.5	63.0	62.1	58.3	54.1	49.3	48.8	48.3	57.4	10.0	67.4
	23	56.8	66.5	47.9	64.9	63.9	62.3	61.6	57.6	53.5	49.4	48.9	48.4	56.8	10.0	66.8

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	61.4	69.2	51.1	67.9	67.1	65.9	65.2	62.4	59.6	53.6	52.6	51.6
	Max	65.9	74.7	62.5	72.3	71.2	69.4	68.4	66.3	65.2	63.6	63.4	62.9
Energy Average		63.0	Average:		69.5	68.7	67.3	66.5	63.7	61.2	56.7	56.0	55.3
Evening	Min	58.2	67.5	48.3	66.0	65.0	63.5	62.8	59.4	55.3	49.8	49.3	48.7
	Max	60.2	70.2	50.2	68.1	66.8	65.6	64.8	61.3	57.4	51.7	51.1	50.6
Energy Average		59.3	Average:		67.3	66.2	64.8	63.9	60.1	56.3	50.6	50.0	49.4
Night	Min	52.9	63.3	44.2	61.6	60.8	59.4	58.5	52.1	48.1	46.0	45.1	44.6
	Max	61.9	70.6	58.1	69.1	68.3	67.1	66.3	63.3	60.0	59.0	58.8	58.5
Energy Average		59.0	Average:		65.6	64.7	63.3	62.5	58.2	54.8	51.5	50.9	50.4

L_{eq} (dBA)		
24-Hour	Daytime	Nighttime
61.5	62.5	59.0

24-Hour CNEL (dBA)
66.4

24-Hour Noise Level Measurement Summary

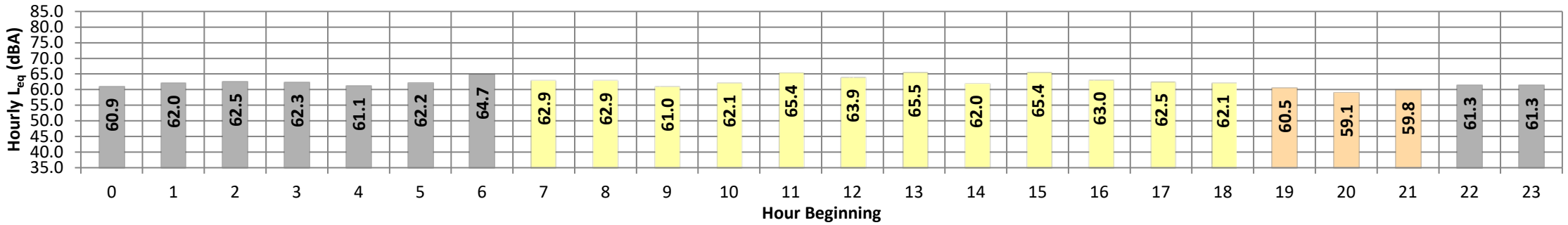
Date: Wednesday, April 29, 2020
Project: Goodman Logistics Center

Location: L5 - Located south of the Project site near existing single family residential homes at 1545 E Benmore Lane.

Meter: Piccolo II

JN: 13158
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	60.9	61.5	60.4	61.4	61.4	61.3	61.2	61.1	60.9	60.6	60.5	60.4	60.9	10.0	70.9
	1	62.0	62.7	61.4	62.6	62.6	62.5	62.4	62.1	61.9	61.6	61.6	61.4	62.0	10.0	72.0
	2	62.5	63.1	62.0	63.0	63.0	62.9	62.8	62.7	62.5	62.2	62.1	62.0	62.5	10.0	72.5
	3	62.3	63.5	61.6	63.3	63.1	62.8	62.7	62.4	62.2	61.9	61.8	61.7	62.3	10.0	72.3
	4	61.1	62.8	60.5	62.7	62.6	62.1	61.7	61.2	61.0	60.7	60.6	60.5	61.1	10.0	71.1
	5	62.2	68.4	60.4	67.9	67.2	65.9	64.5	62.1	61.3	60.7	60.5	60.4	62.2	10.0	72.2
	6	64.7	71.9	61.3	71.5	70.8	69.0	67.6	65.1	63.1	61.6	61.5	61.3	64.7	10.0	74.7
Day	7	62.9	69.4	61.1	68.9	68.3	66.7	65.4	62.6	61.9	61.4	61.3	61.2	62.9	0.0	62.9
	8	62.9	69.3	61.0	68.8	68.0	66.5	65.6	62.8	61.8	61.3	61.2	61.1	62.9	0.0	62.9
	9	61.0	65.3	59.5	64.7	64.2	63.1	62.7	61.3	60.5	59.7	59.6	59.5	61.0	0.0	61.0
	10	62.1	66.0	60.7	65.7	65.3	64.4	63.9	62.4	61.6	61.1	61.0	60.8	62.1	0.0	62.1
	11	65.4	75.0	59.8	74.5	73.7	71.6	69.9	64.5	61.9	60.2	60.1	59.9	65.4	0.0	65.4
	12	63.9	71.8	59.7	71.5	70.9	69.7	68.4	63.5	61.4	60.1	59.9	59.7	63.9	0.0	63.9
	13	65.5	70.3	62.3	70.1	69.8	69.0	68.2	65.9	64.6	63.0	62.7	62.4	65.5	0.0	65.5
	14	62.0	68.6	59.2	68.2	67.6	66.2	65.1	62.1	60.5	59.6	59.5	59.3	62.0	0.0	62.0
	15	65.4	77.5	61.1	75.8	74.3	70.8	67.8	64.0	62.8	61.7	61.5	61.3	65.4	0.0	65.4
	16	63.0	70.6	60.6	69.6	68.6	66.3	65.5	62.9	61.9	61.0	60.9	60.7	63.0	0.0	63.0
	17	62.5	68.6	60.5	67.9	67.1	65.5	64.5	62.4	61.7	61.0	60.8	60.6	62.5	0.0	62.5
	18	62.1	65.3	60.6	64.9	64.6	63.9	63.3	62.3	61.8	61.1	60.9	60.7	62.1	0.0	62.1
Evening	19	60.5	65.1	59.6	64.5	63.9	62.2	61.2	60.5	60.2	59.8	59.8	59.6	60.5	5.0	65.5
	20	59.1	64.6	57.9	64.3	63.6	61.4	60.2	58.8	58.5	58.1	58.1	58.0	59.1	5.0	64.1
	21	59.8	64.0	58.9	63.7	62.9	61.3	60.6	59.8	59.5	59.1	59.1	59.0	59.8	5.0	64.8
Night	22	61.3	62.4	60.7	62.3	62.2	62.0	61.8	61.5	61.3	60.9	60.8	60.7	61.3	10.0	71.3
	23	61.3	66.4	59.9	65.9	65.2	64.2	63.5	60.8	60.5	60.1	60.1	59.9	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	61.0	65.3	59.2	64.7	64.2	63.1	62.7	61.3	60.5	59.6	59.5	59.3
	Max	65.5	77.5	62.3	75.8	74.3	71.6	69.9	65.9	64.6	63.0	62.7	62.4
Energy Average		63.5	Average:		69.2	68.5	67.0	65.8	63.1	61.9	60.9	60.8	60.6
Evening	Min	59.1	64.0	57.9	63.7	62.9	61.3	60.2	58.8	58.5	58.1	58.1	58.0
	Max	60.5	65.1	59.6	64.5	63.9	62.2	61.2	60.5	60.2	59.8	59.8	59.6
Energy Average		59.9	Average:		64.2	63.5	61.6	60.7	59.7	59.4	59.0	59.0	58.9
Night	Min	60.9	61.5	59.9	61.4	61.4	61.3	61.2	60.8	60.5	60.1	60.1	59.9
	Max	64.7	71.9	62.0	71.5	70.8	69.0	67.6	65.1	63.1	62.2	62.1	62.0
Energy Average		62.2	Average:		64.5	64.2	63.6	63.1	62.1	61.7	61.1	61.1	60.9

L_{eq} (dBA)		
24-Hour	Daytime	Nighttime
62.7	63.0	62.2

24-Hour CNEL (dBA)
68.9

24-Hour Noise Level Measurement Summary

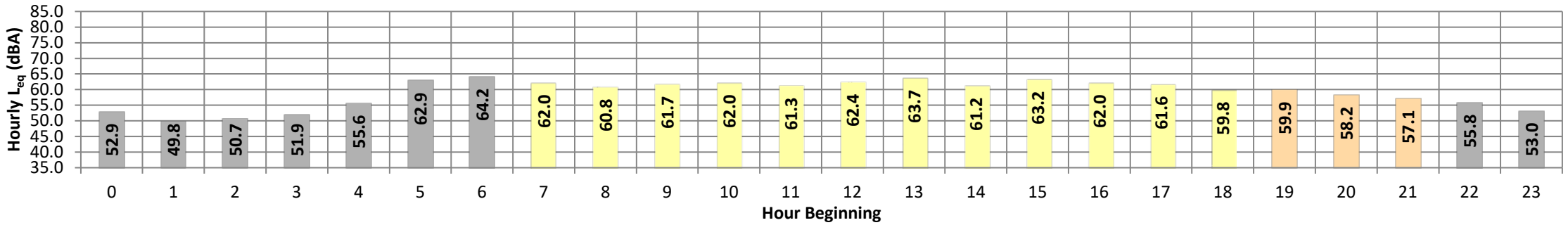
Date: Wednesday, April 29, 2020
Project: Goodman Logistics Center

Location: L6 - Located southwest of the Project site near the New Life Presbytarian Church.

Meter: Piccolo II

JN: 13158
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	52.9	62.3	44.5	62.0	61.7	59.9	58.1	52.1	48.5	45.3	44.9	44.7	52.9	10.0	62.9
	1	49.8	58.4	43.1	58.1	57.7	56.8	55.5	48.9	45.3	43.6	43.4	43.2	49.8	10.0	59.8
	2	50.7	59.5	44.2	59.2	58.8	57.6	55.8	50.0	46.7	44.7	44.5	44.3	50.7	10.0	60.7
	3	51.9	60.3	44.7	59.9	59.5	58.5	57.1	52.1	48.1	45.3	45.1	44.8	51.9	10.0	61.9
	4	55.6	63.8	48.0	63.3	62.8	61.5	60.2	56.1	52.8	48.8	48.4	48.1	55.6	10.0	65.6
	5	62.9	70.2	53.3	69.8	69.4	68.2	67.4	64.0	60.4	54.8	54.1	53.5	62.9	10.0	72.9
	6	64.2	72.4	54.2	72.1	71.7	70.2	68.9	64.6	61.5	56.1	55.2	54.4	64.2	10.0	74.2
Day	7	62.0	68.5	53.2	68.2	67.8	66.8	65.9	63.0	60.5	55.7	54.5	53.3	62.0	0.0	62.0
	8	60.8	67.6	52.4	67.2	66.9	65.8	64.8	61.8	59.1	54.1	53.1	52.5	60.8	0.0	60.8
	9	61.7	70.0	52.4	69.6	69.2	67.7	66.5	62.0	59.3	54.2	53.4	52.6	61.7	0.0	61.7
	10	62.0	70.1	52.7	69.6	69.2	67.8	66.6	62.9	59.1	54.7	53.6	52.9	62.0	0.0	62.0
	11	61.3	70.5	52.7	69.8	69.0	66.9	65.5	61.6	58.7	54.3	53.5	52.8	61.3	0.0	61.3
	12	62.4	70.8	55.2	70.2	69.3	67.4	66.1	63.0	60.5	56.7	56.0	55.4	62.4	0.0	62.4
	13	63.7	72.1	55.6	71.7	71.1	69.6	68.1	64.0	61.1	57.0	56.4	55.8	63.7	0.0	63.7
	14	61.2	69.1	54.4	68.7	68.2	66.9	65.6	61.4	59.0	55.6	55.1	54.6	61.2	0.0	61.2
	15	63.2	71.1	56.6	70.8	70.3	68.6	67.3	63.5	61.2	57.9	57.4	56.8	63.2	0.0	63.2
	16	62.0	69.5	56.0	69.1	68.6	66.8	65.2	62.5	60.6	57.4	56.7	56.1	62.0	0.0	62.0
	17	61.6	69.3	54.7	68.9	68.4	66.9	65.4	62.1	59.8	56.1	55.3	54.8	61.6	0.0	61.6
	18	59.8	67.3	53.0	66.9	66.5	64.8	63.6	60.5	58.2	54.2	53.6	53.1	59.8	0.0	59.8
Evening	19	59.9	68.5	50.7	68.1	67.7	66.8	65.1	59.8	56.6	52.1	51.4	50.8	59.9	5.0	64.9
	20	58.2	67.6	49.1	67.2	66.6	64.5	62.7	58.2	55.1	50.2	49.6	49.2	58.2	5.0	63.2
	21	57.1	65.0	48.8	64.7	64.3	63.1	61.8	57.6	54.3	49.8	49.3	48.9	57.1	5.0	62.1
Night	22	55.8	63.9	48.2	63.6	63.2	61.8	60.3	56.3	52.7	49.0	48.6	48.3	55.8	10.0	65.8
	23	53.0	61.8	45.5	61.1	60.7	59.3	57.6	53.5	49.9	46.4	46.0	45.6	53.0	10.0	63.0

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	59.8	67.3	52.4	66.9	66.5	64.8	63.6	60.5	58.2	54.1	53.1	52.5
	Max	63.7	72.1	56.6	71.7	71.1	69.6	68.1	64.0	61.2	57.9	57.4	56.8
Energy Average		61.9	Average:		69.2	68.7	67.2	65.9	62.3	59.8	55.7	54.9	54.2
Evening	Min	57.1	65.0	48.8	64.7	64.3	63.1	61.8	57.6	54.3	49.8	49.3	48.9
	Max	59.9	68.5	50.7	68.1	67.7	66.8	65.1	59.8	56.6	52.1	51.4	50.8
Energy Average		58.6	Average:		66.6	66.2	64.8	63.2	58.5	55.4	50.7	50.1	49.7
Night	Min	49.8	58.4	43.1	58.1	57.7	56.8	55.5	48.9	45.3	43.6	43.4	43.2
	Max	64.2	72.4	54.2	72.1	71.7	70.2	68.9	64.6	61.5	56.1	55.2	54.4
Energy Average		58.3	Average:		63.2	62.8	61.5	60.1	55.3	51.8	48.2	47.8	47.4

L_{eq} (dBA)		
24-Hour	Daytime	Nighttime
60.5	61.4	58.3

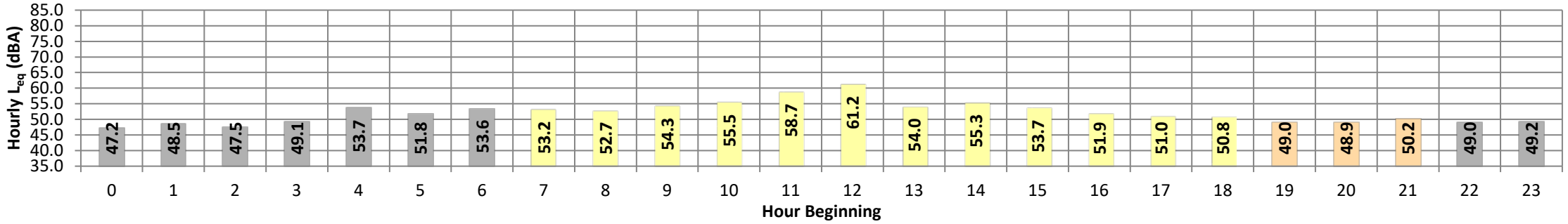
24-Hour CNEL (dBA)
65.5

24-Hour Noise Level Measurement Summary

Date: Wednesday, April 29, 2020 *Location:* L7 - Located east of the Project site near Seekers Chapel. *Meter:* Piccolo I *JN:* 13158

Project: Goodman Logistics Center *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	47.2	65.9	43.1	53.0	51.0	49.0	49.0	47.0	45.0	44.0	44.0	43.0	47.2	10.0	57.2
	1	48.5	61.5	44.6	53.0	52.0	50.0	49.0	48.0	48.0	46.0	46.0	45.0	48.5	10.0	58.5
	2	47.5	61.4	44.4	53.0	52.0	49.0	48.0	47.0	46.0	45.0	45.0	44.0	47.5	10.0	57.5
	3	49.1	69.1	44.6	55.0	52.0	50.0	49.0	48.0	48.0	46.0	45.0	45.0	49.1	10.0	59.1
	4	53.7	82.5	44.7	61.0	57.0	53.0	51.0	48.0	47.0	46.0	46.0	45.0	53.7	10.0	63.7
	5	51.8	72.2	45.9	61.0	59.0	55.0	54.0	50.0	48.0	47.0	47.0	46.0	51.8	10.0	61.8
	6	53.6	74.2	46.1	63.0	61.0	58.0	56.0	52.0	49.0	47.0	47.0	46.0	53.6	10.0	63.6
Day	7	53.2	77.4	45.6	63.0	59.0	55.0	53.0	49.0	48.0	46.0	46.0	46.0	53.2	0.0	53.2
	8	52.7	71.5	46.3	61.0	58.0	55.0	54.0	51.0	50.0	48.0	47.0	46.0	52.7	0.0	52.7
	9	54.3	78.8	47.6	63.0	60.0	57.0	55.0	51.0	50.0	49.0	48.0	48.0	54.3	0.0	54.3
	10	55.5	74.2	48.4	65.0	63.0	61.0	59.0	53.0	51.0	49.0	49.0	49.0	55.5	0.0	55.5
	11	58.7	83.3	49.4	66.0	65.0	64.0	63.0	56.0	52.0	51.0	50.0	50.0	58.7	0.0	58.7
	12	61.2	84.0	48.5	67.0	65.0	65.0	65.0	64.0	53.0	50.0	50.0	49.0	61.2	0.0	61.2
	13	54.0	73.2	49.5	61.0	59.0	57.0	55.0	53.0	52.0	51.0	51.0	50.0	54.0	0.0	54.0
	14	55.3	70.7	50.4	64.0	62.0	59.0	57.0	54.0	53.0	52.0	51.0	51.0	55.3	0.0	55.3
	15	53.7	69.7	47.9	63.0	61.0	57.0	56.0	53.0	51.0	49.0	48.0	48.0	53.7	0.0	53.7
	16	51.9	68.7	47.2	61.0	58.0	54.0	53.0	51.0	50.0	48.0	48.0	47.0	51.9	0.0	51.9
	17	51.0	72.5	46.4	59.0	58.0	54.0	53.0	49.0	48.0	47.0	47.0	47.0	51.0	0.0	51.0
	18	50.8	73.8	45.8	61.0	57.0	55.0	52.0	48.0	47.0	46.0	46.0	46.0	50.8	0.0	50.8
Evening	19	49.0	69.0	45.4	56.0	53.0	50.0	50.0	48.0	47.0	46.0	46.0	45.0	49.0	5.0	54.0
	20	48.9	60.9	46.7	54.0	52.0	50.0	49.0	49.0	48.0	47.0	47.0	47.0	48.9	5.0	53.9
	21	50.2	69.7	46.2	59.0	56.0	51.0	50.0	49.0	48.0	47.0	47.0	46.0	50.2	5.0	55.2
Night	22	49.0	62.7	45.7	56.0	55.0	52.0	51.0	48.0	47.0	46.0	46.0	46.0	49.0	10.0	59.0
	23	49.2	66.5	46.0	55.0	53.0	51.0	50.0	49.0	48.0	47.0	47.0	46.0	49.2	10.0	59.2

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	50.8	68.7	45.6	59.0	57.0	54.0	52.0	48.0	47.0	46.0	46.0	46.0
	Max	61.2	84.0	50.4	67.0	65.0	65.0	65.0	64.0	53.0	52.0	51.0	51.0
Energy Average		55.5	Average:		62.8	60.4	57.8	56.3	52.7	50.4	48.8	48.4	48.1
Evening	Min	48.9	60.9	45.4	54.0	52.0	50.0	49.0	48.0	47.0	46.0	46.0	45.0
	Max	50.2	69.7	46.7	59.0	56.0	51.0	50.0	49.0	48.0	47.0	47.0	47.0
Energy Average		49.4	Average:		56.3	53.7	50.3	49.7	48.7	47.7	46.7	46.7	46.0
Night	Min	47.2	61.4	43.1	53.0	51.0	49.0	48.0	47.0	45.0	44.0	44.0	43.0
	Max	53.7	82.5	46.1	63.0	61.0	58.0	56.0	52.0	49.0	47.0	47.0	46.0
Energy Average		50.6	Average:		56.7	54.7	51.9	50.8	48.6	47.3	46.0	45.9	45.1

L_{eq} (dBA)		
24-Hour	Daytime	Nighttime
53.7	54.8	50.6

24-Hour CNEL (dBA)
58.1

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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 (2020)
Road Name: Raymond Av.
Road Segment: n/o Kimberly Av.
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,031 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	1,730 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	53 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	42.0 feet
Centerline Dist. to Observer:	42.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	32.966
Medium Trucks:	32.696
Heavy Trucks:	32.723

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	0.89	2.61	-1.20	*-4.60*	0.000	0.000
Medium Trucks:	77.72	-15.01	2.66	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-18.27	2.66	-1.20	*-5.53*	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	68.2	66.4	60.3	69.0	69.6
Medium Trucks:	64.2	63.9	57.5	56.0	64.5	64.7
Heavy Trucks:	66.2	66.0	57.0	58.2	66.6	66.7
Vehicle Noise:	71.6	71.1	67.3	63.3	71.8	72.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	56	120	258	555
CNEL:	59	127	274	591

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing (2020)
Road Name: Raymond Av.
Road Segment: s/o Kimberly Av.
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,511 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	1,766 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	53 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	42.0 feet
Centerline Dist. to Observer:	42.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	32.966
Medium Trucks:	32.696
Heavy Trucks:	32.723

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	0.98	2.61	-1.20	*-4.60*	0.000	0.000
Medium Trucks:	77.72	-14.92	2.66	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-18.18	2.66	-1.20	*-5.53*	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:	68.9	68.2	66.5	60.4	69.0	69.7
Medium Trucks:	64.3	64.0	57.6	56.1	64.5	64.8
Heavy Trucks:	66.3	66.1	57.1	58.3	66.7	66.8
Vehicle Noise:	71.7	71.2	67.4	63.4	71.9	72.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	56	121	261	563
CNEL:	60	129	278	599

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing (2020)
Road Name: Raymond Av.
Road Segment: s/o Orangethorpe Av.
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,674 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,229 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	53 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	42.0 feet
Centerline Dist. to Observer:	42.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	32.966
Medium Trucks:	32.696
Heavy Trucks:	32.723

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	1.99	2.61	-1.20	*-4.60*	0.000	0.000
Medium Trucks:	77.72	-13.91	2.66	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-17.16	2.66	-1.20	*-5.53*	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:	69.9	69.3	67.5	61.4	70.1	70.7
Medium Trucks:	65.3	65.0	58.6	57.1	65.6	65.8
Heavy Trucks:	67.3	67.1	58.1	59.3	67.7	67.8
Vehicle Noise:	72.7	72.2	68.4	64.4	72.9	73.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	66	142	305	658
CNEL:	70	151	325	699

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing (2020)
Road Name: Raymond Av.
Road Segment: s/o SR-91 Westbound Ramps
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,583 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,147 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	45 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	45.0 feet
Centerline Dist. to Observer:	45.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	39.291
Medium Trucks:	39.065
Heavy Trucks:	39.087

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	0.86	1.47	-1.20	*-4.62*	0.000	0.000
Medium Trucks:	81.00	-15.04	1.50	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-18.30	1.50	-1.20	*-5.49*	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:	71.3	70.7	68.9	62.9	71.5	72.1
Medium Trucks:	66.3	66.0	59.6	58.1	66.6	66.8
Heavy Trucks:	67.4	67.2	58.2	59.4	67.8	67.9
Vehicle Noise:	73.7	73.2	69.7	65.4	73.9	74.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	82	176	380	819
CNEL:	87	188	406	875

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing (2020) | Project Name: Goodman Logistics Center
Road Name: Raymond Av. | Job Number: 13158
Road Segment: s/o SR-91 Eastbound Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,102 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,186 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	45 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	45.0 feet
Centerline Dist. to Observer:	45.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	39.291
Medium Trucks:	39.065
Heavy Trucks:	39.087

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.94	1.47	-1.20	-4.62	0.000	0.000
Medium Trucks:	81.00	-14.96	1.50	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-18.22	1.50	-1.20	-5.49	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:	71.4	70.8	69.0	62.9	71.6	72.2
Medium Trucks:	66.3	66.1	59.7	58.2	66.6	66.9
Heavy Trucks:	67.5	67.3	58.2	59.5	67.8	68.0
Vehicle Noise:	73.8	73.3	69.8	65.5	74.0	74.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	179	385	829
CNEL:	89	191	411	885

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing (2020) | Project Name: Goodman Logistics Center
Road Name: Acacia Av. | Job Number: 13158
Road Segment: n/o Kimberly Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,815 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	587 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	45 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	40.0 feet
Centerline Dist. to Observer:	40.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	33.448
Medium Trucks:	33.182
Heavy Trucks:	33.208

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.80	2.52	-1.20	-4.59	0.000	0.000
Medium Trucks:	77.72	-19.70	2.57	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-22.96	2.56	-1.20	-5.56	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:	64.0	63.4	61.6	55.5	64.2	64.8
Medium Trucks:	59.4	59.1	52.8	51.2	59.7	59.9
Heavy Trucks:	61.4	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	66.8	66.3	62.6	58.5	67.0	67.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	55	118	254
CNEL:	27	58	125	270

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing (2020) | Project Name: Goodman Logistics Center
Road Name: Acacia Av. | Job Number: 13158
Road Segment: s/o Kimberly Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,548 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	567 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	45 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	40.0 feet
Centerline Dist. to Observer:	40.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	33.448
Medium Trucks:	33.182
Heavy Trucks:	33.208

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.95	2.52	-1.20	-4.59	0.000	0.000
Medium Trucks:	77.72	-19.85	2.57	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-23.11	2.56	-1.20	-5.56	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:	63.9	63.2	61.5	55.4	64.0	64.6
Medium Trucks:	59.2	59.0	52.6	51.1	59.5	59.8
Heavy Trucks:	61.2	61.1	52.0	53.3	61.6	61.8
Vehicle Noise:	66.6	66.2	62.4	58.4	66.9	67.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	53	115	248
CNEL:	26	57	122	263

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing (2020) | Project Name: Goodman Logistics Center
Road Name: N. State College Bl. | Job Number: 13158
Road Segment: n/o Chapman Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	36,863 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,769 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.94	4.61	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-12.97	4.70	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-16.22	4.69	-1.20	-5.43	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:	72.9	72.2	70.4	64.4	73.0	73.6
Medium Trucks:	68.3	68.0	61.6	60.1	68.5	68.8
Heavy Trucks:	70.3	70.1	61.1	62.3	70.7	70.8
Vehicle Noise:	75.6	75.2	71.4	67.4	75.9	76.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	123	266	572	1,233
CNEL:	131	282	608	1,311

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing (2020)
Road Name: N. State College Bl.
Road Segment: s/o Chapman Av.
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,624 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	1,925 vehicles
Vehicle Speed:	35 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	64.30	1.94	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	75.75	-13.97	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	81.57	-17.22	4.69	-1.20	*-5.43*	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	69.0	67.2	61.2	69.8	70.4
Medium Trucks:	65.3	65.0	58.7	57.1	65.6	65.8
Heavy Trucks:	67.8	67.7	58.6	59.9	68.2	68.4
Vehicle Noise:	72.7	72.3	68.3	64.5	73.0	73.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	79	170	366	788
CNEL:	84	180	388	836

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing (2020)
Road Name: N. State College Bl.
Road Segment: s/o Commonwealth Av.
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,284 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	1,749 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	0.94	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	77.72	-14.96	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-18.22	4.69	-1.20	*-5.43*	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:	70.9	70.2	68.4	62.4	71.0	71.6
Medium Trucks:	66.3	66.0	59.6	58.1	66.5	66.8
Heavy Trucks:	68.3	68.1	59.1	60.3	68.7	68.8
Vehicle Noise:	73.6	73.2	69.4	65.4	73.9	74.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	91	196	421	908
CNEL:	96	208	448	965

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing (2020)
Road Name: N. State College Bl.
Road Segment: s/o Kimberly Av.
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,058 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	1,732 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	0.90	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	77.72	-15.00	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-18.26	4.69	-1.20	*-5.43*	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:	70.8	70.2	68.4	62.3	71.0	71.6
Medium Trucks:	66.2	65.9	59.6	58.0	66.5	66.7
Heavy Trucks:	68.2	68.0	59.0	60.3	68.6	68.7
Vehicle Noise:	73.6	73.2	69.4	65.3	73.8	74.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	90	194	419	902
CNEL:	96	207	445	959

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing (2020)
Road Name: N. State College Bl.
Road Segment: s/o Dwy. 16
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,244 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	1,746 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	0.93	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	77.72	-14.97	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-18.23	4.69	-1.20	*-5.43*	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:	70.9	70.2	68.4	62.4	71.0	71.6
Medium Trucks:	66.3	66.0	59.6	58.1	66.5	66.8
Heavy Trucks:	68.3	68.1	59.0	60.3	68.7	68.8
Vehicle Noise:	73.6	73.2	69.4	65.4	73.9	74.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	91	195	421	907
CNEL:	96	208	447	964

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing (2020)
Road Name: N. State College Bl.
Road Segment: s/o Orangethorpe Av.
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,451 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,062 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	1.66	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	77.72	-14.25	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-17.50	4.69	-1.20	*-5.43*	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:	71.6	70.9	69.2	63.1	71.7	72.3
Medium Trucks:	67.0	66.7	60.3	58.8	67.3	67.5
Heavy Trucks:	69.0	68.8	59.8	61.0	69.4	69.5
Vehicle Noise:	74.4	73.9	70.1	66.1	74.6	75.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	101	218	470	1,013
CNEL:	108	232	500	1,077

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing (2020)
Road Name: N. State College Bl.
Road Segment: s/o SR-91 Westbound Ramps
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,945 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,024 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	78 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	53.0 feet
Centerline Dist. to Observer:	53.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	36.235
Medium Trucks:	35.990
Heavy Trucks:	36.014

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	0.19	1.99	-1.20	*-4.66*	0.000	0.000
Medium Trucks:	82.40	-15.71	2.04	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	86.40	-18.97	2.03	-1.20	*-5.40*	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:	72.8	72.1	70.3	64.3	72.9	73.5
Medium Trucks:	67.5	67.3	60.9	59.4	67.8	68.1
Heavy Trucks:	68.3	68.1	59.0	60.3	68.7	68.8
Vehicle Noise:	75.0	74.5	71.1	66.6	75.2	75.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	117	253	545	1,173
CNEL:	125	270	582	1,255

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing (2020)
Road Name: N. State College Bl.
Road Segment: s/o SR-91 Eastbound Ramps
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,525 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	1,692 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	78 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	53.0 feet
Centerline Dist. to Observer:	53.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	36.235
Medium Trucks:	35.990
Heavy Trucks:	36.014

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-0.59	1.99	-1.20	*-4.66*	0.000	0.000
Medium Trucks:	82.40	-16.49	2.04	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	86.40	-19.74	2.03	-1.20	*-5.40*	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:	72.0	71.3	69.6	63.5	72.1	72.7
Medium Trucks:	66.8	66.5	60.1	58.6	67.0	67.3
Heavy Trucks:	67.5	67.3	58.3	59.5	67.9	68.0
Vehicle Noise:	74.2	73.7	70.3	65.9	74.4	74.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	104	224	483	1,041
CNEL:	111	240	517	1,113

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing (2020)
Road Name: S. Placentia Av.
Road Segment: n/o Kimberly Av.
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,981 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	1,576 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	53 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	42.0 feet
Centerline Dist. to Observer:	42.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	32.966
Medium Trucks:	32.696
Heavy Trucks:	32.723

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	0.49	2.61	-1.20	*-4.60*	0.000	0.000
Medium Trucks:	77.72	-15.41	2.66	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-18.67	2.66	-1.20	*-5.53*	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:	68.4	67.8	66.0	59.9	68.6	69.2
Medium Trucks:	63.8	63.5	57.1	55.6	64.1	64.3
Heavy Trucks:	65.8	65.6	56.6	57.8	66.2	66.3
Vehicle Noise:	71.2	70.7	66.9	62.9	71.4	71.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	52	112	242	522
CNEL:	56	120	258	555

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing (2020)
Road Name: S. Placentia Av.
Road Segment: s/o Kimberly Av.
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,848 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	1,566 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	53 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	42.0 feet
Centerline Dist. to Observer:	42.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	32.966
Medium Trucks:	32.696
Heavy Trucks:	32.723

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	0.46	2.61	-1.20	*-4.60*	0.000	0.000
Medium Trucks:	77.72	-15.44	2.66	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-18.70	2.66	-1.20	*-5.53*	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:	68.4	67.7	66.0	59.9	68.5	69.1
Medium Trucks:	63.7	63.5	57.1	55.6	64.0	64.3
Heavy Trucks:	65.8	65.6	56.5	57.8	66.1	66.3
Vehicle Noise:	71.1	70.7	66.9	62.9	71.4	71.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	52	112	241	520
CNEL:	55	119	257	553

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing (2020)
Road Name: Kimberly Av.
Road Segment: e/o Raymond Av.
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,890 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	142 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	25 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	30.0 feet
Centerline Dist. to Observer:	30.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	27.726
Medium Trucks:	27.405
Heavy Trucks:	27.437

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-10.48	3.74	-1.20	*-4.49*	0.000	0.000
Medium Trucks:	79.45	-26.38	3.81	-1.20	*-4.86*	0.000	0.000
Heavy Trucks:	84.25	-29.63	3.81	-1.20	*-5.77*	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:	60.5	59.9	58.1	52.0	60.7	61.3
Medium Trucks:	55.7	55.4	49.1	47.5	56.0	56.2
Heavy Trucks:	57.2	57.0	48.0	49.3	57.6	57.7
Vehicle Noise:	63.1	62.6	59.0	54.8	63.3	63.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	11	23	50	107
CNEL:	11	25	53	114

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing (2020)
Road Name: Kimberly Av.
Road Segment: e/o Dwy. 5
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,917 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	144 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	25 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	30.0 feet
Centerline Dist. to Observer:	30.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	27.726
Medium Trucks:	27.405
Heavy Trucks:	27.437

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-10.41	3.74	-1.20	*-4.49*	0.000	0.000
Medium Trucks:	79.45	-26.32	3.81	-1.20	*-4.86*	0.000	0.000
Heavy Trucks:	84.25	-29.57	3.81	-1.20	*-5.77*	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:	60.6	59.9	58.2	52.1	60.7	61.3
Medium Trucks:	55.7	55.5	49.1	47.6	56.0	56.3
Heavy Trucks:	57.3	57.1	48.1	49.3	57.7	57.8
Vehicle Noise:	63.1	62.7	59.0	54.8	63.4	63.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	11	23	50	108
CNEL:	12	25	54	115

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing (2020)
Road Name: Kimberly Av.
Road Segment: e/o Dwy. 11
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,837 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	138 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	25 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	30.0 feet
Centerline Dist. to Observer:	30.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	27.726
Medium Trucks:	27.405
Heavy Trucks:	27.437

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-10.60	3.74	-1.20	*-4.49*	0.000	0.000
Medium Trucks:	79.45	-26.50	3.81	-1.20	*-4.86*	0.000	0.000
Heavy Trucks:	84.25	-29.76	3.81	-1.20	*-5.77*	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:	60.4	59.7	58.0	51.9	60.5	61.1
Medium Trucks:	55.6	55.3	48.9	47.4	55.8	56.1
Heavy Trucks:	57.1	56.9	47.9	49.1	57.5	57.6
Vehicle Noise:	62.9	62.5	58.8	54.7	63.2	63.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	11	23	49	105
CNEL:	11	24	52	112

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing (2020)
Road Name: Orangethorpe Av.
Road Segment: w/o Raymond Av.
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,347 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,580 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.63	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	77.72	-13.27	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-16.53	4.69	-1.20	*-5.43*	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:	72.5	71.9	70.1	64.1	72.7	73.3
Medium Trucks:	67.9	67.7	61.3	59.8	68.2	68.5
Heavy Trucks:	70.0	69.8	60.7	62.0	70.3	70.5
Vehicle Noise:	75.3	74.9	71.1	67.1	75.6	76.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	118	253	546	1,176
CNEL:	125	269	580	1,250

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing (2020)
Road Name: Orangethorpe Av.
Road Segment: e/o Raymond Av.
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,976 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,477 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.94	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	79.45	-13.96	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-17.22	4.69	-1.20	*-5.43*	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	73.2	71.4	65.3	74.0	74.6
Medium Trucks:	69.0	68.7	62.4	60.8	69.3	69.5
Heavy Trucks:	70.5	70.4	61.3	62.6	70.9	71.0
Vehicle Noise:	76.4	75.9	72.3	68.1	76.6	77.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	138	297	639	1,376
CNEL:	147	316	681	1,466

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing (2020)
Road Name: Orangethorpe Av.
Road Segment: e/o Acacia Av.
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,284 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,425 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.85	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	79.45	-14.05	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-17.31	4.69	-1.20	*-5.43*	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:	73.7	73.1	71.3	65.2	73.9	74.5
Medium Trucks:	68.9	68.6	62.3	60.7	69.2	69.4
Heavy Trucks:	70.4	70.3	61.2	62.5	70.8	71.0
Vehicle Noise:	76.3	75.8	72.2	68.0	76.5	76.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	136	292	630	1,357
CNEL:	145	311	671	1,446

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing (2020)
Road Name: Orangethorpe Av.
Road Segment: e/o Dwy. 6
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,284 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,425 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.85	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	79.45	-14.05	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-17.31	4.69	-1.20	*-5.43*	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:	73.7	73.1	71.3	65.2	73.9	74.5
Medium Trucks:	68.9	68.6	62.3	60.7	69.2	69.4
Heavy Trucks:	70.4	70.3	61.2	62.5	70.8	71.0
Vehicle Noise:	76.3	75.8	72.2	68.0	76.5	76.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	136	292	630	1,357
CNEL:	145	311	671	1,446

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing (2020)
Road Name: Orangethorpe Av.
Road Segment: e/o Dwy. 10

Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,018 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,405 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.81	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	79.45	-14.09	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-17.35	4.69	-1.20	*-5.43*	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:	73.7	73.0	71.3	65.2	73.8	74.4
Medium Trucks:	68.9	68.6	62.2	60.7	69.2	69.4
Heavy Trucks:	70.4	70.2	61.2	62.4	70.8	70.9
Vehicle Noise:	76.2	75.8	72.1	67.9	76.5	76.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	135	291	626	1,350
CNEL:	144	310	667	1,438

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing (2020)
Road Name: Orangethorpe Av.
Road Segment: w/o N. State College Bl.

Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,018 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,405 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.81	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	79.45	-14.09	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-17.35	4.69	-1.20	*-5.43*	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:	73.7	73.0	71.3	65.2	73.8	74.4
Medium Trucks:	68.9	68.6	62.2	60.7	69.2	69.4
Heavy Trucks:	70.4	70.2	61.2	62.4	70.8	70.9
Vehicle Noise:	76.2	75.8	72.1	67.9	76.5	76.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	135	291	626	1,350
CNEL:	144	310	667	1,438

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing (2020)
Road Name: Orangethorpe Av.
Road Segment: e/o N. State College Bl.

Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,006 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,329 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.67	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	79.45	-14.23	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-17.49	4.69	-1.20	*-5.43*	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:	73.5	72.9	71.1	65.1	73.7	74.3
Medium Trucks:	68.7	68.5	62.1	60.6	69.0	69.2
Heavy Trucks:	70.3	70.1	61.0	62.3	70.7	70.8
Vehicle Noise:	76.1	75.6	72.0	67.8	76.3	76.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	132	285	613	1,321
CNEL:	141	303	653	1,407

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing (2020)
Road Name: Orangethorpe Av.
Road Segment: w/o S. Placentia Av.

Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,568 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,221 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.47	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	79.45	-14.44	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-17.69	4.69	-1.20	*-5.43*	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:	73.3	72.7	70.9	64.9	73.5	74.1
Medium Trucks:	68.5	68.3	61.9	60.3	68.8	69.0
Heavy Trucks:	70.1	69.9	60.8	62.1	70.4	70.6
Vehicle Noise:	75.9	75.4	71.8	67.6	76.1	76.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	128	276	594	1,280
CNEL:	136	294	633	1,363

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing (2020) | Project Name: Goodman Logistics Center
Road Name: Orangethorpe Av. | Job Number: 13158
Road Segment: e/o S. Placentia Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,698 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,381 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	98 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	34.986
Medium Trucks:	34.732
Heavy Trucks:	34.757

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.77	2.22	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-14.13	2.27	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-17.39	2.27	-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:	71.3	70.6	68.8	62.8	71.4	72.0
Medium Trucks:	66.4	66.1	59.8	58.2	66.7	66.9
Heavy Trucks:	67.9	67.7	58.7	60.0	68.3	68.4
Vehicle Noise:	73.8	73.3	69.7	65.5	74.0	74.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	111	240	516	1,112
CNEL:	118	255	550	1,185

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing (2020) | Project Name: Goodman Logistics Center
Road Name: Orangethorpe Av. | Job Number: 13158
Road Segment: e/o SR-57 Southbound Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,266 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,649 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	98 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	34.986
Medium Trucks:	34.732
Heavy Trucks:	34.757

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.23	2.22	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-13.67	2.27	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-16.93	2.27	-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	71.1	69.3	63.2	71.9	72.5
Medium Trucks:	66.8	66.6	60.2	58.7	67.1	67.4
Heavy Trucks:	68.4	68.2	59.2	60.4	68.8	68.9
Vehicle Noise:	74.2	73.8	70.2	66.0	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:	127	274	591	1,272

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing (2020) | Project Name: Goodman Logistics Center
Road Name: Orangethorpe Av. | Job Number: 13158
Road Segment: e/o SR-57 Northbound Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,050 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,783 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	98 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	34.986
Medium Trucks:	34.732
Heavy Trucks:	34.757

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.45	2.22	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-13.46	2.27	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-16.71	2.27	-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:	71.9	71.3	69.5	63.5	72.1	72.7
Medium Trucks:	67.1	66.8	60.4	58.9	67.4	67.6
Heavy Trucks:	68.6	68.4	59.4	60.6	69.0	69.1
Vehicle Noise:	74.5	74.0	70.4	66.2	74.7	75.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	123	266	573	1,234
CNEL:	131	283	610	1,315

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project | Project Name: Goodman Logistics Center
Road Name: Raymond Av. | Job Number: 13158
Road Segment: n/o Kimberly Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,157 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	1,740 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	53 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	42.0 feet
Centerline Dist. to Observer:	42.0 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%	96.38%
Medium Trucks:	84.8%	4.9%	10.3%	2.46%
Heavy Trucks:	86.5%	2.7%	10.8%	1.16%

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:	32.966
Medium Trucks:	32.696
Heavy Trucks:	32.723

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.92	2.61	-1.20	-4.60	0.000	0.000
Medium Trucks:	77.72	-15.01	2.66	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-18.27	2.66	-1.20	-5.53	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	68.2	66.4	60.4	69.0	69.6
Medium Trucks:	64.2	63.9	57.5	56.0	64.5	64.7
Heavy Trucks:	66.2	66.0	57.0	58.2	66.6	66.7
Vehicle Noise:	71.6	71.1	67.4	63.3	71.8	72.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	120	258	557
CNEL:	59	128	275	592

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Raymond Av.
Road Segment: s/o Kimberly Av.
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,636 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	1,776 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	53 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	42.0 feet
Centerline Dist. to Observer:	42.0 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%	96.38%
Medium Trucks:	84.8%	4.9%	10.3%	2.46%
Heavy Trucks:	86.5%	2.7%	10.8%	1.16%

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:	32.966
Medium Trucks:	32.696
Heavy Trucks:	32.723

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	1.01	2.61	-1.20	*-4.60*	0.000	0.000
Medium Trucks:	77.72	-14.92	2.66	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-18.18	2.66	-1.20	*-5.53*	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:	68.9	68.3	66.5	60.5	69.1	69.7
Medium Trucks:	64.3	64.0	57.6	56.1	64.5	64.8
Heavy Trucks:	66.3	66.1	57.1	58.3	66.7	66.8
Vehicle Noise:	71.7	71.2	67.5	63.4	71.9	72.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	56	122	262	564
CNEL:	60	129	278	600

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Raymond Av.
Road Segment: s/o Orangethorpe Av.
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,971 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,251 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	53 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	42.0 feet
Centerline Dist. to Observer:	42.0 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%	96.24%
Medium Trucks:	84.8%	4.9%	10.3%	2.52%
Heavy Trucks:	86.5%	2.7%	10.8%	1.24%

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:	32.966
Medium Trucks:	32.696
Heavy Trucks:	32.723

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	2.03	2.61	-1.20	*-4.60*	0.000	0.000
Medium Trucks:	77.72	-13.79	2.66	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-16.86	2.66	-1.20	*-5.53*	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	69.3	67.5	61.5	70.1	70.7
Medium Trucks:	65.4	65.1	58.8	57.2	65.7	65.9
Heavy Trucks:	67.6	67.4	58.4	59.6	68.0	68.1
Vehicle Noise:	72.8	72.4	68.5	64.5	73.1	73.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	67	145	312	671
CNEL:	71	154	331	713

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Raymond Av.
Road Segment: s/o SR-91 Westbound Ramps
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,709 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,157 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	45 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	45.0 feet
Centerline Dist. to Observer:	45.0 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%	96.37%
Medium Trucks:	84.8%	4.9%	10.3%	2.46%
Heavy Trucks:	86.5%	2.7%	10.8%	1.16%

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:	39.291
Medium Trucks:	39.065
Heavy Trucks:	39.087

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	0.88	1.47	-1.20	*-4.62*	0.000	0.000
Medium Trucks:	81.00	-15.04	1.50	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-18.30	1.50	-1.20	*-5.49*	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:	71.4	70.7	68.9	62.9	71.5	72.1
Medium Trucks:	66.3	66.0	59.6	58.1	66.6	66.8
Heavy Trucks:	67.4	67.2	58.2	59.4	67.8	67.9
Vehicle Noise:	73.7	73.2	69.7	65.4	73.9	74.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	82	177	381	821
CNEL:	88	189	407	876

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Raymond Av.
Road Segment: s/o SR-91 Eastbound Ramps
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,228 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,196 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	45 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	45.0 feet
Centerline Dist. to Observer:	45.0 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%	96.37%
Medium Trucks:	84.8%	4.9%	10.3%	2.46%
Heavy Trucks:	86.5%	2.7%	10.8%	1.16%

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:	39.291
Medium Trucks:	39.065
Heavy Trucks:	39.087

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	0.96	1.47	-1.20	*-4.62*	0.000	0.000
Medium Trucks:	81.00	-14.96	1.50	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-18.22	1.50	-1.20	*-5.49*	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:	71.4	70.8	69.0	63.0	71.6	72.2
Medium Trucks:	66.3	66.1	59.7	58.2	66.6	66.9
Heavy Trucks:	67.5	67.3	58.2	59.5	67.8	68.0
Vehicle Noise:	73.8	73.3	69.8	65.5	74.0	74.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	83	179	385	831
CNEL:	89	191	412	887

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Acacia Av.
Road Segment: n/o Kimberly Av.
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,941 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	596 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	45 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	40.0 feet
Centerline Dist. to Observer:	40.0 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%	96.41%
Medium Trucks:	84.8%	4.9%	10.3%	2.44%
Heavy Trucks:	86.5%	2.7%	10.8%	1.15%

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:	33.448
Medium Trucks:	33.182
Heavy Trucks:	33.208

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-3.73	2.52	-1.20	*-4.59*	0.000	0.000
Medium Trucks:	77.72	-19.70	2.57	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-22.96	2.56	-1.20	*-5.56*	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	63.4	61.7	55.6	64.2	64.8
Medium Trucks:	59.4	59.1	52.8	51.2	59.7	59.9
Heavy Trucks:	61.4	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	66.8	66.4	62.6	58.6	67.1	67.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	26	55	118	255
CNEL:	27	58	126	271

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Acacia Av.
Road Segment: s/o Kimberly Av.
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,926 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	595 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	45 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	40.0 feet
Centerline Dist. to Observer:	40.0 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%	96.53%
Medium Trucks:	84.8%	4.9%	10.3%	2.36%
Heavy Trucks:	86.5%	2.7%	10.8%	1.11%

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:	33.448
Medium Trucks:	33.182
Heavy Trucks:	33.208

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-3.73	2.52	-1.20	*-4.59*	0.000	0.000
Medium Trucks:	77.72	-19.85	2.57	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-23.11	2.56	-1.20	*-5.56*	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	63.4	61.7	55.6	64.2	64.8
Medium Trucks:	59.2	59.0	52.6	51.1	59.5	59.8
Heavy Trucks:	61.2	61.1	52.0	53.3	61.6	61.8
Vehicle Noise:	66.8	66.3	62.6	58.5	67.0	67.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	25	54	117	252
CNEL:	27	58	125	268

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: N. State College Bl.
Road Segment: n/o Chapman Av.
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,160 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,791 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.26%
Medium Trucks:	84.8%	4.9%	10.3%	2.51%
Heavy Trucks:	86.5%	2.7%	10.8%	1.23%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	2.97	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	77.72	-12.87	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-15.98	4.69	-1.20	*-5.43*	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:	72.9	72.2	70.5	64.4	73.0	73.6
Medium Trucks:	68.3	68.1	61.7	60.2	68.6	68.9
Heavy Trucks:	70.5	70.3	61.3	62.5	70.9	71.0
Vehicle Noise:	75.7	75.3	71.4	67.5	76.0	76.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	125	270	582	1,254
CNEL:	133	287	618	1,332

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: N. State College Bl.
Road Segment: s/o Chapman Av.
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,921 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	1,947 vehicles
Vehicle Speed:	35 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.22%
Medium Trucks:	84.8%	4.9%	10.3%	2.52%
Heavy Trucks:	86.5%	2.7%	10.8%	1.25%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	64.30	1.98	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	75.75	-13.83	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	81.57	-16.87	4.69	-1.20	*-5.43*	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:	69.7	69.0	67.3	61.2	69.8	70.4
Medium Trucks:	65.4	65.2	58.8	57.3	65.7	65.9
Heavy Trucks:	68.2	68.0	59.0	60.2	68.6	68.7
Vehicle Noise:	72.9	72.5	68.4	64.6	73.1	73.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	81	174	375	808
CNEL:	86	184	397	856

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: N. State College Bl.
Road Segment: s/o Commonwealth Av.
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,581 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	1,771 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.21%
Medium Trucks:	84.8%	4.9%	10.3%	2.53%
Heavy Trucks:	86.5%	2.7%	10.8%	1.26%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	0.99	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	77.72	-14.81	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-17.84	4.69	-1.20	*-5.43*	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:	70.9	70.3	68.5	62.4	71.1	71.7
Medium Trucks:	66.4	66.1	59.8	58.2	66.7	66.9
Heavy Trucks:	68.7	68.5	59.4	60.7	69.0	69.2
Vehicle Noise:	73.8	73.4	69.5	65.5	74.1	74.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	93	201	432	932
CNEL:	99	213	459	989

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: N. State College Bl.
Road Segment: s/o Kimberly Av.
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,084 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	1,809 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	94.97%
Medium Trucks:	84.8%	4.9%	10.3%	3.06%
Heavy Trucks:	86.5%	2.7%	10.8%	1.97%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	1.02	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	77.72	-13.90	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-15.80	4.69	-1.20	*-5.43*	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:	70.9	70.3	68.5	62.5	71.1	71.7
Medium Trucks:	67.3	67.1	60.7	59.2	67.6	67.8
Heavy Trucks:	70.7	70.5	61.5	62.7	71.1	71.2
Vehicle Noise:	74.7	74.3	69.9	66.5	75.0	75.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	107	231	498	1,073
CNEL:	113	244	525	1,131

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: N. State College Bl.
Road Segment: s/o Dwy. 16
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,373 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	1,831 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	94.89%
Medium Trucks:	84.8%	4.9%	10.3%	3.09%
Heavy Trucks:	86.5%	2.7%	10.8%	2.02%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	1.07	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	77.72	-13.80	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-15.65	4.69	-1.20	*-5.43*	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:	71.0	70.3	68.6	62.5	71.1	71.7
Medium Trucks:	67.4	67.2	60.8	59.2	67.7	67.9
Heavy Trucks:	70.8	70.7	61.6	62.9	71.2	71.4
Vehicle Noise:	74.8	74.4	69.9	66.6	75.1	75.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	109	235	506	1,089
CNEL:	115	247	533	1,149

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: N. State College Bl.
Road Segment: s/o Orangethorpe Av.
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,704 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,156 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	94.78%
Medium Trucks:	84.8%	4.9%	10.3%	3.14%
Heavy Trucks:	86.5%	2.7%	10.8%	2.08%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	1.78	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	77.72	-13.02	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-14.82	4.69	-1.20	*-5.43*	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	71.0	69.3	63.2	71.8	72.4
Medium Trucks:	68.2	67.9	61.6	60.0	68.5	68.7
Heavy Trucks:	71.7	71.5	62.5	63.7	72.1	72.2
Vehicle Noise:	75.6	75.2	70.7	67.4	75.8	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	123	264	569	1,226
CNEL:	129	278	600	1,293

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: N. State College Bl.
Road Segment: s/o SR-91 Westbound Ramps
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,585 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,072 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	78 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	53.0 feet
Centerline Dist. to Observer:	53.0 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%	95.95%
Medium Trucks:	84.8%	4.9%	10.3%	2.64%
Heavy Trucks:	86.5%	2.7%	10.8%	1.41%

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:	36.235
Medium Trucks:	35.990
Heavy Trucks:	36.014

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.28	1.99	-1.20	-4.66	0.000	0.000
Medium Trucks:	82.40	-15.33	2.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	86.40	-18.04	2.03	-1.20	-5.40	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:	72.9	72.2	70.4	64.4	73.0	73.6
Medium Trucks:	67.9	67.6	61.3	59.7	68.2	68.4
Heavy Trucks:	69.2	69.0	60.0	61.2	69.6	69.7
Vehicle Noise:	75.3	74.8	71.3	67.0	75.5	75.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	124	266	574	1,236
CNEL:	132	284	612	1,318

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: N. State College Bl.
Road Segment: s/o SR-91 Eastbound Ramps
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,651 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	1,702 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	78 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	53.0 feet
Centerline Dist. to Observer:	53.0 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%	96.38%
Medium Trucks:	84.8%	4.9%	10.3%	2.46%
Heavy Trucks:	86.5%	2.7%	10.8%	1.16%

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:	36.235
Medium Trucks:	35.990
Heavy Trucks:	36.014

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.56	1.99	-1.20	-4.66	0.000	0.000
Medium Trucks:	82.40	-16.49	2.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	86.40	-19.74	2.03	-1.20	-5.40	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:	72.0	71.4	69.6	63.5	72.2	72.8
Medium Trucks:	66.8	66.5	60.1	58.6	67.0	67.3
Heavy Trucks:	67.5	67.3	58.3	59.5	67.9	68.0
Vehicle Noise:	74.2	73.7	70.3	65.9	74.4	74.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	104	225	484	1,044
CNEL:	112	240	518	1,116

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: S. Placentia Av.
Road Segment: n/o Kimberly Av.
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,107 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	1,586 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	53 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	42.0 feet
Centerline Dist. to Observer:	42.0 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%	96.38%
Medium Trucks:	84.8%	4.9%	10.3%	2.46%
Heavy Trucks:	86.5%	2.7%	10.8%	1.16%

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:	32.966
Medium Trucks:	32.696
Heavy Trucks:	32.723

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.52	2.61	-1.20	-4.60	0.000	0.000
Medium Trucks:	77.72	-15.41	2.66	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-18.67	2.66	-1.20	-5.53	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:	68.4	67.8	66.0	60.0	68.6	69.2
Medium Trucks:	63.8	63.5	57.1	55.6	64.1	64.3
Heavy Trucks:	65.8	65.6	56.6	57.8	66.2	66.3
Vehicle Noise:	71.2	70.7	67.0	62.9	71.4	71.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	113	243	523
CNEL:	56	120	258	556

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: S. Placentia Av.
Road Segment: s/o Kimberly Av.
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,974 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	1,576 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	53 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	42.0 feet
Centerline Dist. to Observer:	42.0 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%	96.38%
Medium Trucks:	84.8%	4.9%	10.3%	2.46%
Heavy Trucks:	86.5%	2.7%	10.8%	1.16%

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:	32.966
Medium Trucks:	32.696
Heavy Trucks:	32.723

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.49	2.61	-1.20	-4.60	0.000	0.000
Medium Trucks:	77.72	-15.44	2.66	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-18.70	2.66	-1.20	-5.53	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:	68.4	67.8	66.0	59.9	68.6	69.2
Medium Trucks:	63.7	63.5	57.1	55.6	64.0	64.3
Heavy Trucks:	65.8	65.6	56.5	57.8	66.1	66.3
Vehicle Noise:	71.2	70.7	66.9	62.9	71.4	71.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	112	242	521
CNEL:	55	119	257	554

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Kimberly Av.
Road Segment: e/o Raymond Av.
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,142 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	161 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	25 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	30.0 feet
Centerline Dist. to Observer:	30.0 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%	96.78%
Medium Trucks:	84.8%	4.9%	10.3%	2.18%
Heavy Trucks:	86.5%	2.7%	10.8%	1.03%

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:	27.726
Medium Trucks:	27.405
Heavy Trucks:	27.437

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-9.91	3.74	-1.20	*-4.49*	0.000	0.000
Medium Trucks:	79.45	-26.38	3.81	-1.20	*-4.86*	0.000	0.000
Heavy Trucks:	84.25	-29.63	3.81	-1.20	*-5.77*	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:	61.1	60.4	58.7	52.6	61.2	61.8
Medium Trucks:	55.7	55.4	49.1	47.5	56.0	56.2
Heavy Trucks:	57.2	57.0	48.0	49.3	57.6	57.7
Vehicle Noise:	63.4	62.9	59.4	55.1	63.6	64.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	11	24	52	113
CNEL:	12	26	56	120

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Kimberly Av.
Road Segment: e/o Dwy. 5
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,481 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	186 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	25 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	30.0 feet
Centerline Dist. to Observer:	30.0 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%	91.70%
Medium Trucks:	84.8%	4.9%	10.3%	4.37%
Heavy Trucks:	86.5%	2.7%	10.8%	3.93%

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:	27.726
Medium Trucks:	27.405
Heavy Trucks:	27.437

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-9.51	3.74	-1.20	*-4.49*	0.000	0.000
Medium Trucks:	79.45	-22.73	3.81	-1.20	*-4.86*	0.000	0.000
Heavy Trucks:	84.25	-23.19	3.81	-1.20	*-5.77*	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:	61.5	60.8	59.1	53.0	61.6	62.2
Medium Trucks:	59.3	59.1	52.7	51.2	59.6	59.9
Heavy Trucks:	63.7	63.5	54.5	55.7	64.1	64.2
Vehicle Noise:	66.6	66.3	61.0	58.5	66.9	67.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	19	40	87	187
CNEL:	20	42	91	196

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Kimberly Av.
Road Segment: e/o Dwy. 11
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,671 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	201 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	25 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	30.0 feet
Centerline Dist. to Observer:	30.0 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%	87.01%
Medium Trucks:	84.8%	4.9%	10.3%	6.38%
Heavy Trucks:	86.5%	2.7%	10.8%	6.61%

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:	27.726
Medium Trucks:	27.405
Heavy Trucks:	27.437

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-9.42	3.74	-1.20	*-4.49*	0.000	0.000
Medium Trucks:	79.45	-20.76	3.81	-1.20	*-4.86*	0.000	0.000
Heavy Trucks:	84.25	-20.61	3.81	-1.20	*-5.77*	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:	61.6	60.9	59.2	53.1	61.7	62.3
Medium Trucks:	61.3	61.0	54.7	53.1	61.6	61.8
Heavy Trucks:	66.2	66.1	57.0	58.3	66.6	66.8
Vehicle Noise:	68.5	68.2	62.1	60.3	68.8	69.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	25	54	115	248
CNEL:	26	56	120	258

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Orangethorpe Av.
Road Segment: w/o Raymond Av.
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,644 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,602 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.26%
Medium Trucks:	84.8%	4.9%	10.3%	2.51%
Heavy Trucks:	86.5%	2.7%	10.8%	1.23%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	2.66	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	77.72	-13.17	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-16.27	4.69	-1.20	*-5.43*	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:	72.6	71.9	70.2	64.1	72.7	73.3
Medium Trucks:	68.0	67.8	61.4	59.9	68.3	68.6
Heavy Trucks:	70.2	70.0	61.0	62.3	70.6	70.7
Vehicle Noise:	75.4	75.0	71.1	67.2	75.7	76.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	120	258	556	1,197
CNEL:	127	274	590	1,272

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Orangethorpe Av.
Road Segment: e/o Raymond Av.
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,444 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,512 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.14%
Medium Trucks:	84.8%	4.9%	10.3%	2.56%
Heavy Trucks:	86.5%	2.7%	10.8%	1.30%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.99	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	79.45	-13.75	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-16.69	4.69	-1.20	*-5.43*	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:	73.9	73.2	71.4	65.4	74.0	74.6
Medium Trucks:	69.2	68.9	62.6	61.0	69.5	69.7
Heavy Trucks:	71.1	70.9	61.8	63.1	71.4	71.6
Vehicle Noise:	76.6	76.1	72.4	68.3	76.8	77.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	142	306	660	1,422
CNEL:	151	326	702	1,513

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Orangethorpe Av.
Road Segment: e/o Acacia Av.
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,768 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,462 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.16%
Medium Trucks:	84.8%	4.9%	10.3%	2.55%
Heavy Trucks:	86.5%	2.7%	10.8%	1.29%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.90	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	79.45	-13.86	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-16.82	4.69	-1.20	*-5.43*	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	73.1	71.3	65.3	73.9	74.5
Medium Trucks:	69.1	68.8	62.5	60.9	69.4	69.6
Heavy Trucks:	70.9	70.7	61.7	63.0	71.3	71.4
Vehicle Noise:	76.5	76.0	72.3	68.2	76.7	77.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	140	302	650	1,400
CNEL:	149	321	691	1,489

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Orangethorpe Av.
Road Segment: e/o Dwy. 6
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,756 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,461 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	95.97%
Medium Trucks:	84.8%	4.9%	10.3%	2.64%
Heavy Trucks:	86.5%	2.7%	10.8%	1.40%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.89	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	79.45	-13.71	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-16.48	4.69	-1.20	*-5.43*	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	73.1	71.3	65.3	73.9	74.5
Medium Trucks:	69.2	69.0	62.6	61.1	69.5	69.8
Heavy Trucks:	71.3	71.1	62.1	63.3	71.7	71.8
Vehicle Noise:	76.6	76.1	72.3	68.3	76.8	77.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	143	307	662	1,427
CNEL:	152	327	704	1,516

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Orangethorpe Av.
Road Segment: e/o Dwy. 10
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,785 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,463 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	95.56%
Medium Trucks:	84.8%	4.9%	10.3%	2.81%
Heavy Trucks:	86.5%	2.7%	10.8%	1.63%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.88	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	79.45	-13.44	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-15.80	4.69	-1.20	*-5.43*	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:	73.7	73.1	71.3	65.3	73.9	74.5
Medium Trucks:	69.5	69.3	62.9	61.3	69.8	70.0
Heavy Trucks:	71.9	71.8	62.7	64.0	72.3	72.5
Vehicle Noise:	76.8	76.4	72.4	68.6	77.1	77.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	148	320	689	1,485
CNEL:	157	339	731	1,574

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Orangethorpe Av.
Road Segment: w/o N. State College Bl.
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,169 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,492 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	95.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.89%
Heavy Trucks:	86.5%	2.7%	10.8%	1.75%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.92	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	79.45	-13.26	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-15.45	4.69	-1.20	*-5.43*	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	73.1	71.4	65.3	73.9	74.5
Medium Trucks:	69.7	69.4	63.1	61.5	70.0	70.2
Heavy Trucks:	72.3	72.1	63.1	64.3	72.7	72.8
Vehicle Noise:	77.0	76.6	72.5	68.8	77.3	77.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	152	328	708	1,525
CNEL:	161	348	750	1,615

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Orangethorpe Av.
Road Segment: e/o N. State College Bl.
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,032 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,406 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	95.63%
Medium Trucks:	84.8%	4.9%	10.3%	2.77%
Heavy Trucks:	86.5%	2.7%	10.8%	1.60%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.78	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	79.45	-13.59	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-15.98	4.69	-1.20	*-5.43*	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:	73.6	73.0	71.2	65.2	73.8	74.4
Medium Trucks:	69.4	69.1	62.7	61.2	69.6	69.9
Heavy Trucks:	71.8	71.6	62.6	63.8	72.2	72.3
Vehicle Noise:	76.7	76.3	72.3	68.5	77.0	77.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	145	313	675	1,454
CNEL:	154	332	716	1,542

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Orangethorpe Av.
Road Segment: w/o S. Placentia Av.
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,594 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,298 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	95.59%
Medium Trucks:	84.8%	4.9%	10.3%	2.79%
Heavy Trucks:	86.5%	2.7%	10.8%	1.62%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.58	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	79.45	-13.77	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-16.13	4.69	-1.20	*-5.43*	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:	73.4	72.8	71.0	65.0	73.6	74.2
Medium Trucks:	69.2	68.9	62.6	61.0	69.5	69.7
Heavy Trucks:	71.6	71.4	62.4	63.7	72.0	72.1
Vehicle Noise:	76.5	76.1	72.1	68.3	76.8	77.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	141	305	657	1,415
CNEL:	150	323	696	1,500

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Orangethorpe Av.
Road Segment: e/o S. Placentia Av.
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,599 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,449 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	98 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%	95.63%
Medium Trucks:	84.8%	4.9%	10.3%	2.78%
Heavy Trucks:	86.5%	2.7%	10.8%	1.60%

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:	34.986
Medium Trucks:	34.732
Heavy Trucks:	34.757

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.86	2.22	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-13.51	2.27	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-15.91	2.27	-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:	71.3	70.7	68.9	62.9	71.5	72.1
Medium Trucks:	67.0	66.7	60.4	58.8	67.3	67.5
Heavy Trucks:	69.4	69.2	60.2	61.4	69.8	69.9
Vehicle Noise:	74.4	73.9	70.0	66.1	74.6	75.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	122	263	566	1,220
CNEL:	129	279	601	1,294

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Orangethorpe Av.
Road Segment: e/o SR-57 Southbound Ramps
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,780 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,688 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	98 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%	96.03%
Medium Trucks:	84.8%	4.9%	10.3%	2.61%
Heavy Trucks:	86.5%	2.7%	10.8%	1.36%

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:	34.986
Medium Trucks:	34.732
Heavy Trucks:	34.757

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.28	2.22	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-13.38	2.27	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-16.20	2.27	-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:	71.8	71.1	69.3	63.3	71.9	72.5
Medium Trucks:	67.1	66.9	60.5	59.0	67.4	67.7
Heavy Trucks:	69.1	68.9	59.9	61.2	69.5	69.6
Vehicle Noise:	74.5	74.1	70.3	66.3	74.8	75.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	125	269	579	1,247
CNEL:	133	286	616	1,326

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Orangethorpe Av.
Road Segment: e/o SR-57 Northbound Ramps
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,176 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,793 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	98 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%	96.37%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	34.986
Medium Trucks:	34.732
Heavy Trucks:	34.757

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.46	2.22	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-13.46	2.27	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-16.71	2.27	-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:	71.9	71.3	69.5	63.5	72.1	72.7
Medium Trucks:	67.1	66.8	60.4	58.9	67.4	67.6
Heavy Trucks:	68.6	68.4	59.4	60.6	69.0	69.1
Vehicle Noise:	74.5	74.0	70.4	66.2	74.7	75.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	124	266	574	1,236
CNEL:	132	284	611	1,317

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2022)
Road Name: Raymond Av.
Road Segment: n/o Kimberly Av.
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,580 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	1,846 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	53 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	42.0 feet
Centerline Dist. to Observer:	42.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	32.966
Medium Trucks:	32.696
Heavy Trucks:	32.723

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.18	2.61	-1.20	-4.60	0.000	0.000
Medium Trucks:	77.72	-14.73	2.66	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-17.98	2.66	-1.20	-5.53	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:	69.1	68.4	66.7	60.6	69.2	69.8
Medium Trucks:	64.5	64.2	57.8	56.3	64.7	65.0
Heavy Trucks:	66.5	66.3	57.3	58.5	66.9	67.0
Vehicle Noise:	71.9	71.4	67.6	63.6	72.1	72.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	269	580
CNEL:	62	133	286	617

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2022)
Road Name: Raymond Av.
Road Segment: s/o Kimberly Av.
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,861 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	1,868 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	53 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	42.0 feet
Centerline Dist. to Observer:	42.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	32.966
Medium Trucks:	32.696
Heavy Trucks:	32.723

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.23	2.61	-1.20	-4.60	0.000	0.000
Medium Trucks:	77.72	-14.68	2.66	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-17.93	2.66	-1.20	-5.53	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:	69.1	68.5	66.7	60.7	69.3	69.9
Medium Trucks:	64.5	64.2	57.9	56.3	64.8	65.0
Heavy Trucks:	66.5	66.3	57.3	58.6	66.9	67.0
Vehicle Noise:	71.9	71.5	67.7	63.6	72.2	72.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	126	271	584
CNEL:	62	134	288	621

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2022)
Road Name: Raymond Av.
Road Segment: s/o Orangethorpe Av.

Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,037 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,331 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	53 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	42.0 feet
Centerline Dist. to Observer:	42.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	32.966
Medium Trucks:	32.696
Heavy Trucks:	32.723

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	2.19	2.61	-1.20	*-4.60*	0.000	0.000
Medium Trucks:	77.72	-13.71	2.66	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-16.97	2.66	-1.20	*-5.53*	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:	70.1	69.5	67.7	61.6	70.3	70.9
Medium Trucks:	65.5	65.2	58.8	57.3	65.8	66.0
Heavy Trucks:	67.5	67.3	58.3	59.5	67.9	68.0
Vehicle Noise:	72.9	72.4	68.6	64.6	73.1	73.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	68	146	315	678
CNEL:	72	155	334	721

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2022)
Road Name: Raymond Av.
Road Segment: s/o SR-91 Westbound Ramps

Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,684 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,230 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	45 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	45.0 feet
Centerline Dist. to Observer:	45.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	39.291
Medium Trucks:	39.065
Heavy Trucks:	39.087

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	1.03	1.47	-1.20	*-4.62*	0.000	0.000
Medium Trucks:	81.00	-14.88	1.50	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-18.13	1.50	-1.20	*-5.49*	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	70.8	69.1	63.0	71.6	72.2
Medium Trucks:	66.4	66.2	59.8	58.3	66.7	66.9
Heavy Trucks:	67.5	67.4	58.3	59.6	67.9	68.1
Vehicle Noise:	73.8	73.4	69.9	65.5	74.1	74.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	84	181	390	840
CNEL:	90	193	416	897

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2022)
Road Name: Raymond Av.
Road Segment: s/o SR-91 Eastbound Ramps

Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,973 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,252 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	45 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	45.0 feet
Centerline Dist. to Observer:	45.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	39.291
Medium Trucks:	39.065
Heavy Trucks:	39.087

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	1.07	1.47	-1.20	*-4.62*	0.000	0.000
Medium Trucks:	81.00	-14.83	1.50	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-18.09	1.50	-1.20	*-5.49*	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	70.9	69.1	63.1	71.7	72.3
Medium Trucks:	66.5	66.2	59.8	58.3	66.8	67.0
Heavy Trucks:	67.6	67.4	58.4	59.6	68.0	68.1
Vehicle Noise:	73.9	73.4	69.9	65.6	74.1	74.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	85	182	392	846
CNEL:	90	194	419	903

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2022)
Road Name: Acacia Av.
Road Segment: n/o Kimberly Av.

Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,188 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	615 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	45 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	40.0 feet
Centerline Dist. to Observer:	40.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	33.448
Medium Trucks:	33.182
Heavy Trucks:	33.208

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-3.60	2.52	-1.20	*-4.59*	0.000	0.000
Medium Trucks:	77.72	-19.50	2.57	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-22.76	2.56	-1.20	*-5.56*	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	63.6	61.8	55.8	64.4	65.0
Medium Trucks:	59.6	59.3	53.0	51.4	59.9	60.1
Heavy Trucks:	61.6	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	67.0	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:	26	56	121	262
CNEL:	28	60	129	278

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2022) | *Project Name:* Goodman Logistics Center
Road Name: Acacia Av. | *Job Number:* 13158
Road Segment: s/o Kimberly Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,772 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	584 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	45 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	40.0 feet
Centerline Dist. to Observer:	40.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	33.448
Medium Trucks:	33.182
Heavy Trucks:	33.208

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-3.82	2.52	-1.20	*-4.59*	0.000	0.000
Medium Trucks:	77.72	-19.73	2.57	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-22.98	2.56	-1.20	*-5.56*	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:	64.0	63.3	61.6	55.5	64.1	64.8
Medium Trucks:	59.4	59.1	52.7	51.2	59.6	59.9
Heavy Trucks:	61.4	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	66.8	66.3	62.5	58.5	67.0	67.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	25	54	117	253
CNEL:	27	58	125	269

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2022) | *Project Name:* Goodman Logistics Center
Road Name: N. State College Bl. | *Job Number:* 13158
Road Segment: n/o Chapman Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,766 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,837 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	3.04	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	77.72	-12.86	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-16.12	4.69	-1.20	*-5.43*	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:	73.0	72.3	70.5	64.5	73.1	73.7
Medium Trucks:	68.4	68.1	61.7	60.2	68.6	68.9
Heavy Trucks:	70.4	70.2	61.2	62.4	70.8	70.9
Vehicle Noise:	75.7	75.3	71.5	67.5	76.0	76.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	125	270	582	1,253
CNEL:	133	287	618	1,332

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2022) | *Project Name:* Goodman Logistics Center
Road Name: N. State College Bl. | *Job Number:* 13158
Road Segment: s/o Chapman Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,431 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	1,985 vehicles
Vehicle Speed:	35 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	64.30	2.07	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	75.75	-13.83	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	81.57	-17.09	4.69	-1.20	*-5.43*	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:	69.8	69.1	67.4	61.3	69.9	70.5
Medium Trucks:	65.4	65.2	58.8	57.3	65.7	65.9
Heavy Trucks:	68.0	67.8	58.8	60.0	68.4	68.5
Vehicle Noise:	72.8	72.4	68.4	64.6	73.1	73.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	80	173	373	805
CNEL:	85	184	396	853

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2022) | *Project Name:* Goodman Logistics Center
Road Name: N. State College Bl. | *Job Number:* 13158
Road Segment: s/o Commonwealth Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,276 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	1,824 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	1.12	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	77.72	-14.78	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-18.04	4.69	-1.20	*-5.43*	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:	71.0	70.4	68.6	62.6	71.2	71.8
Medium Trucks:	66.4	66.2	59.8	58.3	66.7	67.0
Heavy Trucks:	68.5	68.3	59.2	60.5	68.8	69.0
Vehicle Noise:	73.8	73.4	69.6	65.6	74.1	74.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	93	201	433	933
CNEL:	99	214	461	992

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2022) | *Project Name:* Goodman Logistics Center
Road Name: N. State College Bl. | *Job Number:* 13158
Road Segment: s/o Kimberly Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,525 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	1,767 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.99	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	77.72	-14.92	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-18.17	4.69	-1.20	*-5.43*	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:	70.9	70.2	68.5	62.4	71.0	71.7
Medium Trucks:	66.3	66.0	59.7	58.1	66.6	66.8
Heavy Trucks:	68.3	68.1	59.1	60.4	68.7	68.8
Vehicle Noise:	73.7	73.2	69.4	65.4	73.9	74.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	197	424	914
CNEL:	97	209	451	972

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2022) | *Project Name:* Goodman Logistics Center
Road Name: N. State College Bl. | *Job Number:* 13158
Road Segment: s/o Dwy. 16

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,716 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	1,782 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.02	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	77.72	-14.88	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-18.14	4.69	-1.20	*-5.43*	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:	70.9	70.3	68.5	62.5	71.1	71.7
Medium Trucks:	66.3	66.1	59.7	58.2	66.6	66.9
Heavy Trucks:	68.4	68.2	59.1	60.4	68.7	68.9
Vehicle Noise:	73.7	73.3	69.5	65.5	74.0	74.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	426	919
CNEL:	98	210	453	977

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2022) | *Project Name:* Goodman Logistics Center
Road Name: N. State College Bl. | *Job Number:* 13158
Road Segment: s/o Orangethorpe Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,017 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,105 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.74	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	77.72	-14.16	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-17.41	4.69	-1.20	*-5.43*	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	71.0	69.2	63.2	71.8	72.4
Medium Trucks:	67.1	66.8	60.4	58.9	67.4	67.6
Heavy Trucks:	69.1	68.9	59.9	61.1	69.5	69.6
Vehicle Noise:	74.4	74.0	70.2	66.2	74.7	75.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	103	221	477	1,027
CNEL:	109	235	507	1,092

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2022) | *Project Name:* Goodman Logistics Center
Road Name: N. State College Bl. | *Job Number:* 13158
Road Segment: s/o SR-91 Westbound Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,501 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,066 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	78 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	53.0 feet
Centerline Dist. to Observer:	53.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	36.235
Medium Trucks:	35.990
Heavy Trucks:	36.014

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.28	1.99	-1.20	*-4.66*	0.000	0.000
Medium Trucks:	82.40	-15.62	2.04	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	86.40	-18.88	2.03	-1.20	*-5.40*	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:	72.9	72.2	70.4	64.4	73.0	73.6
Medium Trucks:	67.6	67.4	61.0	59.4	67.9	68.1
Heavy Trucks:	68.4	68.2	59.1	60.4	68.7	68.9
Vehicle Noise:	75.0	74.6	71.2	66.7	75.3	75.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	119	256	552	1,189
CNEL:	127	274	590	1,272

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2022)
Road Name: N. State College Bl.
Road Segment: s/o SR-91 Eastbound Ramps
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,992 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	1,727 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	78 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	53.0 feet
Centerline Dist. to Observer:	53.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	36.235
Medium Trucks:	35.990
Heavy Trucks:	36.014

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.50	1.99	-1.20	-4.66	0.000	0.000
Medium Trucks:	82.40	-16.40	2.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	86.40	-19.66	2.03	-1.20	-5.40	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	71.4	69.7	63.6	72.2	72.8
Medium Trucks:	66.8	66.6	60.2	58.7	67.1	67.4
Heavy Trucks:	67.6	67.4	58.4	59.6	68.0	68.1
Vehicle Noise:	74.3	73.8	70.4	66.0	74.5	74.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	106	227	490	1,056
CNEL:	113	243	524	1,129

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2022)
Road Name: S. Placentia Av.
Road Segment: n/o Kimberly Av.
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,741 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	1,783 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	53 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	42.0 feet
Centerline Dist. to Observer:	42.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	32.966
Medium Trucks:	32.696
Heavy Trucks:	32.723

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.03	2.61	-1.20	-4.60	0.000	0.000
Medium Trucks:	77.72	-14.88	2.66	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-18.13	2.66	-1.20	-5.53	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:	68.9	68.3	66.5	60.5	69.1	69.7
Medium Trucks:	64.3	64.0	57.7	56.1	64.6	64.8
Heavy Trucks:	66.3	66.1	57.1	58.4	66.7	66.8
Vehicle Noise:	71.7	71.3	67.5	63.4	72.0	72.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	122	263	567
CNEL:	60	130	280	603

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2022)
Road Name: S. Placentia Av.
Road Segment: s/o Kimberly Av.
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,809 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	1,713 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	53 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	42.0 feet
Centerline Dist. to Observer:	42.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	32.966
Medium Trucks:	32.696
Heavy Trucks:	32.723

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.85	2.61	-1.20	-4.60	0.000	0.000
Medium Trucks:	77.72	-15.05	2.66	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-18.31	2.66	-1.20	-5.53	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	68.1	66.4	60.3	68.9	69.5
Medium Trucks:	64.1	63.9	57.5	56.0	64.4	64.6
Heavy Trucks:	66.1	66.0	56.9	58.2	66.5	66.7
Vehicle Noise:	71.5	71.1	67.3	63.3	71.8	72.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	119	256	552
CNEL:	59	126	272	587

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2022)
Road Name: Kimberly Av.
Road Segment: e/o Raymond Av.
Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,136 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	160 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	25 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	30.0 feet
Centerline Dist. to Observer:	30.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	27.726
Medium Trucks:	27.405
Heavy Trucks:	27.437

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-9.94	3.74	-1.20	-4.49	0.000	0.000
Medium Trucks:	79.45	-25.85	3.81	-1.20	-4.86	0.000	0.000
Heavy Trucks:	84.25	-29.10	3.81	-1.20	-5.77	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:	61.1	60.4	58.6	52.6	61.2	61.8
Medium Trucks:	56.2	55.9	49.6	48.0	56.5	56.7
Heavy Trucks:	57.8	57.6	48.5	49.8	58.1	58.3
Vehicle Noise:	63.6	63.1	59.5	55.3	63.8	64.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	25	54	116
CNEL:	12	27	58	124

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2022) | Project Name: Goodman Logistics Center
Road Name: Kimberly Av. | Job Number: 13158
Road Segment: e/o Dwy. 5

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,230 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	167 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	25 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	30.0 feet
Centerline Dist. to Observer:	30.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	27.726
Medium Trucks:	27.405
Heavy Trucks:	27.437

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-9.76	3.74	-1.20	-4.49	0.000	0.000
Medium Trucks:	79.45	-25.66	3.81	-1.20	-4.86	0.000	0.000
Heavy Trucks:	84.25	-28.92	3.81	-1.20	-5.77	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:	61.2	60.6	58.8	52.8	61.4	62.0
Medium Trucks:	56.4	56.1	49.8	48.2	56.7	56.9
Heavy Trucks:	57.9	57.8	48.7	50.0	58.3	58.5
Vehicle Noise:	63.8	63.3	59.7	55.5	64.0	64.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	26	56	120
CNEL:	13	27	59	128

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2022) | Project Name: Goodman Logistics Center
Road Name: Kimberly Av. | Job Number: 13158
Road Segment: e/o Dwy. 11

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,148 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	161 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	25 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	30.0 feet
Centerline Dist. to Observer:	30.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	27.726
Medium Trucks:	27.405
Heavy Trucks:	27.437

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-9.92	3.74	-1.20	-4.49	0.000	0.000
Medium Trucks:	79.45	-25.82	3.81	-1.20	-4.86	0.000	0.000
Heavy Trucks:	84.25	-29.08	3.81	-1.20	-5.77	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:	61.1	60.4	58.7	52.6	61.2	61.8
Medium Trucks:	56.2	56.0	49.6	48.1	56.5	56.8
Heavy Trucks:	57.8	57.6	48.6	49.8	58.2	58.3
Vehicle Noise:	63.6	63.2	59.5	55.3	63.9	64.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	25	54	117
CNEL:	12	27	58	124

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2022) | Project Name: Goodman Logistics Center
Road Name: Orangethorpe Av. | Job Number: 13158
Road Segment: w/o Raymond Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,670 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,680 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.79	4.61	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-13.11	4.70	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-16.37	4.69	-1.20	-5.43	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:	72.7	72.1	70.3	64.2	72.9	73.5
Medium Trucks:	68.1	67.8	61.5	59.9	68.4	68.6
Heavy Trucks:	70.1	69.9	60.9	62.2	70.5	70.6
Vehicle Noise:	75.5	75.1	71.2	67.2	75.7	76.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	260	560	1,206
CNEL:	128	276	595	1,282

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2022) | Project Name: Goodman Logistics Center
Road Name: Orangethorpe Av. | Job Number: 13158
Road Segment: e/o Raymond Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,929 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,549 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.06	4.61	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-13.84	4.70	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-17.09	4.69	-1.20	-5.43	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:	73.9	73.3	71.5	65.5	74.1	74.7
Medium Trucks:	69.1	68.8	62.5	60.9	69.4	69.6
Heavy Trucks:	70.7	70.5	61.4	62.7	71.0	71.2
Vehicle Noise:	76.5	76.0	72.4	68.2	76.7	77.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	140	302	651	1,403
CNEL:	149	322	694	1,494

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2022) | *Project Name:* Goodman Logistics Center
Road Name: Orangethorpe Av. | *Job Number:* 13158
Road Segment: e/o Acacia Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,295 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,501 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.98	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	79.45	-13.92	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-17.18	4.69	-1.20	*-5.43*	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	73.2	71.4	65.4	74.0	74.6
Medium Trucks:	69.0	68.8	62.4	60.9	69.3	69.6
Heavy Trucks:	70.6	70.4	61.4	62.6	71.0	71.1
Vehicle Noise:	76.4	75.9	72.3	68.1	76.6	77.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	139	298	643	1,385
CNEL:	148	318	685	1,476

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2022) | *Project Name:* Goodman Logistics Center
Road Name: Orangethorpe Av. | *Job Number:* 13158
Road Segment: e/o Dwy. 6

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,295 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,501 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.98	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	79.45	-13.92	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-17.18	4.69	-1.20	*-5.43*	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	73.2	71.4	65.4	74.0	74.6
Medium Trucks:	69.0	68.8	62.4	60.9	69.3	69.6
Heavy Trucks:	70.6	70.4	61.4	62.6	71.0	71.1
Vehicle Noise:	76.4	75.9	72.3	68.1	76.6	77.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	139	298	643	1,385
CNEL:	148	318	685	1,476

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2022) | *Project Name:* Goodman Logistics Center
Road Name: Orangethorpe Av. | *Job Number:* 13158
Road Segment: e/o Dwy. 10

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,023 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,481 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.95	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	79.45	-13.96	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-17.21	4.69	-1.20	*-5.43*	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	73.2	71.4	65.3	74.0	74.6
Medium Trucks:	69.0	68.7	62.4	60.8	69.3	69.5
Heavy Trucks:	70.5	70.4	61.3	62.6	70.9	71.1
Vehicle Noise:	76.4	75.9	72.3	68.1	76.6	77.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	138	297	639	1,378
CNEL:	147	316	681	1,468

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2022) | *Project Name:* Goodman Logistics Center
Road Name: Orangethorpe Av. | *Job Number:* 13158
Road Segment: w/o N. State College Bl.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,023 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,481 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.95	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	79.45	-13.96	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-17.21	4.69	-1.20	*-5.43*	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	73.2	71.4	65.3	74.0	74.6
Medium Trucks:	69.0	68.7	62.4	60.8	69.3	69.5
Heavy Trucks:	70.5	70.4	61.3	62.6	70.9	71.1
Vehicle Noise:	76.4	75.9	72.3	68.1	76.6	77.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	138	297	639	1,378
CNEL:	147	316	681	1,468

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2022) | Project Name: Goodman Logistics Center
Road Name: Orangethorpe Av. | Job Number: 13158
Road Segment: e/o N. State College Bl.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,981 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,402 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.81	4.61	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-14.10	4.70	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-17.35	4.69	-1.20	-5.43	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:	73.7	73.0	71.3	65.2	73.8	74.4
Medium Trucks:	68.9	68.6	62.2	60.7	69.1	69.4
Heavy Trucks:	70.4	70.2	61.2	62.4	70.8	70.9
Vehicle Noise:	76.2	75.8	72.1	67.9	76.5	76.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	135	291	626	1,348
CNEL:	144	310	667	1,437

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2022) | Project Name: Goodman Logistics Center
Road Name: Orangethorpe Av. | Job Number: 13158
Road Segment: w/o S. Placentia Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,514 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,292 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.60	4.61	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-14.30	4.70	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-17.56	4.69	-1.20	-5.43	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:	73.5	72.8	71.0	65.0	73.6	74.2
Medium Trucks:	68.7	68.4	62.0	60.5	68.9	69.2
Heavy Trucks:	70.2	70.0	61.0	62.2	70.6	70.7
Vehicle Noise:	76.0	75.6	71.9	67.7	76.3	76.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	131	282	607	1,307
CNEL:	139	300	646	1,392

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2022) | Project Name: Goodman Logistics Center
Road Name: Orangethorpe Av. | Job Number: 13158
Road Segment: e/o S. Placentia Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,419 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,510 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	98 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	34.986
Medium Trucks:	34.732
Heavy Trucks:	34.757

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.00	2.22	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-13.90	2.27	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-17.16	2.27	-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	70.8	69.1	63.0	71.6	72.2
Medium Trucks:	66.6	66.3	60.0	58.4	66.9	67.1
Heavy Trucks:	68.2	68.0	58.9	60.2	68.5	68.7
Vehicle Noise:	74.0	73.6	69.9	65.7	74.2	74.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	248	535	1,152
CNEL:	123	264	570	1,228

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2022) | Project Name: Goodman Logistics Center
Road Name: Orangethorpe Av. | Job Number: 13158
Road Segment: e/o SR-57 Southbound Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	36,686 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,756 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	98 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	34.986
Medium Trucks:	34.732
Heavy Trucks:	34.757

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.40	2.22	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-13.50	2.27	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-16.76	2.27	-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:	71.9	71.2	69.5	63.4	72.0	72.6
Medium Trucks:	67.0	66.8	60.4	58.8	67.3	67.5
Heavy Trucks:	68.6	68.4	59.3	60.6	69.0	69.1
Vehicle Noise:	74.4	74.0	70.3	66.1	74.7	75.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	123	264	569	1,226
CNEL:	131	281	606	1,306

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2022) | Project Name: Goodman Logistics Center
Road Name: Orangethorpe Av. | Job Number: 13158
Road Segment: e/o SR-57 Northbound Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,133 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,865 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	98 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%	96.36%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	34.986
Medium Trucks:	34.732
Heavy Trucks:	34.757

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.57	2.22	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-13.33	2.27	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-16.59	2.27	-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:	72.1	71.4	69.6	63.6	72.2	72.8
Medium Trucks:	67.2	66.9	60.6	59.0	67.5	67.7
Heavy Trucks:	68.7	68.6	59.5	60.8	69.1	69.2
Vehicle Noise:	74.6	74.1	70.5	66.3	74.8	75.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	126	271	584	1,258
CNEL:	134	289	622	1,340

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYCP (2022) | Project Name: Goodman Logistics Center
Road Name: Raymond Av. | Job Number: 13158
Road Segment: n/o Kimberly Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,706 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	1,856 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	53 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	42.0 feet
Centerline Dist. to Observer:	42.0 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%	96.37%
Medium Trucks:	84.8%	4.9%	10.3%	2.46%
Heavy Trucks:	86.5%	2.7%	10.8%	1.16%

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:	32.966
Medium Trucks:	32.696
Heavy Trucks:	32.723

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.20	2.61	-1.20	-4.60	0.000	0.000
Medium Trucks:	77.72	-14.73	2.66	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-17.98	2.66	-1.20	-5.53	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:	69.1	68.5	66.7	60.6	69.3	69.9
Medium Trucks:	64.5	64.2	57.8	56.3	64.7	65.0
Heavy Trucks:	66.5	66.3	57.3	58.5	66.9	67.0
Vehicle Noise:	71.9	71.4	67.6	63.6	72.1	72.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	270	581
CNEL:	62	133	287	618

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYCP (2022) | Project Name: Goodman Logistics Center
Road Name: Raymond Av. | Job Number: 13158
Road Segment: s/o Kimberly Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,987 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	1,877 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	53 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	42.0 feet
Centerline Dist. to Observer:	42.0 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%	96.37%
Medium Trucks:	84.8%	4.9%	10.3%	2.46%
Heavy Trucks:	86.5%	2.7%	10.8%	1.16%

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:	32.966
Medium Trucks:	32.696
Heavy Trucks:	32.723

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.25	2.61	-1.20	-4.60	0.000	0.000
Medium Trucks:	77.72	-14.68	2.66	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-17.93	2.66	-1.20	-5.53	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:	69.2	68.5	66.7	60.7	69.3	69.9
Medium Trucks:	64.5	64.2	57.9	56.3	64.8	65.0
Heavy Trucks:	66.5	66.3	57.3	58.6	66.9	67.0
Vehicle Noise:	71.9	71.5	67.7	63.7	72.2	72.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	126	272	586
CNEL:	62	134	289	623

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYCP (2022) | Project Name: Goodman Logistics Center
Road Name: Raymond Av. | Job Number: 13158
Road Segment: s/o Orangethorpe Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,334 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,354 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	53 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	42.0 feet
Centerline Dist. to Observer:	42.0 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%	96.25%
Medium Trucks:	84.8%	4.9%	10.3%	2.52%
Heavy Trucks:	86.5%	2.7%	10.8%	1.24%

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:	32.966
Medium Trucks:	32.696
Heavy Trucks:	32.723

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.23	2.61	-1.20	-4.60	0.000	0.000
Medium Trucks:	77.72	-13.60	2.66	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-16.68	2.66	-1.20	-5.53	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:	70.1	69.5	67.7	61.7	70.3	70.9
Medium Trucks:	65.6	65.3	58.9	57.4	65.9	66.1
Heavy Trucks:	67.8	67.6	58.6	59.8	68.2	68.3
Vehicle Noise:	73.0	72.6	68.7	64.7	73.2	73.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	149	321	691
CNEL:	73	158	341	734

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYCP (2022) | *Project Name:* Goodman Logistics Center
Road Name: Raymond Av. | *Job Number:* 13158
Road Segment: s/o SR-91 Westbound Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,810 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,239 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	45 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	45.0 feet
Centerline Dist. to Observer:	45.0 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%	96.37%
Medium Trucks:	84.8%	4.9%	10.3%	2.46%
Heavy Trucks:	86.5%	2.7%	10.8%	1.16%

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:	39.291
Medium Trucks:	39.065
Heavy Trucks:	39.087

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	1.05	1.47	-1.20	*-4.62*	0.000	0.000
Medium Trucks:	81.00	-14.88	1.50	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-18.13	1.50	-1.20	*-5.49*	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	70.9	69.1	63.0	71.7	72.3
Medium Trucks:	66.4	66.2	59.8	58.3	66.7	66.9
Heavy Trucks:	67.5	67.4	58.3	59.6	67.9	68.1
Vehicle Noise:	73.8	73.4	69.9	65.6	74.1	74.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	84	181	391	842
CNEL:	90	194	417	898

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYCP (2022) | *Project Name:* Goodman Logistics Center
Road Name: Raymond Av. | *Job Number:* 13158
Road Segment: s/o SR-91 Eastbound Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,099 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,261 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	45 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	45.0 feet
Centerline Dist. to Observer:	45.0 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%	96.37%
Medium Trucks:	84.8%	4.9%	10.3%	2.46%
Heavy Trucks:	86.5%	2.7%	10.8%	1.16%

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:	39.291
Medium Trucks:	39.065
Heavy Trucks:	39.087

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	1.09	1.47	-1.20	*-4.62*	0.000	0.000
Medium Trucks:	81.00	-14.83	1.50	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-18.09	1.50	-1.20	*-5.49*	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:	71.6	70.9	69.1	63.1	71.7	72.3
Medium Trucks:	66.5	66.2	59.8	58.3	66.8	67.0
Heavy Trucks:	67.6	67.4	58.4	59.6	68.0	68.1
Vehicle Noise:	73.9	73.4	69.9	65.6	74.1	74.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	85	182	393	847
CNEL:	90	195	420	904

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYCP (2022) | *Project Name:* Goodman Logistics Center
Road Name: Acacia Av. | *Job Number:* 13158
Road Segment: n/o Kimberly Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,314 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	625 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	45 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	40.0 feet
Centerline Dist. to Observer:	40.0 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%	96.41%
Medium Trucks:	84.8%	4.9%	10.3%	2.44%
Heavy Trucks:	86.5%	2.7%	10.8%	1.15%

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:	33.448
Medium Trucks:	33.182
Heavy Trucks:	33.208

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-3.53	2.52	-1.20	*-4.59*	0.000	0.000
Medium Trucks:	77.72	-19.50	2.57	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-22.76	2.56	-1.20	*-5.56*	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:	64.3	63.6	61.9	55.8	64.4	65.0
Medium Trucks:	59.6	59.3	53.0	51.4	59.9	60.1
Heavy Trucks:	61.6	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	67.0	66.6	62.8	58.8	67.3	67.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	26	57	122	263
CNEL:	28	60	130	280

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYCP (2022) | *Project Name:* Goodman Logistics Center
Road Name: Acacia Av. | *Job Number:* 13158
Road Segment: s/o Kimberly Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,150 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	612 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	45 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	40.0 feet
Centerline Dist. to Observer:	40.0 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%	96.52%
Medium Trucks:	84.8%	4.9%	10.3%	2.36%
Heavy Trucks:	86.5%	2.7%	10.8%	1.12%

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:	33.448
Medium Trucks:	33.182
Heavy Trucks:	33.208

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-3.61	2.52	-1.20	*-4.59*	0.000	0.000
Medium Trucks:	77.72	-19.73	2.57	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-22.98	2.56	-1.20	*-5.56*	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	63.6	61.8	55.7	64.4	65.0
Medium Trucks:	59.4	59.1	52.7	51.2	59.6	59.9
Heavy Trucks:	61.4	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	66.9	66.4	62.7	58.6	67.1	67.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	26	55	119	257
CNEL:	27	59	127	274

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYCP (2022) | *Project Name:* Goodman Logistics Center
Road Name: N. State College Bl. | *Job Number:* 13158
Road Segment: n/o Chapman Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,063 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,859 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.27%
Medium Trucks:	84.8%	4.9%	10.3%	2.51%
Heavy Trucks:	86.5%	2.7%	10.8%	1.23%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	3.07	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	77.72	-12.77	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-15.88	4.69	-1.20	*-5.43*	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:	73.0	72.3	70.6	64.5	73.1	73.7
Medium Trucks:	68.4	68.2	61.8	60.3	68.7	69.0
Heavy Trucks:	70.6	70.4	61.4	62.6	71.0	71.1
Vehicle Noise:	75.8	75.4	71.6	67.6	76.1	76.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	127	274	591	1,273
CNEL:	135	291	628	1,353

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYCP (2022) | *Project Name:* Goodman Logistics Center
Road Name: N. State College Bl. | *Job Number:* 13158
Road Segment: s/o Chapman Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,728 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,008 vehicles
Vehicle Speed:	35 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.23%
Medium Trucks:	84.8%	4.9%	10.3%	2.52%
Heavy Trucks:	86.5%	2.7%	10.8%	1.25%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	64.30	2.11	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	75.75	-13.70	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	81.57	-16.75	4.69	-1.20	*-5.43*	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:	69.8	69.2	67.4	61.3	70.0	70.6
Medium Trucks:	65.6	65.3	58.9	57.4	65.8	66.1
Heavy Trucks:	68.3	68.1	59.1	60.3	68.7	68.8
Vehicle Noise:	73.0	72.6	68.5	64.8	73.3	73.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	82	178	383	825
CNEL:	87	188	405	874

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYCP (2022) | *Project Name:* Goodman Logistics Center
Road Name: N. State College Bl. | *Job Number:* 13158
Road Segment: s/o Commonwealth Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,573 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	1,846 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.22%
Medium Trucks:	84.8%	4.9%	10.3%	2.53%
Heavy Trucks:	86.5%	2.7%	10.8%	1.26%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	1.17	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	77.72	-14.64	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-17.67	4.69	-1.20	*-5.43*	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:	71.1	70.4	68.7	62.6	71.2	71.8
Medium Trucks:	66.6	66.3	60.0	58.4	66.9	67.1
Heavy Trucks:	68.8	68.6	59.6	60.9	69.2	69.3
Vehicle Noise:	74.0	73.5	69.7	65.7	74.2	74.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	96	206	444	957
CNEL:	102	219	472	1,016

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYCP (2022) | *Project Name:* Goodman Logistics Center
Road Name: N. State College Bl. | *Job Number:* 13158
Road Segment: s/o Kimberly Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,551 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	1,844 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	95.00%
Medium Trucks:	84.8%	4.9%	10.3%	3.05%
Heavy Trucks:	86.5%	2.7%	10.8%	1.96%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	1.11	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	77.72	-13.83	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-15.75	4.69	-1.20	*-5.43*	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:	71.0	70.4	68.6	62.5	71.2	71.8
Medium Trucks:	67.4	67.1	60.8	59.2	67.7	67.9
Heavy Trucks:	70.7	70.6	61.5	62.8	71.1	71.3
Vehicle Noise:	74.8	74.4	69.9	66.6	75.0	75.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	108	233	503	1,084
CNEL:	114	246	531	1,143

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYCP (2022) *Project Name:* Goodman Logistics Center
Road Name: N. State College Bl. *Job Number:* 13158
Road Segment: s/o Dwy. 16

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,844 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	1,866 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	94.92%
Medium Trucks:	84.8%	4.9%	10.3%	3.08%
Heavy Trucks:	86.5%	2.7%	10.8%	2.00%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	1.16	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	77.72	-13.73	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-15.60	4.69	-1.20	*-5.43*	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:	71.1	70.4	68.7	62.6	71.2	71.8
Medium Trucks:	67.5	67.2	60.9	59.3	67.8	68.0
Heavy Trucks:	70.9	70.7	61.7	62.9	71.3	71.4
Vehicle Noise:	74.9	74.5	70.0	66.7	75.1	75.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	110	237	511	1,100
CNEL:	116	250	539	1,160

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYCP (2022) *Project Name:* Goodman Logistics Center
Road Name: N. State College Bl. *Job Number:* 13158
Road Segment: s/o Orangethorpe Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,269 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,199 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	94.81%
Medium Trucks:	84.8%	4.9%	10.3%	3.13%
Heavy Trucks:	86.5%	2.7%	10.8%	2.06%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	1.86	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	77.72	-12.95	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-14.77	4.69	-1.20	*-5.43*	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:	71.8	71.1	69.4	63.3	71.9	72.5
Medium Trucks:	68.3	68.0	61.6	60.1	68.6	68.8
Heavy Trucks:	71.7	71.5	62.5	63.8	72.1	72.2
Vehicle Noise:	75.6	75.3	70.7	67.4	75.9	76.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	124	267	575	1,239
CNEL:	131	281	606	1,306

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYCP (2022) *Project Name:* Goodman Logistics Center
Road Name: N. State College Bl. *Job Number:* 13158
Road Segment: s/o SR-91 Westbound Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,141 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,114 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	78 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	53.0 feet
Centerline Dist. to Observer:	53.0 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%	95.96%
Medium Trucks:	84.8%	4.9%	10.3%	2.64%
Heavy Trucks:	86.5%	2.7%	10.8%	1.41%

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:	36.235
Medium Trucks:	35.990
Heavy Trucks:	36.014

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	0.36	1.99	-1.20	*-4.66*	0.000	0.000
Medium Trucks:	82.40	-15.25	2.04	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	86.40	-17.97	2.03	-1.20	*-5.40*	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:	72.9	72.3	70.5	64.5	73.1	73.7
Medium Trucks:	68.0	67.7	61.4	59.8	68.3	68.5
Heavy Trucks:	69.3	69.1	60.0	61.3	69.7	69.8
Vehicle Noise:	75.4	74.9	71.3	67.1	75.6	76.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	125	270	581	1,252
CNEL:	134	288	620	1,335

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYCP (2022) *Project Name:* Goodman Logistics Center
Road Name: N. State College Bl. *Job Number:* 13158
Road Segment: s/o SR-91 Eastbound Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,118 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	1,737 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	78 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	53.0 feet
Centerline Dist. to Observer:	53.0 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%	96.38%
Medium Trucks:	84.8%	4.9%	10.3%	2.46%
Heavy Trucks:	86.5%	2.7%	10.8%	1.16%

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:	36.235
Medium Trucks:	35.990
Heavy Trucks:	36.014

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-0.47	1.99	-1.20	*-4.66*	0.000	0.000
Medium Trucks:	82.40	-16.40	2.04	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	86.40	-19.66	2.03	-1.20	*-5.40*	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	71.4	69.7	63.6	72.2	72.9
Medium Trucks:	66.8	66.6	60.2	58.7	67.1	67.4
Heavy Trucks:	67.6	67.4	58.4	59.6	68.0	68.1
Vehicle Noise:	74.3	73.8	70.4	66.0	74.5	74.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	106	228	491	1,058
CNEL:	113	244	525	1,131

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYCP (2022) | Project Name: Goodman Logistics Center
Road Name: S. Placentia Av. | Job Number: 13158
Road Segment: n/o Kimberly Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,867 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	1,793 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	53 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	42.0 feet
Centerline Dist. to Observer:	42.0 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%	96.37%
Medium Trucks:	84.8%	4.9%	10.3%	2.46%
Heavy Trucks:	86.5%	2.7%	10.8%	1.16%

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:	32.966
Medium Trucks:	32.696
Heavy Trucks:	32.723

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.05	2.61	-1.20	-4.60	0.000	0.000
Medium Trucks:	77.72	-14.88	2.66	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-18.13	2.66	-1.20	-5.53	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:	69.0	68.3	66.5	60.5	69.1	69.7
Medium Trucks:	64.3	64.0	57.7	56.1	64.6	64.8
Heavy Trucks:	66.3	66.1	57.1	58.4	66.7	66.8
Vehicle Noise:	71.7	71.3	67.5	63.5	72.0	72.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	122	264	568
CNEL:	60	130	280	604

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYCP (2022) | Project Name: Goodman Logistics Center
Road Name: S. Placentia Av. | Job Number: 13158
Road Segment: s/o Kimberly Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,935 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	1,723 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	53 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	42.0 feet
Centerline Dist. to Observer:	42.0 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%	96.38%
Medium Trucks:	84.8%	4.9%	10.3%	2.46%
Heavy Trucks:	86.5%	2.7%	10.8%	1.16%

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:	32.966
Medium Trucks:	32.696
Heavy Trucks:	32.723

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.88	2.61	-1.20	-4.60	0.000	0.000
Medium Trucks:	77.72	-15.05	2.66	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-18.31	2.66	-1.20	-5.53	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	68.1	66.4	60.3	68.9	69.5
Medium Trucks:	64.1	63.9	57.5	56.0	64.4	64.6
Heavy Trucks:	66.1	66.0	56.9	58.2	66.5	66.7
Vehicle Noise:	71.5	71.1	67.3	63.3	71.8	72.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	119	257	553
CNEL:	59	127	273	588

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYCP (2022) | Project Name: Goodman Logistics Center
Road Name: Kimberly Av. | Job Number: 13158
Road Segment: e/o Raymond Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,388 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	179 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	25 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	30.0 feet
Centerline Dist. to Observer:	30.0 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%	96.74%
Medium Trucks:	84.8%	4.9%	10.3%	2.21%
Heavy Trucks:	86.5%	2.7%	10.8%	1.05%

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:	27.726
Medium Trucks:	27.405
Heavy Trucks:	27.437

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-9.44	3.74	-1.20	-4.49	0.000	0.000
Medium Trucks:	79.45	-25.85	3.81	-1.20	-4.86	0.000	0.000
Heavy Trucks:	84.25	-29.10	3.81	-1.20	-5.77	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:	61.6	60.9	59.1	53.1	61.7	62.3
Medium Trucks:	56.2	55.9	49.6	48.0	56.5	56.7
Heavy Trucks:	57.8	57.6	48.5	49.8	58.1	58.3
Vehicle Noise:	63.9	63.4	59.9	55.6	64.1	64.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	26	56	122
CNEL:	13	28	60	130

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYCP (2022) | Project Name: Goodman Logistics Center
Road Name: Kimberly Av. | Job Number: 13158
Road Segment: e/o Dwy. 5

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,794 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	210 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	25 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	30.0 feet
Centerline Dist. to Observer:	30.0 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%	92.22%
Medium Trucks:	84.8%	4.9%	10.3%	4.16%
Heavy Trucks:	86.5%	2.7%	10.8%	3.62%

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:	27.726
Medium Trucks:	27.405
Heavy Trucks:	27.437

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-8.97	3.74	-1.20	-4.49	0.000	0.000
Medium Trucks:	79.45	-22.43	3.81	-1.20	-4.86	0.000	0.000
Heavy Trucks:	84.25	-23.03	3.81	-1.20	-5.77	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:	62.0	61.4	59.6	53.6	62.2	62.8
Medium Trucks:	59.6	59.4	53.0	51.5	59.9	60.2
Heavy Trucks:	63.8	63.6	54.6	55.9	64.2	64.3
Vehicle Noise:	66.9	66.6	61.5	58.8	67.2	67.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	42	91	196
CNEL:	21	44	95	205

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYCP (2022)
Road Name: Kimberly Av.
Road Segment: e/o Dwy. 11

Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,982 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	224 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	25 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	30.0 feet
Centerline Dist. to Observer:	30.0 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%	87.99%
Medium Trucks:	84.8%	4.9%	10.3%	5.97%
Heavy Trucks:	86.5%	2.7%	10.8%	6.04%

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:	27.726
Medium Trucks:	27.405
Heavy Trucks:	27.437

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-8.89	3.74	-1.20	*-4.49*	0.000	0.000
Medium Trucks:	79.45	-20.57	3.81	-1.20	*-4.86*	0.000	0.000
Heavy Trucks:	84.25	-20.52	3.81	-1.20	*-5.77*	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:	62.1	61.5	59.7	53.6	62.3	62.9
Medium Trucks:	61.5	61.2	54.9	53.3	61.8	62.0
Heavy Trucks:	66.3	66.2	57.1	58.4	66.7	66.9
Vehicle Noise:	68.7	68.4	62.4	60.5	69.0	69.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	26	55	119	256
CNEL:	27	57	124	266

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYCP (2022)
Road Name: Orangethorpe Av.
Road Segment: w/o Raymond Av.

Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,966 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,702 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.26%
Medium Trucks:	84.8%	4.9%	10.3%	2.51%
Heavy Trucks:	86.5%	2.7%	10.8%	1.23%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	2.83	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	77.72	-13.01	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-16.11	4.69	-1.20	*-5.43*	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:	72.7	72.1	70.3	64.3	72.9	73.5
Medium Trucks:	68.2	67.9	61.6	60.0	68.5	68.7
Heavy Trucks:	70.4	70.2	61.2	62.4	70.8	70.9
Vehicle Noise:	75.6	75.2	71.3	67.3	75.8	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	123	264	570	1,227
CNEL:	130	281	605	1,303

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYCP (2022)
Road Name: Orangethorpe Av.
Road Segment: e/o Raymond Av.

Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,397 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,584 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.14%
Medium Trucks:	84.8%	4.9%	10.3%	2.56%
Heavy Trucks:	86.5%	2.7%	10.8%	1.30%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	2.11	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	79.45	-13.64	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-16.58	4.69	-1.20	*-5.43*	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:	74.0	73.3	71.6	65.5	74.1	74.7
Medium Trucks:	69.3	69.1	62.7	61.1	69.6	69.8
Heavy Trucks:	71.2	71.0	62.0	63.2	71.6	71.7
Vehicle Noise:	76.7	76.2	72.5	68.4	76.9	77.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	145	312	672	1,448
CNEL:	154	332	715	1,541

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYCP (2022)
Road Name: Orangethorpe Av.
Road Segment: e/o Acacia Av.

Project Name: Goodman Logistics Center
Job Number: 13158

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,779 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,537 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	96.17%
Medium Trucks:	84.8%	4.9%	10.3%	2.55%
Heavy Trucks:	86.5%	2.7%	10.8%	1.29%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	2.04	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	79.45	-13.74	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-16.70	4.69	-1.20	*-5.43*	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:	73.9	73.2	71.5	65.4	74.0	74.7
Medium Trucks:	69.2	69.0	62.6	61.0	69.5	69.7
Heavy Trucks:	71.0	70.9	61.8	63.1	71.4	71.6
Vehicle Noise:	76.6	76.1	72.4	68.3	76.8	77.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	143	308	663	1,428
CNEL:	152	327	705	1,519

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYCP (2022) | Project Name: Goodman Logistics Center
Road Name: Orangethorpe Av. | Job Number: 13158
Road Segment: e/o Dwy. 6

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,767 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,537 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	95.98%
Medium Trucks:	84.8%	4.9%	10.3%	2.63%
Heavy Trucks:	86.5%	2.7%	10.8%	1.39%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.03	4.61	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-13.59	4.70	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-16.36	4.69	-1.20	-5.43	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:	73.9	73.2	71.5	65.4	74.0	74.6
Medium Trucks:	69.4	69.1	62.7	61.2	69.7	69.9
Heavy Trucks:	71.4	71.2	62.2	63.4	71.8	71.9
Vehicle Noise:	76.7	76.3	72.4	68.4	77.0	77.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	145	313	675	1,454
CNEL:	155	333	717	1,546

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYCP (2022) | Project Name: Goodman Logistics Center
Road Name: Orangethorpe Av. | Job Number: 13158
Road Segment: e/o Dwy. 10

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,790 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,538 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	95.58%
Medium Trucks:	84.8%	4.9%	10.3%	2.80%
Heavy Trucks:	86.5%	2.7%	10.8%	1.62%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.01	4.61	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-13.32	4.70	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-15.71	4.69	-1.20	-5.43	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:	73.9	73.2	71.5	65.4	74.0	74.6
Medium Trucks:	69.6	69.4	63.0	61.5	69.9	70.2
Heavy Trucks:	72.0	71.9	62.8	64.1	72.4	72.6
Vehicle Noise:	77.0	76.5	72.5	68.7	77.2	77.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	151	326	702	1,512
CNEL:	160	345	744	1,603

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYCP (2022) | Project Name: Goodman Logistics Center
Road Name: Orangethorpe Av. | Job Number: 13158
Road Segment: w/o N. State College Bl.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,175 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,567 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	95.39%
Medium Trucks:	84.8%	4.9%	10.3%	2.88%
Heavy Trucks:	86.5%	2.7%	10.8%	1.73%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.05	4.61	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-13.15	4.70	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-15.36	4.69	-1.20	-5.43	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:	73.9	73.3	71.5	65.4	74.1	74.7
Medium Trucks:	69.8	69.5	63.2	61.6	70.1	70.3
Heavy Trucks:	72.4	72.2	63.2	64.4	72.8	72.9
Vehicle Noise:	77.1	76.7	72.6	68.9	77.4	77.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	155	334	720	1,551
CNEL:	164	354	763	1,643

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYCP (2022) | Project Name: Goodman Logistics Center
Road Name: Orangethorpe Av. | Job Number: 13158
Road Segment: e/o N. State College Bl.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,007 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,480 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	95.65%
Medium Trucks:	84.8%	4.9%	10.3%	2.76%
Heavy Trucks:	86.5%	2.7%	10.8%	1.59%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.91	4.61	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-13.48	4.70	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-15.89	4.69	-1.20	-5.43	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	73.1	71.4	65.3	73.9	74.5
Medium Trucks:	69.5	69.2	62.8	61.3	69.8	70.0
Heavy Trucks:	71.9	71.7	62.6	63.9	72.3	72.4
Vehicle Noise:	76.8	76.4	72.4	68.6	77.1	77.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	148	319	687	1,480
CNEL:	157	338	729	1,570

Friday, May 15, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYCP (2022) | *Project Name:* Goodman Logistics Center
Road Name: Orangethorpe Av. | *Job Number:* 13158
Road Segment: w/o S. Placentia Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,541 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,369 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	88 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	50.0 feet
Centerline Dist. to Observer:	50.0 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%	95.62%
Medium Trucks:	84.8%	4.9%	10.3%	2.78%
Heavy Trucks:	86.5%	2.7%	10.8%	1.61%

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:	24.269
Medium Trucks:	23.902
Heavy Trucks:	23.938

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.71	4.61	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	79.45	-13.65	4.70	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-16.03	4.69	-1.20	*-5.43*	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:	73.6	72.9	71.2	65.1	73.7	74.3
Medium Trucks:	69.3	69.0	62.7	61.1	69.6	69.8
Heavy Trucks:	71.7	71.5	62.5	63.8	72.1	72.2
Vehicle Noise:	76.6	76.2	72.2	68.4	76.9	77.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	144	310	669	1,441
CNEL:	153	329	709	1,528

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYCP (2022) | *Project Name:* Goodman Logistics Center
Road Name: Orangethorpe Av. | *Job Number:* 13158
Road Segment: e/o S. Placentia Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,320 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,578 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	98 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%	95.66%
Medium Trucks:	84.8%	4.9%	10.3%	2.76%
Heavy Trucks:	86.5%	2.7%	10.8%	1.58%

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:	34.986
Medium Trucks:	34.732
Heavy Trucks:	34.757

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	2.08	2.22	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-13.31	2.27	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-15.75	2.27	-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:	71.6	70.9	69.1	63.1	71.7	72.3
Medium Trucks:	67.2	66.9	60.6	59.0	67.5	67.7
Heavy Trucks:	69.6	69.4	60.4	61.6	70.0	70.1
Vehicle Noise:	74.6	74.1	70.2	66.3	74.8	75.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	126	271	584	1,258
CNEL:	133	288	619	1,335

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYCP (2022) | *Project Name:* Goodman Logistics Center
Road Name: Orangethorpe Av. | *Job Number:* 13158
Road Segment: e/o SR-57 Southbound Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,199 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,794 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	98 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%	96.04%
Medium Trucks:	84.8%	4.9%	10.3%	2.60%
Heavy Trucks:	86.5%	2.7%	10.8%	1.35%

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:	34.986
Medium Trucks:	34.732
Heavy Trucks:	34.757

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	2.45	2.22	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-13.22	2.27	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-16.06	2.27	-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:	71.9	71.3	69.5	63.5	72.1	72.7
Medium Trucks:	67.3	67.0	60.7	59.1	67.6	67.8
Heavy Trucks:	69.3	69.1	60.0	61.3	69.7	69.8
Vehicle Noise:	74.7	74.2	70.5	66.4	74.9	75.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	128	275	594	1,279
CNEL:	136	293	631	1,360

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYCP (2022) | *Project Name:* Goodman Logistics Center
Road Name: Orangethorpe Av. | *Job Number:* 13158
Road Segment: e/o SR-57 Northbound Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,259 vehicles
Peak Hour Percentage:	7.51%
Peak Hour Volume:	2,874 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	98 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%	96.37%
Medium Trucks:	84.8%	4.9%	10.3%	2.47%
Heavy Trucks:	86.5%	2.7%	10.8%	1.17%

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:	34.986
Medium Trucks:	34.732
Heavy Trucks:	34.757

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	2.59	2.22	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-13.33	2.27	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-16.59	2.27	-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:	72.1	71.4	69.6	63.6	72.2	72.8
Medium Trucks:	67.2	66.9	60.6	59.0	67.5	67.7
Heavy Trucks:	68.7	68.6	59.5	60.8	69.1	69.2
Vehicle Noise:	74.6	74.1	70.5	66.3	74.8	75.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	126	271	585	1,260
CNEL:	134	289	623	1,342

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APPENDIX 9.1:

CADNAA OPERATIONAL NOISE MODEL INPUTS

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13158

CadnaA Noise Prediction Model: 13158-08.cna
Date: 09.07.20
Analyst: B. Lawson

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	40.0	39.8	46.5	55.0	50.0	0.0				5.00	a	6061255.06	2263602.19	5.00
RECEIVERS		R2	41.8	41.6	48.3	55.0	50.0	0.0				5.00	a	6062341.91	2263701.76	5.00
RECEIVERS		R3	36.6	35.6	42.2	55.0	50.0	0.0				5.00	a	6063844.21	2261916.65	5.00
RECEIVERS		R4	38.4	38.2	44.9	55.0	50.0	0.0				5.00	a	6064095.09	2263474.33	5.00
RECEIVERS		R5	35.9	35.2	41.9	55.0	50.0	0.0				5.00	a	6065023.95	2260526.54	5.00
RECEIVERS		R6	37.9	37.7	44.4	55.0	50.0	0.0				5.00	a	6062239.88	2259139.17	5.00
RECEIVERS		R7	35.7	34.3	41.1	55.0	50.0	0.0				5.00	a	6060360.59	2260263.12	5.00
RECEIVERS		R8	30.1	29.7	36.4	55.0	50.0	0.0				5.00	a	6060281.17	2261118.16	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		AC01	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6063870.82	2261495.90	60.00
POINTSOURCE		AC02	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6063869.09	2260933.40	60.00
POINTSOURCE		AC03	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6063412.49	2260551.46	60.00
POINTSOURCE		AC04	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6063424.64	2261499.38	60.00
POINTSOURCE		AC05	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6062876.03	2261442.08	60.00
POINTSOURCE		AC06	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6062865.61	2260556.67	60.00
POINTSOURCE		AC07	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6062558.32	2260560.14	60.00
POINTSOURCE		AC08	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6062561.79	2261469.86	60.00
POINTSOURCE		AC09	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6062011.45	2261471.60	60.00
POINTSOURCE		AC10	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6062006.24	2260565.35	60.00
POINTSOURCE		AC11	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6061745.82	2260547.99	60.00
POINTSOURCE		AC12	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6061759.71	2261478.54	60.00
POINTSOURCE		TRASH01	89.0	89.0	89.0	Lw	89		75.00	0.00	45.00	0.0	5.00	a	6061900.34	2260644.50	5.00
POINTSOURCE		TRASH02	89.0	89.0	89.0	Lw	89		75.00	0.00	45.00	0.0	5.00	a	6062718.04	2261395.21	5.00
POINTSOURCE		TRASH03	89.0	89.0	89.0	Lw	89		75.00	0.00	45.00	0.0	5.00	a	6063537.49	2261396.95	5.00
POINTSOURCE		TRASH04	89.0	89.0	89.0	Lw	89		75.00	0.00	45.00	0.0	5.00	a	6063512.20	2260636.70	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		DWY03	86.5	76.3	77.3	68.4	58.2	59.3	PWL-Pt	89.7					74.0	7.0	9.0	6.2	8
LINESOURCE		DWY04	86.4	76.2	77.3	68.4	58.2	59.3	PWL-Pt	89.7					74.0	7.0	9.0	6.2	8
LINESOURCE		DWY05	86.1	76.2	77.4	67.4	57.5	58.7	PWL-Pt	89.7					59.0	6.0	8.0	6.2	8
LINESOURCE		DWY06	86.6	76.2	78.0	67.9	57.5	59.3	PWL-Pt	89.7					66.0	6.0	9.0	6.2	8
LINESOURCE		DWY07	85.5	75.6	76.8	67.4	57.5	58.7	PWL-Pt	89.7					59.0	6.0	8.0	6.2	8
LINESOURCE		DWY08	86.4	76.2	77.3	68.4	58.2	59.3	PWL-Pt	89.7					74.0	7.0	9.0	6.2	8
LINESOURCE		DWY09	85.5	75.6	76.8	67.4	57.5	58.7	PWL-Pt	89.7					59.0	6.0	8.0	6.2	8
LINESOURCE		DWY10	86.5	76.2	77.3	68.4	58.2	59.3	PWL-Pt	89.7					74.0	7.0	9.0	6.2	8
LINESOURCE		DWY13	87.9	77.5	78.8	69.6	59.3	60.5	PWL-Pt	89.7					97.0	9.0	12.0	6.2	8
LINESOURCE		DWY13	86.2	75.9	77.1	69.6	59.3	60.5	PWL-Pt	89.7					97.0	9.0	12.0	6.2	8
LINESOURCE		DWY14	86.0	75.6	77.4	67.9	57.5	59.3	PWL-Pt	89.7					66.0	6.0	9.0	6.2	8
LINESOURCE		DWY16	87.4	76.5	78.7	65.4	54.5	56.7	PWL-Pt	89.7					37.0	3.0	5.0	6.2	8

Name	Height				Coordinates			
	Begin		End		x	y	z	Ground
	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
LINESOURCE	8.00	a			6061813.54	2261413.80	8.00	0.00
					6061824.00	2261625.22	8.00	0.00
LINESOURCE	8.00	a			6061813.53	2260631.70	8.00	0.00
					6061806.55	2260424.00	8.00	0.00
LINESOURCE	8.00	a			6061957.54	2261412.12	8.00	0.00
					6061961.10	2261553.20	8.00	0.00
					6062002.77	2261567.08	8.00	0.00
					6062006.28	2261623.98	8.00	0.00
LINESOURCE	8.00	a			6061943.76	2260631.32	8.00	0.00
					6061950.68	2260482.01	8.00	0.00
					6061997.56	2260469.86	8.00	0.00
					6061997.52	2260422.83	8.00	0.00
LINESOURCE	8.00	a			6062627.92	2261409.67	8.00	0.00
					6062629.56	2261619.75	8.00	0.00
LINESOURCE	8.00	a			6062617.35	2260627.79	8.00	0.00
					6062615.58	2260419.06	8.00	0.00
LINESOURCE	8.00	a			6062813.47	2261407.37	8.00	0.00
					6062813.57	2261618.50	8.00	0.00

Name	Height				Coordinates			
	Begin		End		x	y	z	Ground
	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
LINESOURCE	8.00	a			6062801.38	2260627.68	8.00	0.00
					6062801.35	2260417.92	8.00	0.00
LINESOURCE	8.00	a			6063481.90	2261406.94	8.00	0.00
					6063485.40	2261488.96	8.00	0.00
					6063527.07	2261544.51	8.00	0.00
					6063527.15	2261613.66	8.00	0.00
LINESOURCE	8.00	a			6063575.74	2261407.63	8.00	0.00
					6063567.00	2261494.17	8.00	0.00
					6063527.07	2261544.51	8.00	0.00
LINESOURCE	8.00	a			6063480.17	2260627.51	8.00	0.00
					6063478.40	2260413.79	8.00	0.00
LINESOURCE	8.00	a			6063563.80	2261021.20	8.00	0.00
					6063563.53	2260865.70	8.00	0.00
					6063846.52	2260857.01	8.00	0.00
					6063923.94	2260888.21	8.00	0.00

Area Source(s)

ID	Result. PWL			Result. PWL''			Lw / Li		Operating Time			Moving Pt. Src			Height
	Day	Evening	Night	Day	Evening	Night	Type	Value	Day	Special	Night	Number			
	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			(min)	(min)	(min)	Day	Evening	Night	(ft)
DOCK01	111.5	111.5	111.5	67.9	67.9	67.9	Lw	111.5							8
DOCK02	111.5	111.5	111.5	67.3	67.3	67.3	Lw	111.5							8
DOCK03	111.5	111.5	111.5	69.8	69.8	69.8	Lw	111.5							8

Name	Height				Coordinates			
	Begin		End		x	y	z	Ground
	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
AREASOURCE	8.00	a			6061730.58	2261414.77	8.00	0.00
					6062047.95	2261411.06	8.00	0.00
					6062036.85	2260631.05	8.00	0.00
					6061718.55	2260631.98	8.00	0.00
AREASOURCE	8.00	a			6062534.02	2261410.83	8.00	0.00
					6062901.42	2261406.28	8.00	0.00
					6062891.45	2260627.63	8.00	0.00
					6062528.81	2260627.85	8.00	0.00
AREASOURCE	8.00	a			6063391.93	2261406.28	8.00	0.00
					6063663.11	2261408.27	8.00	0.00
					6063659.13	2261019.44	8.00	0.00
					6063523.60	2261021.95	8.00	0.00
					6063517.86	2260627.85	8.00	0.00
					6063383.96	2260626.63	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)
BARRIERS		BARRIERS00001						6.00	a		6062001.08	2263672.42	6.00	0.00
											6062659.93	2263671.12	6.00	0.00
BARRIERS		BARRIERS00002						6.00	a		6064020.44	2263480.19	6.00	0.00
											6064050.12	2263449.98	6.00	0.00
											6064301.16	2263452.07	6.00	0.00

Building(s)

Name	M.	ID	RB	Residents	Absorption	Height		Coordinates			
						Begin		x	y	z	Ground
						(ft)		(ft)	(ft)	(ft)	(ft)
BUILDING		BUILDING01	x	0		55.00	a	6061435.41	2261535.05	55.00	0.00
								6061785.17	2261530.43	55.00	0.00
								6061788.87	2261413.84	55.00	0.00
								6061730.58	2261414.77	55.00	0.00
								6061718.55	2260631.98	55.00	0.00
								6061776.84	2260633.83	55.00	0.00
								6061773.14	2260508.91	55.00	0.00
								6061422.46	2260513.54	55.00	0.00
BUILDING		BUILDING02	x	0		55.00	a	6061991.51	2261519.32	55.00	0.00
								6062596.52	2261516.74	55.00	0.00
								6062598.25	2261409.10	55.00	0.00
								6062534.02	2261410.83	55.00	0.00
								6062528.81	2260627.85	55.00	0.00
								6062582.63	2260624.38	55.00	0.00
								6062582.63	2260521.95	55.00	0.00
								6061981.33	2260520.94	55.00	0.00
								6061976.70	2260630.13	55.00	0.00
								6062036.85	2260631.05	55.00	0.00

Name	M.	ID	RB	Residents	Absorption	Height		Coordinates			
						Begin		x	y	z	Ground
						(ft)		(ft)	(ft)	(ft)	(ft)
								6062047.95	2261411.06	55.00	0.00
								6061988.73	2261413.84	55.00	0.00
BUILDING		BUILDING03	x	0		55.00	a	6062851.57	2261471.08	55.00	0.00
								6063040.00	2261475.07	55.00	0.00
								6063038.00	2261526.91	55.00	0.00
								6063451.75	2261527.91	55.00	0.00
								6063453.75	2261406.28	55.00	0.00
								6063391.93	2261406.28	55.00	0.00
								6063383.96	2260626.63	55.00	0.00
								6063443.78	2260625.63	55.00	0.00
								6063439.79	2260514.97	55.00	0.00
								6062833.62	2260519.95	55.00	0.00
								6062834.62	2260627.63	55.00	0.00
								6062891.45	2260627.63	55.00	0.00
								6062901.42	2261406.28	55.00	0.00
								6062844.59	2261407.27	55.00	0.00
BUILDING		BUILDING04	x	0		55.00	a	6063605.29	2261524.92	55.00	0.00
								6063900.40	2261524.92	55.00	0.00
								6063891.42	2260904.79	55.00	0.00
								6063597.31	2260903.79	55.00	0.00
								6063600.30	2261020.44	55.00	0.00
								6063659.13	2261019.44	55.00	0.00
								6063663.11	2261408.27	55.00	0.00
								6063604.29	2261409.27	55.00	0.00
BUILDING		BUILDING00005	x	0		30.00	a	6062064.46	2260299.41	30.00	0.00
								6062291.31	2260301.96	30.00	0.00
								6062291.31	2259776.90	30.00	0.00
								6062059.36	2259779.44	30.00	0.00
BUILDING		BUILDING00006	x	0		30.00	a	6062371.60	2260161.77	30.00	0.00
								6062510.51	2260159.22	30.00	0.00
								6062509.23	2259863.56	30.00	0.00
								6062434.04	2259863.56	30.00	0.00
								6062436.59	2259818.95	30.00	0.00
								6062372.87	2259820.23	30.00	0.00
BUILDING		BUILDING00007	x	0		30.00	a	6062533.45	2260234.41	30.00	0.00
								6062680.01	2260235.69	30.00	0.00
								6062680.01	2260160.49	30.00	0.00
								6062537.27	2260159.22	30.00	0.00
BUILDING		BUILDING00008	x	0		30.00	a	6062715.69	2260296.86	30.00	0.00
								6062785.78	2260296.86	30.00	0.00
								6062787.06	2260161.77	30.00	0.00
								6062716.96	2260163.04	30.00	0.00
BUILDING		BUILDING00009	x	0		30.00	a	6061697.43	2260265.00	30.00	0.00
								6061898.79	2260259.90	30.00	0.00
								6061898.79	2259942.57	30.00	0.00
								6061937.02	2259937.47	30.00	0.00
								6061935.75	2259742.49	30.00	0.00
								6061692.33	2259738.66	30.00	0.00
BUILDING		BUILDING00010	x	0		30.00	a	6062166.42	2259583.18	30.00	0.00
								6062255.62	2259589.56	30.00	0.00
								6062260.72	2259612.50	30.00	0.00
								6062441.69	2259615.04	30.00	0.00
								6062440.42	2259226.35	30.00	0.00
								6062329.54	2259227.62	30.00	0.00
								6062324.44	2259282.42	30.00	0.00
								6062126.91	2259279.87	30.00	0.00
								6062132.01	2259524.56	30.00	0.00
								6062166.42	2259527.11	30.00	0.00
BUILDING		BUILDING00011	x	0		30.00	a	6061450.45	2260243.00	30.00	0.00
								6061569.53	2260243.00	30.00	0.00
								6061566.48	2259913.23	30.00	0.00
								6061446.37	2259912.21	30.00	0.00
BUILDING		BUILDING00012	x	0		30.00	a	6060586.32	2260166.67	30.00	0.00
								6060902.86	2260166.67	30.00	0.00
								6060901.84	2260207.38	30.00	0.00
								6060832.63	2260209.42	30.00	0.00
								6060832.63	2260277.61	30.00	0.00
								6061021.94	2260275.57	30.00	0.00
								6061019.91	2260206.36	30.00	0.00
								6060949.68	2260202.29	30.00	0.00
								6060950.70	2260168.70	30.00	0.00
								6061259.10	2260164.63	30.00	0.00
								6061261.13	2259867.43	30.00	0.00
								6060591.41	2259876.59	30.00	0.00
BUILDING		BUILDING00013	x	0		30.00	a	6060483.51	2261178.97	30.00	0.00
								6060633.86	2261178.97	30.00	0.00
								6060617.67	2260744.09	30.00	0.00

Name	M.	ID	RB	Residents	Absorption	Height		Coordinates			
						Begin		x	y	z	Ground
						(ft)		(ft)	(ft)	(ft)	(ft)
								6060344.71	2260740.62	30.00	0.00
								6060343.56	2261122.30	30.00	0.00
								6060483.51	2261122.30	30.00	0.00
BUILDING		BUILDING00014	x	0		30.00	a	6060739.12	2261209.04	30.00	0.00
								6061204.07	2261203.26	30.00	0.00
								6061200.60	2261089.91	30.00	0.00
								6060740.27	2261093.38	30.00	0.00
BUILDING		BUILDING00015	x	0		30.00	a	6060948.46	2261042.49	30.00	0.00
								6061209.85	2261037.86	30.00	0.00
								6061212.17	2260884.04	30.00	0.00
								6060947.30	2260881.72	30.00	0.00
BUILDING		BUILDING00016	x	0		30.00	a	6060874.44	2260740.62	30.00	0.00
								6061021.33	2260742.93	30.00	0.00
								6061024.80	2260525.49	30.00	0.00
								6060873.28	2260523.18	30.00	0.00
BUILDING		BUILDING00017	x	0		30.00	a	6061116.17	2260805.39	30.00	0.00
								6061243.39	2260808.86	30.00	0.00
								6061245.71	2260489.63	30.00	0.00
								6061115.01	2260497.73	30.00	0.00
BUILDING		BUILDING00018	x	0		30.00	a	6060676.66	2260910.64	30.00	0.00
								6060783.07	2260911.79	30.00	0.00
								6060778.44	2260851.65	30.00	0.00
								6060820.08	2260851.65	30.00	0.00
								6060822.39	2260523.18	30.00	0.00
								6060674.35	2260528.96	30.00	0.00
BUILDING		BUILDING00019	x	0		30.00	a	6060189.21	2262251.80	30.00	0.00
								6061240.61	2262248.13	30.00	0.00
								6061251.64	2261854.77	30.00	0.00
								6060200.24	2261862.13	30.00	0.00
BUILDING		BUILDING00020	x	0		30.00	a	6060946.51	2262909.85	30.00	0.00
								6061163.41	2262909.85	30.00	0.00
								6061159.73	2262854.70	30.00	0.00
								6061233.26	2262851.03	30.00	0.00
								6061229.58	2262564.28	30.00	0.00
								6061100.91	2262567.96	30.00	0.00
								6061082.53	2262663.54	30.00	0.00
								6060935.48	2262678.24	30.00	0.00
BUILDING		BUILDING00021	x	0		30.00	a	6061119.29	2263347.32	30.00	0.00
								6061233.26	2263347.32	30.00	0.00
								6061222.23	2263273.79	30.00	0.00
								6061115.62	2263273.79	30.00	0.00
BUILDING		BUILDING00022	x	0		30.00	a	6061134.00	2263211.30	30.00	0.00
								6061281.05	2263200.27	30.00	0.00
								6061273.69	2263130.42	30.00	0.00
								6061134.00	2263130.42	30.00	0.00
BUILDING		BUILDING00023	x	0		30.00	a	6061420.74	2263306.88	30.00	0.00
								6061501.62	2263420.84	30.00	0.00
								6061663.37	2263420.84	30.00	0.00
								6061652.34	2263148.80	30.00	0.00
								6061431.77	2263112.04	30.00	0.00
BUILDING		BUILDING00024	x	0		30.00	a	6061439.12	2262906.17	30.00	0.00
								6061575.14	2262898.82	30.00	0.00
								6061586.17	2262604.72	30.00	0.00
								6061450.15	2262597.37	30.00	0.00
BUILDING		BUILDING00025	x	0		30.00	a	6061453.83	2263593.62	30.00	0.00
								6061656.02	2263604.65	30.00	0.00
								6061659.70	2263461.28	30.00	0.00
								6061457.50	2263461.28	30.00	0.00
BUILDING		BUILDING00026	x	0		30.00	a	6061817.77	2263597.30	30.00	0.00
								6061994.23	2263593.62	30.00	0.00
								6061983.20	2263159.83	30.00	0.00
								6061821.45	2263163.50	30.00	0.00
BUILDING		BUILDING00027	x	0		30.00	a	6061670.72	2262869.41	30.00	0.00
								6061850.86	2262869.41	30.00	0.00
								6061854.54	2262567.96	30.00	0.00
								6061792.04	2262556.93	30.00	0.00
								6061670.72	2262656.19	30.00	0.00
BUILDING		BUILDING00028	x	0		30.00	a	6061997.91	2262942.93	30.00	0.00
								6062159.66	2262935.58	30.00	0.00
								6062148.63	2262454.00	30.00	0.00
								6061983.20	2262454.00	30.00	0.00
BUILDING		BUILDING00029	x	0		30.00	a	6062034.67	2263450.25	30.00	0.00
								6062196.42	2263453.93	30.00	0.00
								6062207.45	2263358.34	30.00	0.00
								6062810.35	2263350.99	30.00	0.00
								6062788.29	2263119.39	30.00	0.00
								6062019.96	2263126.74	30.00	0.00

Name	M.	ID	RB	Residents	Absorption	Height		Coordinates			
						Begin		x	y	z	Ground
						(ft)		(ft)	(ft)	(ft)	(ft)
BUILDING		BUILDING00030	x	0		30.00	a	6062273.62	2262880.44	30.00	0.00
								6062472.14	2262887.79	30.00	0.00
								6062490.52	2262454.00	30.00	0.00
								6062604.48	2262442.97	30.00	0.00
								6062644.92	2262876.76	30.00	0.00
								6062880.20	2262876.76	30.00	0.00
								6062880.20	2262347.39	30.00	0.00
								6062266.27	2262336.36	30.00	0.00
BUILDING		BUILDING00031	x	0		30.00	a	6062292.00	2262273.86	30.00	0.00
								6062865.49	2262266.51	30.00	0.00
								6062858.14	2261880.51	30.00	0.00
								6062336.12	2261854.77	30.00	0.00
BUILDING		BUILDING00032	x	0		30.00	a	6063035.13	2261936.74	30.00	0.00
								6063036.44	2261863.82	30.00	0.00
								6063764.30	2261865.13	30.00	0.00
								6063772.11	2262018.77	30.00	0.00
								6063838.52	2262016.17	30.00	0.00
								6063845.03	2261815.65	30.00	0.00
								6062997.37	2261824.76	30.00	0.00
								6062989.56	2261939.34	30.00	0.00
BUILDING		BUILDING00033	x	0		30.00	a	6064120.77	2262249.43	30.00	0.00
								6064692.12	2262253.35	30.00	0.00
								6064696.04	2261910.93	30.00	0.00
								6064122.73	2261895.27	30.00	0.00
BUILDING		BUILDING00034	x	0		30.00	a	6064065.98	2262417.71	30.00	0.00
								6064737.13	2262415.75	30.00	0.00
								6064739.08	2262319.87	30.00	0.00
								6064058.16	2262335.53	30.00	0.00
BUILDING		BUILDING00035	x	0		30.00	a	6064095.33	2262947.97	30.00	0.00
								6064656.90	2262942.10	30.00	0.00
								6064649.08	2262715.13	30.00	0.00
								6064155.99	2262738.61	30.00	0.00
BUILDING		BUILDING00036	x	0		30.00	a	6063670.73	2262924.49	30.00	0.00
								6063842.92	2262930.36	30.00	0.00
								6063840.96	2262783.61	30.00	0.00
								6063670.73	2262779.70	30.00	0.00
BUILDING		BUILDING00037	x	0		30.00	a	6063727.47	2262748.39	30.00	0.00
								6063844.88	2262746.43	30.00	0.00
								6063840.96	2262558.59	30.00	0.00
								6063729.43	2262562.50	30.00	0.00
BUILDING		BUILDING00038	x	0		30.00	a	6063731.39	2262468.58	30.00	0.00
								6063868.36	2262474.45	30.00	0.00
								6063862.49	2262325.74	30.00	0.00
								6063733.35	2262321.83	30.00	0.00
BUILDING		BUILDING00039	x	0		30.00	a	6064277.31	2263378.44	30.00	0.00
								6064353.62	2263382.36	30.00	0.00
								6064353.62	2263137.77	30.00	0.00
								6064275.35	2263141.68	30.00	0.00
BUILDING		BUILDING00040	x	0		30.00	a	6063643.34	2263546.72	30.00	0.00
								6063794.00	2263542.81	30.00	0.00
								6063788.13	2263169.08	30.00	0.00
								6063846.83	2263143.64	30.00	0.00
								6063848.79	2263096.68	30.00	0.00
								6063707.91	2263096.68	30.00	0.00
								6063696.17	2263368.66	30.00	0.00
								6063647.25	2263374.53	30.00	0.00
BUILDING		BUILDING00041	x	0		30.00	a	6064118.81	2262621.20	30.00	0.00
								6064206.86	2262621.20	30.00	0.00
								6064210.78	2262482.28	30.00	0.00
								6064120.77	2262480.32	30.00	0.00
BUILDING		BUILDING00042	x	0		30.00	a	6064072.47	2260874.72	30.00	0.00
								6064255.58	2260876.22	30.00	0.00
								6064252.58	2260775.67	30.00	0.00
								6064134.01	2260778.67	30.00	0.00
								6064129.51	2260822.19	30.00	0.00
								6064076.98	2260828.20	30.00	0.00
BUILDING		BUILDING00043	x	0		30.00	a	6064120.50	2260676.61	30.00	0.00
								6064257.08	2260679.61	30.00	0.00
								6064258.58	2260591.06	30.00	0.00
								6064125.00	2260589.56	30.00	0.00
BUILDING		BUILDING00044	x	0		30.00	a	6064143.01	2260492.00	30.00	0.00
								6064240.57	2260507.01	30.00	0.00
								6064233.07	2260443.97	30.00	0.00
								6064143.01	2260436.47	30.00	0.00
BUILDING		BUILDING00045	x	0		30.00	a	6064440.19	2260481.50	30.00	0.00
								6064549.75	2260478.49	30.00	0.00
								6064552.75	2260416.96	30.00	0.00

Name	M.	ID	RB	Residents	Absorption	Height		Coordinates			
						Begin		x	y	z	Ground
						(ft)		(ft)	(ft)	(ft)	(ft)
								6064444.69	2260418.46	30.00	0.00
BUILDING		BUILDING00046	x	0		30.00	a	6064788.39	2260558.04	30.00	0.00
								6064872.44	2260552.04	30.00	0.00
								6064866.43	2260433.47	30.00	0.00
								6064785.39	2260428.96	30.00	0.00
BUILDING		BUILDING00047	x	0		30.00	a	6064573.76	2260654.10	30.00	0.00
								6064689.33	2260651.09	30.00	0.00
								6064689.33	2260577.55	30.00	0.00
								6064764.38	2260571.55	30.00	0.00
								6064771.88	2260412.46	30.00	0.00
								6064725.35	2260415.46	30.00	0.00
								6064726.85	2260543.03	30.00	0.00
								6064549.75	2260547.53	30.00	0.00
BUILDING		BUILDING00048	x	0		30.00	a	6064079.98	2261596.64	30.00	0.00
								6064590.27	2261590.64	30.00	0.00
								6064590.27	2261575.63	30.00	0.00
								6065069.05	2261572.63	30.00	0.00
								6065070.55	2261134.37	30.00	0.00
								6064600.78	2261122.37	30.00	0.00
								6064591.78	2261192.91	30.00	0.00
								6064078.48	2261194.41	30.00	0.00
BUILDING		BUILDING00049	x	0		30.00	a	6063565.18	2260805.68	30.00	0.00
								6063926.89	2260805.68	30.00	0.00
								6063923.89	2260742.65	30.00	0.00
								6063665.74	2260744.15	30.00	0.00
								6063665.74	2260708.13	30.00	0.00
								6063572.68	2260709.63	30.00	0.00
BUILDING		BUILDING00050	x	0		30.00	a	6063562.18	2260685.61	30.00	0.00
								6063665.74	2260679.61	30.00	0.00
								6063667.24	2260658.60	30.00	0.00
								6063928.39	2260646.59	30.00	0.00
								6063922.39	2260591.06	30.00	0.00
								6063569.68	2260586.56	30.00	0.00

APPENDIX 10.1:

CADNAA CONSTRUCTION NOISE MODEL INPUTS

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13158

CadnaA Noise Prediction Model: 13158-08 ConcreteCrushing.cna
Date: 08.07.20
Analyst: B. Lawson

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	57.1	57.1	63.8	64.9	57.5	0.0				5.00	a	6061255.06	2263602.19	5.00
RECEIVERS		R2	55.6	55.6	62.2	64.9	57.5	0.0				5.00	a	6062341.91	2263701.76	5.00
RECEIVERS		R3	42.9	42.9	49.6	63.0	56.2	0.0				5.00	a	6063844.21	2261916.65	5.00
RECEIVERS		R4	55.1	55.1	61.7	65.4	59.8	0.0				5.00	a	6064095.09	2263474.33	5.00
RECEIVERS		R5	52.4	52.4	59.1	62.5	59.0	0.0				5.00	a	6065023.95	2260526.54	5.00
RECEIVERS		R6	51.7	51.7	58.4	60.0	60.0	0.0				5.00	a	6062239.88	2259139.17	5.00
RECEIVERS		R7	57.9	57.9	64.6	61.4	58.3	0.0				5.00	a	6060358.00	2260057.84	5.00
RECEIVERS		R8	46.3	46.3	52.9	54.8	50.6	0.0				5.00	a	6060281.17	2261118.16	5.00

Area Source(s)

ID	Result. PWL			Result. PWL''			Lw / Li		Operating Time			Moving Pt. Src			Height
	Day	Evening	Night	Day	Evening	Night	Type	Value	Day	Special	Night	Number			
	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			(min)	(min)	(min)	Day	Evening	Night	(ft)
0	127.5	127.5	127.5	83.0	83.0	83.0	Lw''	83							8

Name	Height			Coordinates			
	Begin		End	x	y	z	Ground
	(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
BATCH	8.00	a		6061781.99	2260774.57	8.00	0.00
				6061845.35	2260780.91	8.00	0.00
				6061853.81	2260779.03	8.00	0.00
				6061861.83	2260775.76	8.00	0.00
				6061869.19	2260771.20	8.00	0.00
				6061875.67	2260765.46	8.00	0.00
				6061881.11	2260758.71	8.00	0.00
				6061885.33	2260751.15	8.00	0.00
				6061888.22	2260742.98	8.00	0.00
				6061889.70	2260734.45	8.00	0.00
				6061895.89	2260746.22	8.00	0.00
				6061903.92	2260756.84	8.00	0.00
				6061913.57	2260766.00	8.00	0.00
				6061924.59	2260773.46	8.00	0.00
				6061936.67	2260779.03	8.00	0.00
				6061949.51	2260782.55	8.00	0.00
				6061962.74	2260783.93	8.00	0.00
				6061976.02	2260783.14	8.00	0.00
				6061989.00	2260780.19	8.00	0.00
				6062001.32	2260775.17	8.00	0.00
				6062012.66	2260768.20	8.00	0.00
				6062022.71	2260759.47	8.00	0.00
				6062031.20	2260749.23	8.00	0.00
				6062050.19	2260760.06	8.00	0.00
				6062070.22	2260768.84	8.00	0.00
				6062091.06	2260775.46	8.00	0.00
				6062112.48	2260779.87	8.00	0.00
				6062134.24	2260781.99	8.00	0.00
				6062156.11	2260781.83	8.00	0.00
				6062177.83	2260779.36	8.00	0.00
				6062199.18	2260774.63	8.00	0.00
				6062219.91	2260767.69	8.00	0.00
				6062239.80	2260758.60	8.00	0.00
				6062258.63	2260747.48	8.00	0.00
				6062276.18	2260734.45	8.00	0.00
				6062278.99	2260744.43	8.00	0.00
				6062283.46	2260753.80	8.00	0.00
				6062289.44	2260762.27	8.00	0.00
				6062296.78	2260769.61	8.00	0.00
				6062305.25	2260775.59	8.00	0.00
				6062314.62	2260780.05	8.00	0.00
				6062324.61	2260782.86	8.00	0.00
				6062334.93	2260783.93	8.00	0.00
				6062345.28	2260783.24	8.00	0.00
				6062355.36	2260780.80	8.00	0.00
				6062364.89	2260776.68	8.00	0.00
				6062380.07	2260774.73	8.00	0.00
				6062394.85	2260770.73	8.00	0.00
				6062408.94	2260764.76	8.00	0.00
				6062422.10	2260756.93	8.00	0.00
				6062434.07	2260747.38	8.00	0.00

Name	Height		Coordinates			
	Begin	End	x	y	z	Ground
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
			6062444.63	2260736.30	8.00	0.00
			6062453.59	2260723.89	8.00	0.00
			6062471.87	2260737.84	8.00	0.00
			6062491.59	2260749.66	8.00	0.00
			6062512.51	2260759.20	8.00	0.00
			6062534.37	2260766.34	8.00	0.00
			6062556.89	2260770.99	8.00	0.00
			6062579.79	2260773.09	8.00	0.00
			6062602.78	2260772.62	8.00	0.00
			6062625.58	2260769.58	8.00	0.00
			6062647.89	2260764.01	8.00	0.00
			6062659.88	2260765.80	8.00	0.00
			6062672.01	2260765.57	8.00	0.00
			6062683.93	2260763.32	8.00	0.00
			6062695.31	2260759.12	8.00	0.00
			6062705.83	2260753.08	8.00	0.00
			6062715.21	2260745.38	8.00	0.00
			6062723.17	2260736.23	8.00	0.00
			6062729.49	2260725.88	8.00	0.00
			6062734.01	2260714.62	8.00	0.00
			6062736.59	2260702.77	8.00	0.00
			6062743.77	2260706.84	8.00	0.00
			6062751.53	2260709.65	8.00	0.00
			6062759.65	2260711.11	8.00	0.00
			6062767.90	2260711.20	8.00	0.00
			6062776.05	2260709.90	8.00	0.00
			6062783.87	2260707.26	8.00	0.00
			6062791.13	2260703.34	8.00	0.00
			6062797.63	2260698.26	8.00	0.00
			6062803.19	2260692.16	8.00	0.00
			6062807.65	2260685.22	8.00	0.00
			6062810.89	2260677.62	8.00	0.00
			6062812.80	2260669.60	8.00	0.00
			6062813.34	2260661.36	8.00	0.00
			6062812.49	2260653.15	8.00	0.00
			6062810.28	2260645.20	8.00	0.00
			6062806.77	2260637.73	8.00	0.00
			6062802.06	2260630.96	8.00	0.00
			6062811.02	2260624.61	8.00	0.00
			6062818.77	2260616.82	8.00	0.00
			6062825.09	2260607.84	8.00	0.00
			6062829.80	2260597.91	8.00	0.00
			6062832.75	2260587.33	8.00	0.00
			6062833.86	2260576.40	8.00	0.00
			6062833.11	2260565.44	8.00	0.00
			6062830.51	2260554.77	8.00	0.00
			6062826.13	2260544.70	8.00	0.00
			6062820.11	2260535.51	8.00	0.00
			6062812.62	2260527.48	8.00	0.00
			6062806.17	2260518.74	8.00	0.00
			6062798.38	2260511.18	8.00	0.00
			6062789.47	2260504.98	8.00	0.00
			6062779.66	2260500.33	8.00	0.00
			6062769.23	2260497.34	8.00	0.00
			6062758.44	2260496.09	8.00	0.00
			6062747.60	2260496.61	8.00	0.00
			6062736.99	2260498.90	8.00	0.00
			6062726.89	2260502.89	8.00	0.00
			6062717.58	2260508.47	8.00	0.00
			6062709.14	2260496.72	8.00	0.00
			6062699.00	2260486.40	8.00	0.00
			6062687.42	2260477.73	8.00	0.00
			6062674.65	2260470.93	8.00	0.00
			6062661.00	2260466.15	8.00	0.00
			6062646.78	2260463.50	8.00	0.00
			6062632.32	2260463.04	8.00	0.00
			6062617.96	2260464.79	8.00	0.00
			6062604.04	2260468.70	8.00	0.00
			6062590.86	2260474.68	8.00	0.00
			6062569.04	2260472.97	8.00	0.00
			6062547.16	2260473.82	8.00	0.00
			6062525.53	2260477.21	8.00	0.00
			6062504.44	2260483.10	8.00	0.00
			6062484.18	2260491.41	8.00	0.00
			6062465.03	2260502.03	8.00	0.00
			6062447.25	2260514.80	8.00	0.00
			6062442.17	2260506.30	8.00	0.00

Name	Height		Coordinates			
	Begin	End	x	y	z	Ground
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
			6062435.78	2260498.72	8.00	0.00
			6062428.26	2260492.27	8.00	0.00
			6062419.79	2260487.12	8.00	0.00
			6062410.61	2260483.40	8.00	0.00
			6062400.95	2260481.20	8.00	0.00
			6062391.05	2260480.59	8.00	0.00
			6062381.19	2260481.58	8.00	0.00
			6062371.62	2260484.14	8.00	0.00
			6062362.59	2260488.21	8.00	0.00
			6062354.33	2260493.68	8.00	0.00
			6062334.26	2260489.36	8.00	0.00
			6062313.82	2260487.51	8.00	0.00
			6062293.30	2260488.18	8.00	0.00
			6062273.02	2260491.34	8.00	0.00
			6062253.28	2260496.95	8.00	0.00
			6062234.37	2260504.93	8.00	0.00
			6062216.57	2260515.15	8.00	0.00
			6062200.16	2260527.48	8.00	0.00
			6062186.52	2260518.27	8.00	0.00
			6062171.80	2260510.92	8.00	0.00
			6062156.24	2260505.57	8.00	0.00
			6062140.12	2260502.29	8.00	0.00
			6062123.71	2260501.15	8.00	0.00
			6062107.29	2260502.17	8.00	0.00
			6062091.14	2260505.33	8.00	0.00
			6062075.55	2260510.58	8.00	0.00
			6062057.34	2260500.53	8.00	0.00
			6062038.09	2260492.67	8.00	0.00
			6062018.05	2260487.11	8.00	0.00
			6061997.49	2260483.92	8.00	0.00
			6061976.71	2260483.15	8.00	0.00
			6061955.98	2260484.81	8.00	0.00
			6061935.58	2260488.88	8.00	0.00
			6061915.80	2260495.30	8.00	0.00
			6061896.90	2260503.98	8.00	0.00
			6061879.14	2260514.80	8.00	0.00
			6061867.15	2260512.53	8.00	0.00
			6061854.96	2260512.22	8.00	0.00
			6061842.87	2260513.89	8.00	0.00
			6061831.21	2260517.48	8.00	0.00
			6061820.29	2260522.92	8.00	0.00
			6061810.39	2260530.05	8.00	0.00
			6061801.77	2260538.68	8.00	0.00
			6061794.66	2260548.59	8.00	0.00
			6061780.44	2260543.00	8.00	0.00
			6061765.54	2260539.59	8.00	0.00
			6061750.30	2260538.44	8.00	0.00
			6061735.06	2260539.59	8.00	0.00
			6061720.16	2260543.00	8.00	0.00
			6061705.94	2260548.60	8.00	0.00
			6061692.72	2260556.27	8.00	0.00
			6061680.79	2260565.82	8.00	0.00
			6061670.43	2260577.06	8.00	0.00
			6061661.86	2260589.71	8.00	0.00
			6061655.27	2260603.51	8.00	0.00
			6061649.62	2260614.09	8.00	0.00
			6061645.81	2260625.47	8.00	0.00
			6061643.95	2260637.32	8.00	0.00
			6061644.08	2260649.32	8.00	0.00
			6061646.21	2260661.13	8.00	0.00
			6061650.28	2260672.42	8.00	0.00
			6061656.17	2260682.88	8.00	0.00
			6061663.72	2260692.21	8.00	0.00
			6061663.93	2260706.64	8.00	0.00
			6061666.61	2260720.83	8.00	0.00
			6061671.68	2260734.34	8.00	0.00
			6061679.00	2260746.78	8.00	0.00
			6061688.34	2260757.79	8.00	0.00
			6061699.43	2260767.03	8.00	0.00
			6061711.94	2260774.23	8.00	0.00
			6061725.50	2260779.17	8.00	0.00
			6061739.71	2260781.72	8.00	0.00
			6061754.15	2260781.79	8.00	0.00
			6061768.38	2260779.38	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)
BARRIERS		BARRIERS00001						6.00	a		6062001.08	2263672.42	6.00	0.00
											6062659.93	2263671.12	6.00	0.00
BARRIERS		BARRIERS00002						6.00	a		6064020.44	2263480.19	6.00	0.00
											6064050.12	2263449.98	6.00	0.00
											6064301.16	2263452.07	6.00	0.00

Building(s)

Name	M.	ID	RB	Residents	Absorption	Height		Coordinates			
						Begin		x	y	z	Ground
						(ft)		(ft)	(ft)	(ft)	(ft)
BUILDING		BUILDING00005	x	0		30.00	a	6062064.46	2260299.41	30.00	0.00
								6062291.31	2260301.96	30.00	0.00
								6062291.31	2259776.90	30.00	0.00
								6062059.36	2259779.44	30.00	0.00
BUILDING		BUILDING00006	x	0		30.00	a	6062371.60	2260161.77	30.00	0.00
								6062510.51	2260159.22	30.00	0.00
								6062509.23	2259863.56	30.00	0.00
								6062434.04	2259863.56	30.00	0.00
								6062436.59	2259818.95	30.00	0.00
								6062372.87	2259820.23	30.00	0.00
BUILDING		BUILDING00007	x	0		30.00	a	6062533.45	2260234.41	30.00	0.00
								6062680.01	2260235.69	30.00	0.00
								6062680.01	2260160.49	30.00	0.00
								6062537.27	2260159.22	30.00	0.00
BUILDING		BUILDING00008	x	0		30.00	a	6062715.69	2260296.86	30.00	0.00
								6062785.78	2260296.86	30.00	0.00
								6062787.06	2260161.77	30.00	0.00
								6062716.96	2260163.04	30.00	0.00
BUILDING		BUILDING00009	x	0		30.00	a	6061697.43	2260265.00	30.00	0.00
								6061898.79	2260259.90	30.00	0.00
								6061898.79	2259942.57	30.00	0.00
								6061937.02	2259937.47	30.00	0.00
								6061935.75	2259742.49	30.00	0.00
								6061692.33	2259738.66	30.00	0.00
BUILDING		BUILDING00010	x	0		30.00	a	6062166.42	2259583.18	30.00	0.00
								6062255.62	2259589.56	30.00	0.00
								6062260.72	2259612.50	30.00	0.00
								6062441.69	2259615.04	30.00	0.00
								6062440.42	2259226.35	30.00	0.00
								6062329.54	2259227.62	30.00	0.00
								6062324.44	2259282.42	30.00	0.00
								6062126.91	2259279.87	30.00	0.00
								6062132.01	2259524.56	30.00	0.00
								6062166.42	2259527.11	30.00	0.00
BUILDING		BUILDING00011	x	0		30.00	a	6061450.45	2260243.00	30.00	0.00
								6061569.53	2260243.00	30.00	0.00
								6061566.48	2259913.23	30.00	0.00
								6061446.37	2259912.21	30.00	0.00
BUILDING		BUILDING00012	x	0		30.00	a	6060586.32	2260166.67	30.00	0.00
								6060902.86	2260166.67	30.00	0.00
								6060901.84	2260207.38	30.00	0.00
								6060832.63	2260209.42	30.00	0.00
								6060832.63	2260277.61	30.00	0.00
								6061021.94	2260275.57	30.00	0.00
								6061019.91	2260206.36	30.00	0.00
								6060949.68	2260202.29	30.00	0.00
								6060950.70	2260168.70	30.00	0.00
								6061259.10	2260164.63	30.00	0.00
								6061261.13	2259867.43	30.00	0.00
								6060591.41	2259876.59	30.00	0.00
BUILDING		BUILDING00013	x	0		30.00	a	6060483.51	2261178.97	30.00	0.00
								6060633.86	2261178.97	30.00	0.00
								6060617.67	2260744.09	30.00	0.00
								6060344.71	2260740.62	30.00	0.00
								6060343.56	2261122.30	30.00	0.00
								6060483.51	2261122.30	30.00	0.00
BUILDING		BUILDING00014	x	0		30.00	a	6060739.12	2261209.04	30.00	0.00
								6061204.07	2261203.26	30.00	0.00
								6061200.60	2261089.91	30.00	0.00
								6060740.27	2261093.38	30.00	0.00
BUILDING		BUILDING00015	x	0		30.00	a	6060948.46	2261042.49	30.00	0.00
								6061209.85	2261037.86	30.00	0.00
								6061212.17	2260884.04	30.00	0.00
								6060947.30	2260881.72	30.00	0.00
BUILDING		BUILDING00016	x	0		30.00	a	6060874.44	2260740.62	30.00	0.00
								6061021.33	2260742.93	30.00	0.00

Name	M.	ID	RB	Residents	Absorption	Height		Coordinates			
						Begin		x	y	z	Ground
						(ft)		(ft)	(ft)	(ft)	(ft)
								6061024.80	2260525.49	30.00	0.00
								6060873.28	2260523.18	30.00	0.00
BUILDING		BUILDING00017	x	0		30.00	a	6061116.17	2260805.39	30.00	0.00
								6061243.39	2260808.86	30.00	0.00
								6061245.71	2260489.63	30.00	0.00
								6061115.01	2260497.73	30.00	0.00
BUILDING		BUILDING00018	x	0		30.00	a	6060676.66	2260910.64	30.00	0.00
								6060783.07	2260911.79	30.00	0.00
								6060778.44	2260851.65	30.00	0.00
								6060820.08	2260851.65	30.00	0.00
								6060822.39	2260523.18	30.00	0.00
								6060674.35	2260528.96	30.00	0.00
BUILDING		BUILDING00019	x	0		30.00	a	6060189.21	2262251.80	30.00	0.00
								6061240.61	2262248.13	30.00	0.00
								6061251.64	2261854.77	30.00	0.00
								6060200.24	2261862.13	30.00	0.00
BUILDING		BUILDING00020	x	0		30.00	a	6060946.51	2262909.85	30.00	0.00
								6061163.41	2262909.85	30.00	0.00
								6061159.73	2262854.70	30.00	0.00
								6061233.26	2262851.03	30.00	0.00
								6061229.58	2262564.28	30.00	0.00
								6061100.91	2262567.96	30.00	0.00
								6061082.53	2262663.54	30.00	0.00
								6060935.48	2262678.24	30.00	0.00
BUILDING		BUILDING00021	x	0		30.00	a	6061119.29	2263347.32	30.00	0.00
								6061233.26	2263347.32	30.00	0.00
								6061222.23	2263273.79	30.00	0.00
								6061115.62	2263273.79	30.00	0.00
BUILDING		BUILDING00022	x	0		30.00	a	6061134.00	2263211.30	30.00	0.00
								6061281.05	2263200.27	30.00	0.00
								6061273.69	2263130.42	30.00	0.00
								6061134.00	2263130.42	30.00	0.00
BUILDING		BUILDING00023	x	0		30.00	a	6061420.74	2263306.88	30.00	0.00
								6061501.62	2263420.84	30.00	0.00
								6061663.37	2263420.84	30.00	0.00
								6061652.34	2263148.80	30.00	0.00
								6061431.77	2263112.04	30.00	0.00
BUILDING		BUILDING00024	x	0		30.00	a	6061439.12	2262906.17	30.00	0.00
								6061575.14	2262898.82	30.00	0.00
								6061586.17	2262604.72	30.00	0.00
								6061450.15	2262597.37	30.00	0.00
BUILDING		BUILDING00025	x	0		30.00	a	6061453.83	2263593.62	30.00	0.00
								6061656.02	2263604.65	30.00	0.00
								6061659.70	2263461.28	30.00	0.00
								6061457.50	2263461.28	30.00	0.00
BUILDING		BUILDING00026	x	0		30.00	a	6061817.77	2263597.30	30.00	0.00
								6061994.23	2263593.62	30.00	0.00
								6061983.20	2263159.83	30.00	0.00
								6061821.45	2263163.50	30.00	0.00
BUILDING		BUILDING00027	x	0		30.00	a	6061670.72	2262869.41	30.00	0.00
								6061850.86	2262869.41	30.00	0.00
								6061854.54	2262567.96	30.00	0.00
								6061792.04	2262556.93	30.00	0.00
								6061670.72	2262656.19	30.00	0.00
BUILDING		BUILDING00028	x	0		30.00	a	6061997.91	2262942.93	30.00	0.00
								6062159.66	2262935.58	30.00	0.00
								6062148.63	2262454.00	30.00	0.00
								6061983.20	2262454.00	30.00	0.00
BUILDING		BUILDING00029	x	0		30.00	a	6062034.67	2263450.25	30.00	0.00
								6062196.42	2263453.93	30.00	0.00
								6062207.45	2263358.34	30.00	0.00
								6062810.35	2263350.99	30.00	0.00
								6062788.29	2263119.39	30.00	0.00
								6062019.96	2263126.74	30.00	0.00
BUILDING		BUILDING00030	x	0		30.00	a	6062273.62	2262880.44	30.00	0.00
								6062472.14	2262887.79	30.00	0.00
								6062490.52	2262454.00	30.00	0.00
								6062604.48	2262442.97	30.00	0.00
								6062644.92	2262876.76	30.00	0.00
								6062880.20	2262876.76	30.00	0.00
								6062880.20	2262347.39	30.00	0.00
								6062266.27	2262336.36	30.00	0.00
BUILDING		BUILDING00031	x	0		30.00	a	6062292.00	2262273.86	30.00	0.00
								6062865.49	2262266.51	30.00	0.00
								6062858.14	2261880.51	30.00	0.00
								6062336.12	2261854.77	30.00	0.00
BUILDING		BUILDING00032	x	0		30.00	a	6063035.13	2261936.74	30.00	0.00

Name	M.	ID	RB	Residents	Absorption	Height		Coordinates			
						Begin		x	y	z	Ground
						(ft)		(ft)	(ft)	(ft)	(ft)
								6063036.44	2261863.82	30.00	0.00
								6063764.30	2261865.13	30.00	0.00
								6063772.11	2262018.77	30.00	0.00
								6063838.52	2262016.17	30.00	0.00
								6063845.03	2261815.65	30.00	0.00
								6062997.37	2261824.76	30.00	0.00
								6062989.56	2261939.34	30.00	0.00
BUILDING		BUILDING00033	x	0		30.00	a	6064120.77	2262249.43	30.00	0.00
								6064692.12	2262253.35	30.00	0.00
								6064696.04	2261910.93	30.00	0.00
								6064122.73	2261895.27	30.00	0.00
BUILDING		BUILDING00034	x	0		30.00	a	6064065.98	2262417.71	30.00	0.00
								6064737.13	2262415.75	30.00	0.00
								6064739.08	2262319.87	30.00	0.00
								6064058.16	2262335.53	30.00	0.00
BUILDING		BUILDING00035	x	0		30.00	a	6064095.33	2262947.97	30.00	0.00
								6064656.90	2262942.10	30.00	0.00
								6064649.08	2262715.13	30.00	0.00
								6064155.99	2262738.61	30.00	0.00
BUILDING		BUILDING00036	x	0		30.00	a	6063670.73	2262924.49	30.00	0.00
								6063842.92	2262930.36	30.00	0.00
								6063840.96	2262783.61	30.00	0.00
								6063670.73	2262779.70	30.00	0.00
BUILDING		BUILDING00037	x	0		30.00	a	6063727.47	2262748.39	30.00	0.00
								6063844.88	2262746.43	30.00	0.00
								6063840.96	2262558.59	30.00	0.00
								6063729.43	2262562.50	30.00	0.00
BUILDING		BUILDING00038	x	0		30.00	a	6063731.39	2262468.58	30.00	0.00
								6063868.36	2262474.45	30.00	0.00
								6063862.49	2262325.74	30.00	0.00
								6063733.35	2262321.83	30.00	0.00
BUILDING		BUILDING00039	x	0		30.00	a	6064277.31	2263378.44	30.00	0.00
								6064353.62	2263382.36	30.00	0.00
								6064353.62	2263137.77	30.00	0.00
								6064275.35	2263141.68	30.00	0.00
BUILDING		BUILDING00040	x	0		30.00	a	6063643.34	2263546.72	30.00	0.00
								6063794.00	2263542.81	30.00	0.00
								6063788.13	2263169.08	30.00	0.00
								6063846.83	2263143.64	30.00	0.00
								6063848.79	2263096.68	30.00	0.00
								6063707.91	2263096.68	30.00	0.00
								6063696.17	2263368.66	30.00	0.00
								6063647.25	2263374.53	30.00	0.00
BUILDING		BUILDING00041	x	0		30.00	a	6064118.81	2262621.20	30.00	0.00
								6064206.86	2262621.20	30.00	0.00
								6064210.78	2262482.28	30.00	0.00
								6064120.77	2262480.32	30.00	0.00
BUILDING		BUILDING00042	x	0		30.00	a	6064072.47	2260874.72	30.00	0.00
								6064255.58	2260876.22	30.00	0.00
								6064252.58	2260775.67	30.00	0.00
								6064134.01	2260778.67	30.00	0.00
								6064129.51	2260822.19	30.00	0.00
								6064076.98	2260828.20	30.00	0.00
BUILDING		BUILDING00043	x	0		30.00	a	6064120.50	2260676.61	30.00	0.00
								6064257.08	2260679.61	30.00	0.00
								6064258.58	2260591.06	30.00	0.00
								6064125.00	2260589.56	30.00	0.00
BUILDING		BUILDING00044	x	0		30.00	a	6064143.01	2260492.00	30.00	0.00
								6064240.57	2260507.01	30.00	0.00
								6064233.07	2260443.97	30.00	0.00
								6064143.01	2260436.47	30.00	0.00
BUILDING		BUILDING00045	x	0		30.00	a	6064440.19	2260481.50	30.00	0.00
								6064549.75	2260478.49	30.00	0.00
								6064552.75	2260416.96	30.00	0.00
								6064444.69	2260418.46	30.00	0.00
BUILDING		BUILDING00046	x	0		30.00	a	6064788.39	2260558.04	30.00	0.00
								6064872.44	2260552.04	30.00	0.00
								6064866.43	2260433.47	30.00	0.00
								6064785.39	2260428.96	30.00	0.00
BUILDING		BUILDING00047	x	0		30.00	a	6064573.76	2260654.10	30.00	0.00
								6064689.33	2260651.09	30.00	0.00
								6064689.33	2260577.55	30.00	0.00
								6064764.38	2260571.55	30.00	0.00
								6064771.88	2260412.46	30.00	0.00
								6064725.35	2260415.46	30.00	0.00
								6064726.85	2260543.03	30.00	0.00
								6064549.75	2260547.53	30.00	0.00

Name	M.	ID	RB	Residents	Absorption	Height		Coordinates			
						Begin		x	y	z	Ground
						(ft)		(ft)	(ft)	(ft)	(ft)
BUILDING		BUILDING00048	x	0		30.00	a	6064079.98	2261596.64	30.00	0.00
								6064590.27	2261590.64	30.00	0.00
								6064590.27	2261575.63	30.00	0.00
								6065069.05	2261572.63	30.00	0.00
								6065070.55	2261134.37	30.00	0.00
								6064600.78	2261122.37	30.00	0.00
								6064591.78	2261192.91	30.00	0.00
								6064078.48	2261194.41	30.00	0.00
BUILDING		BUILDING00049	x	0		30.00	a	6063565.18	2260805.68	30.00	0.00
								6063926.89	2260805.68	30.00	0.00
								6063923.89	2260742.65	30.00	0.00
								6063665.74	2260744.15	30.00	0.00
								6063665.74	2260708.13	30.00	0.00
								6063572.68	2260709.63	30.00	0.00
BUILDING		BUILDING00050	x	0		30.00	a	6063562.18	2260685.61	30.00	0.00
								6063665.74	2260679.61	30.00	0.00
								6063667.24	2260658.60	30.00	0.00
								6063928.39	2260646.59	30.00	0.00
								6063922.39	2260591.06	30.00	0.00
								6063569.68	2260586.56	30.00	0.00
BUILDING		BUILDING00051	x	0		30.00	a	6060930.72	2260524.05	30.00	0.00
								6061014.79	2260525.34	30.00	0.00
								6061015.99	2260474.08	30.00	0.00
								6060929.50	2260474.08	30.00	0.00
BUILDING		BUILDING00052	x	0		30.00	a	6060682.08	2260528.66	30.00	0.00
								6060815.86	2260523.43	30.00	0.00
								6060815.52	2260498.69	30.00	0.00
								6060756.95	2260499.37	30.00	0.00
								6060756.28	2260474.32	30.00	0.00
								6060680.79	2260473.98	30.00	0.00
BUILDING		BUILDING00053	x	0		30.00	a	6060395.85	2260598.02	30.00	0.00
								6060604.59	2260600.60	30.00	0.00
								6060602.52	2260458.00	30.00	0.00
								6060518.82	2260455.42	30.00	0.00
								6060517.79	2260519.49	30.00	0.00
								6060395.34	2260524.14	30.00	0.00
BUILDING		BUILDING00054	x	0		30.00	a	6060898.61	2261586.33	30.00	0.00
								6061182.72	2261585.54	30.00	0.00
								6061182.72	2261331.50	30.00	0.00
								6060895.44	2261329.13	30.00	0.00
BUILDING		BUILDING00055	x	0		30.00	a	6060704.72	2261584.75	30.00	0.00
								6060766.45	2261587.92	30.00	0.00
								6060764.07	2261337.04	30.00	0.00
								6060704.72	2261337.83	30.00	0.00
BUILDING		BUILDING00056	x	0		30.00	a	6060542.48	2261614.82	30.00	0.00
								6060639.03	2261613.24	30.00	0.00
								6060640.61	2261533.31	30.00	0.00
								6060540.90	2261534.89	30.00	0.00
BUILDING		BUILDING00057	x	0		30.00	a	6060543.27	2261481.87	30.00	0.00
								6060638.24	2261481.08	30.00	0.00
								6060639.82	2261295.89	30.00	0.00
								6060543.27	2261295.89	30.00	0.00

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APPENDIX 10.2:

CADNAA CONCRETE CRUSHING CONSTRUCTION NOISE MODEL INPUTS

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13158

CadnaA Noise Prediction Model: 13158-08 ConcreteCrushing.cna
Date: 08.07.20
Analyst: B. Lawson

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	57.1	57.1	63.8	64.9	57.5	0.0				5.00	a	6061255.06	2263602.19	5.00
RECEIVERS		R2	55.6	55.6	62.2	64.9	57.5	0.0				5.00	a	6062341.91	2263701.76	5.00
RECEIVERS		R3	42.9	42.9	49.6	63.0	56.2	0.0				5.00	a	6063844.21	2261916.65	5.00
RECEIVERS		R4	55.1	55.1	61.7	65.4	59.8	0.0				5.00	a	6064095.09	2263474.33	5.00
RECEIVERS		R5	52.4	52.4	59.1	62.5	59.0	0.0				5.00	a	6065023.95	2260526.54	5.00
RECEIVERS		R6	51.7	51.7	58.4	60.0	60.0	0.0				5.00	a	6062239.88	2259139.17	5.00
RECEIVERS		R7	57.9	57.9	64.6	61.4	58.3	0.0				5.00	a	6060358.00	2260057.84	5.00
RECEIVERS		R8	46.3	46.3	52.9	54.8	50.6	0.0				5.00	a	6060281.17	2261118.16	5.00

Area Source(s)

ID	Result. PWL			Result. PWL''			Lw / Li		Operating Time			Moving Pt. Src			Height
	Day	Evening	Night	Day	Evening	Night	Type	Value	Day	Special	Night	Number			
	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			(min)	(min)	(min)	Day	Evening	Night	(ft)
0	127.5	127.5	127.5	83.0	83.0	83.0	Lw''	83							8

Name	Height			Coordinates			
	Begin		End	x	y	z	Ground
	(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
BATCH	8.00	a		6061781.99	2260774.57	8.00	0.00
				6061845.35	2260780.91	8.00	0.00
				6061853.81	2260779.03	8.00	0.00
				6061861.83	2260775.76	8.00	0.00
				6061869.19	2260771.20	8.00	0.00
				6061875.67	2260765.46	8.00	0.00
				6061881.11	2260758.71	8.00	0.00
				6061885.33	2260751.15	8.00	0.00
				6061888.22	2260742.98	8.00	0.00
				6061889.70	2260734.45	8.00	0.00
				6061895.89	2260746.22	8.00	0.00
				6061903.92	2260756.84	8.00	0.00
				6061913.57	2260766.00	8.00	0.00
				6061924.59	2260773.46	8.00	0.00
				6061936.67	2260779.03	8.00	0.00
				6061949.51	2260782.55	8.00	0.00
				6061962.74	2260783.93	8.00	0.00
				6061976.02	2260783.14	8.00	0.00
				6061989.00	2260780.19	8.00	0.00
				6062001.32	2260775.17	8.00	0.00
				6062012.66	2260768.20	8.00	0.00
				6062022.71	2260759.47	8.00	0.00
				6062031.20	2260749.23	8.00	0.00
				6062050.19	2260760.06	8.00	0.00
				6062070.22	2260768.84	8.00	0.00
				6062091.06	2260775.46	8.00	0.00
				6062112.48	2260779.87	8.00	0.00
				6062134.24	2260781.99	8.00	0.00
				6062156.11	2260781.83	8.00	0.00
				6062177.83	2260779.36	8.00	0.00
				6062199.18	2260774.63	8.00	0.00
				6062219.91	2260767.69	8.00	0.00
				6062239.80	2260758.60	8.00	0.00
				6062258.63	2260747.48	8.00	0.00
				6062276.18	2260734.45	8.00	0.00
				6062278.99	2260744.43	8.00	0.00
				6062283.46	2260753.80	8.00	0.00
				6062289.44	2260762.27	8.00	0.00
				6062296.78	2260769.61	8.00	0.00
				6062305.25	2260775.59	8.00	0.00
				6062314.62	2260780.05	8.00	0.00
				6062324.61	2260782.86	8.00	0.00
				6062334.93	2260783.93	8.00	0.00
				6062345.28	2260783.24	8.00	0.00
				6062355.36	2260780.80	8.00	0.00
				6062364.89	2260776.68	8.00	0.00
				6062380.07	2260774.73	8.00	0.00
				6062394.85	2260770.73	8.00	0.00
				6062408.94	2260764.76	8.00	0.00
				6062422.10	2260756.93	8.00	0.00
				6062434.07	2260747.38	8.00	0.00

Name	Height		Coordinates			
	Begin	End	x	y	z	Ground
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
			6062444.63	2260736.30	8.00	0.00
			6062453.59	2260723.89	8.00	0.00
			6062471.87	2260737.84	8.00	0.00
			6062491.59	2260749.66	8.00	0.00
			6062512.51	2260759.20	8.00	0.00
			6062534.37	2260766.34	8.00	0.00
			6062556.89	2260770.99	8.00	0.00
			6062579.79	2260773.09	8.00	0.00
			6062602.78	2260772.62	8.00	0.00
			6062625.58	2260769.58	8.00	0.00
			6062647.89	2260764.01	8.00	0.00
			6062659.88	2260765.80	8.00	0.00
			6062672.01	2260765.57	8.00	0.00
			6062683.93	2260763.32	8.00	0.00
			6062695.31	2260759.12	8.00	0.00
			6062705.83	2260753.08	8.00	0.00
			6062715.21	2260745.38	8.00	0.00
			6062723.17	2260736.23	8.00	0.00
			6062729.49	2260725.88	8.00	0.00
			6062734.01	2260714.62	8.00	0.00
			6062736.59	2260702.77	8.00	0.00
			6062743.77	2260706.84	8.00	0.00
			6062751.53	2260709.65	8.00	0.00
			6062759.65	2260711.11	8.00	0.00
			6062767.90	2260711.20	8.00	0.00
			6062776.05	2260709.90	8.00	0.00
			6062783.87	2260707.26	8.00	0.00
			6062791.13	2260703.34	8.00	0.00
			6062797.63	2260698.26	8.00	0.00
			6062803.19	2260692.16	8.00	0.00
			6062807.65	2260685.22	8.00	0.00
			6062810.89	2260677.62	8.00	0.00
			6062812.80	2260669.60	8.00	0.00
			6062813.34	2260661.36	8.00	0.00
			6062812.49	2260653.15	8.00	0.00
			6062810.28	2260645.20	8.00	0.00
			6062806.77	2260637.73	8.00	0.00
			6062802.06	2260630.96	8.00	0.00
			6062811.02	2260624.61	8.00	0.00
			6062818.77	2260616.82	8.00	0.00
			6062825.09	2260607.84	8.00	0.00
			6062829.80	2260597.91	8.00	0.00
			6062832.75	2260587.33	8.00	0.00
			6062833.86	2260576.40	8.00	0.00
			6062833.11	2260565.44	8.00	0.00
			6062830.51	2260554.77	8.00	0.00
			6062826.13	2260544.70	8.00	0.00
			6062820.11	2260535.51	8.00	0.00
			6062812.62	2260527.48	8.00	0.00
			6062806.17	2260518.74	8.00	0.00
			6062798.38	2260511.18	8.00	0.00
			6062789.47	2260504.98	8.00	0.00
			6062779.66	2260500.33	8.00	0.00
			6062769.23	2260497.34	8.00	0.00
			6062758.44	2260496.09	8.00	0.00
			6062747.60	2260496.61	8.00	0.00
			6062736.99	2260498.90	8.00	0.00
			6062726.89	2260502.89	8.00	0.00
			6062717.58	2260508.47	8.00	0.00
			6062709.14	2260496.72	8.00	0.00
			6062699.00	2260486.40	8.00	0.00
			6062687.42	2260477.73	8.00	0.00
			6062674.65	2260470.93	8.00	0.00
			6062661.00	2260466.15	8.00	0.00
			6062646.78	2260463.50	8.00	0.00
			6062632.32	2260463.04	8.00	0.00
			6062617.96	2260464.79	8.00	0.00
			6062604.04	2260468.70	8.00	0.00
			6062590.86	2260474.68	8.00	0.00
			6062569.04	2260472.97	8.00	0.00
			6062547.16	2260473.82	8.00	0.00
			6062525.53	2260477.21	8.00	0.00
			6062504.44	2260483.10	8.00	0.00
			6062484.18	2260491.41	8.00	0.00
			6062465.03	2260502.03	8.00	0.00
			6062447.25	2260514.80	8.00	0.00
			6062442.17	2260506.30	8.00	0.00

Name	Height		Coordinates			
	Begin	End	x	y	z	Ground
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
			6062435.78	2260498.72	8.00	0.00
			6062428.26	2260492.27	8.00	0.00
			6062419.79	2260487.12	8.00	0.00
			6062410.61	2260483.40	8.00	0.00
			6062400.95	2260481.20	8.00	0.00
			6062391.05	2260480.59	8.00	0.00
			6062381.19	2260481.58	8.00	0.00
			6062371.62	2260484.14	8.00	0.00
			6062362.59	2260488.21	8.00	0.00
			6062354.33	2260493.68	8.00	0.00
			6062334.26	2260489.36	8.00	0.00
			6062313.82	2260487.51	8.00	0.00
			6062293.30	2260488.18	8.00	0.00
			6062273.02	2260491.34	8.00	0.00
			6062253.28	2260496.95	8.00	0.00
			6062234.37	2260504.93	8.00	0.00
			6062216.57	2260515.15	8.00	0.00
			6062200.16	2260527.48	8.00	0.00
			6062186.52	2260518.27	8.00	0.00
			6062171.80	2260510.92	8.00	0.00
			6062156.24	2260505.57	8.00	0.00
			6062140.12	2260502.29	8.00	0.00
			6062123.71	2260501.15	8.00	0.00
			6062107.29	2260502.17	8.00	0.00
			6062091.14	2260505.33	8.00	0.00
			6062075.55	2260510.58	8.00	0.00
			6062057.34	2260500.53	8.00	0.00
			6062038.09	2260492.67	8.00	0.00
			6062018.05	2260487.11	8.00	0.00
			6061997.49	2260483.92	8.00	0.00
			6061976.71	2260483.15	8.00	0.00
			6061955.98	2260484.81	8.00	0.00
			6061935.58	2260488.88	8.00	0.00
			6061915.80	2260495.30	8.00	0.00
			6061896.90	2260503.98	8.00	0.00
			6061879.14	2260514.80	8.00	0.00
			6061867.15	2260512.53	8.00	0.00
			6061854.96	2260512.22	8.00	0.00
			6061842.87	2260513.89	8.00	0.00
			6061831.21	2260517.48	8.00	0.00
			6061820.29	2260522.92	8.00	0.00
			6061810.39	2260530.05	8.00	0.00
			6061801.77	2260538.68	8.00	0.00
			6061794.66	2260548.59	8.00	0.00
			6061780.44	2260543.00	8.00	0.00
			6061765.54	2260539.59	8.00	0.00
			6061750.30	2260538.44	8.00	0.00
			6061735.06	2260539.59	8.00	0.00
			6061720.16	2260543.00	8.00	0.00
			6061705.94	2260548.60	8.00	0.00
			6061692.72	2260556.27	8.00	0.00
			6061680.79	2260565.82	8.00	0.00
			6061670.43	2260577.06	8.00	0.00
			6061661.86	2260589.71	8.00	0.00
			6061655.27	2260603.51	8.00	0.00
			6061649.62	2260614.09	8.00	0.00
			6061645.81	2260625.47	8.00	0.00
			6061643.95	2260637.32	8.00	0.00
			6061644.08	2260649.32	8.00	0.00
			6061646.21	2260661.13	8.00	0.00
			6061650.28	2260672.42	8.00	0.00
			6061656.17	2260682.88	8.00	0.00
			6061663.72	2260692.21	8.00	0.00
			6061663.93	2260706.64	8.00	0.00
			6061666.61	2260720.83	8.00	0.00
			6061671.68	2260734.34	8.00	0.00
			6061679.00	2260746.78	8.00	0.00
			6061688.34	2260757.79	8.00	0.00
			6061699.43	2260767.03	8.00	0.00
			6061711.94	2260774.23	8.00	0.00
			6061725.50	2260779.17	8.00	0.00
			6061739.71	2260781.72	8.00	0.00
			6061754.15	2260781.79	8.00	0.00
			6061768.38	2260779.38	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)
BARRIERS		BARRIERS00001						6.00	a		6062001.08	2263672.42	6.00	0.00
											6062659.93	2263671.12	6.00	0.00
BARRIERS		BARRIERS00002						6.00	a		6064020.44	2263480.19	6.00	0.00
											6064050.12	2263449.98	6.00	0.00
											6064301.16	2263452.07	6.00	0.00

Building(s)

Name	M.	ID	RB	Residents	Absorption	Height		Coordinates			
						Begin		x	y	z	Ground
						(ft)		(ft)	(ft)	(ft)	(ft)
BUILDING		BUILDING00005	x	0		30.00	a	6062064.46	2260299.41	30.00	0.00
								6062291.31	2260301.96	30.00	0.00
								6062291.31	2259776.90	30.00	0.00
								6062059.36	2259779.44	30.00	0.00
BUILDING		BUILDING00006	x	0		30.00	a	6062371.60	2260161.77	30.00	0.00
								6062510.51	2260159.22	30.00	0.00
								6062509.23	2259863.56	30.00	0.00
								6062434.04	2259863.56	30.00	0.00
								6062436.59	2259818.95	30.00	0.00
								6062372.87	2259820.23	30.00	0.00
BUILDING		BUILDING00007	x	0		30.00	a	6062533.45	2260234.41	30.00	0.00
								6062680.01	2260235.69	30.00	0.00
								6062680.01	2260160.49	30.00	0.00
								6062537.27	2260159.22	30.00	0.00
BUILDING		BUILDING00008	x	0		30.00	a	6062715.69	2260296.86	30.00	0.00
								6062785.78	2260296.86	30.00	0.00
								6062787.06	2260161.77	30.00	0.00
								6062716.96	2260163.04	30.00	0.00
BUILDING		BUILDING00009	x	0		30.00	a	6061697.43	2260265.00	30.00	0.00
								6061898.79	2260259.90	30.00	0.00
								6061898.79	2259942.57	30.00	0.00
								6061937.02	2259937.47	30.00	0.00
								6061935.75	2259742.49	30.00	0.00
								6061692.33	2259738.66	30.00	0.00
BUILDING		BUILDING00010	x	0		30.00	a	6062166.42	2259583.18	30.00	0.00
								6062255.62	2259589.56	30.00	0.00
								6062260.72	2259612.50	30.00	0.00
								6062441.69	2259615.04	30.00	0.00
								6062440.42	2259226.35	30.00	0.00
								6062329.54	2259227.62	30.00	0.00
								6062324.44	2259282.42	30.00	0.00
								6062126.91	2259279.87	30.00	0.00
								6062132.01	2259524.56	30.00	0.00
								6062166.42	2259527.11	30.00	0.00
BUILDING		BUILDING00011	x	0		30.00	a	6061450.45	2260243.00	30.00	0.00
								6061569.53	2260243.00	30.00	0.00
								6061566.48	2259913.23	30.00	0.00
								6061446.37	2259912.21	30.00	0.00
BUILDING		BUILDING00012	x	0		30.00	a	6060586.32	2260166.67	30.00	0.00
								6060902.86	2260166.67	30.00	0.00
								6060901.84	2260207.38	30.00	0.00
								6060832.63	2260209.42	30.00	0.00
								6060832.63	2260277.61	30.00	0.00
								6061021.94	2260275.57	30.00	0.00
								6061019.91	2260206.36	30.00	0.00
								6060949.68	2260202.29	30.00	0.00
								6060950.70	2260168.70	30.00	0.00
								6061259.10	2260164.63	30.00	0.00
								6061261.13	2259867.43	30.00	0.00
								6060591.41	2259876.59	30.00	0.00
BUILDING		BUILDING00013	x	0		30.00	a	6060483.51	2261178.97	30.00	0.00
								6060633.86	2261178.97	30.00	0.00
								6060617.67	2260744.09	30.00	0.00
								6060344.71	2260740.62	30.00	0.00
								6060343.56	2261122.30	30.00	0.00
								6060483.51	2261122.30	30.00	0.00
BUILDING		BUILDING00014	x	0		30.00	a	6060739.12	2261209.04	30.00	0.00
								6061204.07	2261203.26	30.00	0.00
								6061200.60	2261089.91	30.00	0.00
								6060740.27	2261093.38	30.00	0.00
BUILDING		BUILDING00015	x	0		30.00	a	6060948.46	2261042.49	30.00	0.00
								6061209.85	2261037.86	30.00	0.00
								6061212.17	2260884.04	30.00	0.00
								6060947.30	2260881.72	30.00	0.00
BUILDING		BUILDING00016	x	0		30.00	a	6060874.44	2260740.62	30.00	0.00
								6061021.33	2260742.93	30.00	0.00

Name	M.	ID	RB	Residents	Absorption	Height		Coordinates			
						Begin		x	y	z	Ground
						(ft)		(ft)	(ft)	(ft)	(ft)
								6061024.80	2260525.49	30.00	0.00
								6060873.28	2260523.18	30.00	0.00
BUILDING		BUILDING00017	x	0		30.00	a	6061116.17	2260805.39	30.00	0.00
								6061243.39	2260808.86	30.00	0.00
								6061245.71	2260489.63	30.00	0.00
								6061115.01	2260497.73	30.00	0.00
BUILDING		BUILDING00018	x	0		30.00	a	6060676.66	2260910.64	30.00	0.00
								6060783.07	2260911.79	30.00	0.00
								6060778.44	2260851.65	30.00	0.00
								6060820.08	2260851.65	30.00	0.00
								6060822.39	2260523.18	30.00	0.00
								6060674.35	2260528.96	30.00	0.00
BUILDING		BUILDING00019	x	0		30.00	a	6060189.21	2262251.80	30.00	0.00
								6061240.61	2262248.13	30.00	0.00
								6061251.64	2261854.77	30.00	0.00
								6060200.24	2261862.13	30.00	0.00
BUILDING		BUILDING00020	x	0		30.00	a	6060946.51	2262909.85	30.00	0.00
								6061163.41	2262909.85	30.00	0.00
								6061159.73	2262854.70	30.00	0.00
								6061233.26	2262851.03	30.00	0.00
								6061229.58	2262564.28	30.00	0.00
								6061100.91	2262567.96	30.00	0.00
								6061082.53	2262663.54	30.00	0.00
								6060935.48	2262678.24	30.00	0.00
BUILDING		BUILDING00021	x	0		30.00	a	6061119.29	2263347.32	30.00	0.00
								6061233.26	2263347.32	30.00	0.00
								6061222.23	2263273.79	30.00	0.00
								6061115.62	2263273.79	30.00	0.00
BUILDING		BUILDING00022	x	0		30.00	a	6061134.00	2263211.30	30.00	0.00
								6061281.05	2263200.27	30.00	0.00
								6061273.69	2263130.42	30.00	0.00
								6061134.00	2263130.42	30.00	0.00
BUILDING		BUILDING00023	x	0		30.00	a	6061420.74	2263306.88	30.00	0.00
								6061501.62	2263420.84	30.00	0.00
								6061663.37	2263420.84	30.00	0.00
								6061652.34	2263148.80	30.00	0.00
								6061431.77	2263112.04	30.00	0.00
BUILDING		BUILDING00024	x	0		30.00	a	6061439.12	2262906.17	30.00	0.00
								6061575.14	2262898.82	30.00	0.00
								6061586.17	2262604.72	30.00	0.00
								6061450.15	2262597.37	30.00	0.00
BUILDING		BUILDING00025	x	0		30.00	a	6061453.83	2263593.62	30.00	0.00
								6061656.02	2263604.65	30.00	0.00
								6061659.70	2263461.28	30.00	0.00
								6061457.50	2263461.28	30.00	0.00
BUILDING		BUILDING00026	x	0		30.00	a	6061817.77	2263597.30	30.00	0.00
								6061994.23	2263593.62	30.00	0.00
								6061983.20	2263159.83	30.00	0.00
								6061821.45	2263163.50	30.00	0.00
BUILDING		BUILDING00027	x	0		30.00	a	6061670.72	2262869.41	30.00	0.00
								6061850.86	2262869.41	30.00	0.00
								6061854.54	2262567.96	30.00	0.00
								6061792.04	2262556.93	30.00	0.00
								6061670.72	2262656.19	30.00	0.00
BUILDING		BUILDING00028	x	0		30.00	a	6061997.91	2262942.93	30.00	0.00
								6062159.66	2262935.58	30.00	0.00
								6062148.63	2262454.00	30.00	0.00
								6061983.20	2262454.00	30.00	0.00
BUILDING		BUILDING00029	x	0		30.00	a	6062034.67	2263450.25	30.00	0.00
								6062196.42	2263453.93	30.00	0.00
								6062207.45	2263358.34	30.00	0.00
								6062810.35	2263350.99	30.00	0.00
								6062788.29	2263119.39	30.00	0.00
								6062019.96	2263126.74	30.00	0.00
BUILDING		BUILDING00030	x	0		30.00	a	6062273.62	2262880.44	30.00	0.00
								6062472.14	2262887.79	30.00	0.00
								6062490.52	2262454.00	30.00	0.00
								6062604.48	2262442.97	30.00	0.00
								6062644.92	2262876.76	30.00	0.00
								6062880.20	2262876.76	30.00	0.00
								6062880.20	2262347.39	30.00	0.00
								6062266.27	2262336.36	30.00	0.00
BUILDING		BUILDING00031	x	0		30.00	a	6062292.00	2262273.86	30.00	0.00
								6062865.49	2262266.51	30.00	0.00
								6062858.14	2261880.51	30.00	0.00
								6062336.12	2261854.77	30.00	0.00
BUILDING		BUILDING00032	x	0		30.00	a	6063035.13	2261936.74	30.00	0.00

Name	M.	ID	RB	Residents	Absorption	Height		Coordinates			
						Begin		x	y	z	Ground
						(ft)		(ft)	(ft)	(ft)	(ft)
								6063036.44	2261863.82	30.00	0.00
								6063764.30	2261865.13	30.00	0.00
								6063772.11	2262018.77	30.00	0.00
								6063838.52	2262016.17	30.00	0.00
								6063845.03	2261815.65	30.00	0.00
								6062997.37	2261824.76	30.00	0.00
								6062989.56	2261939.34	30.00	0.00
BUILDING		BUILDING00033	x	0		30.00	a	6064120.77	2262249.43	30.00	0.00
								6064692.12	2262253.35	30.00	0.00
								6064696.04	2261910.93	30.00	0.00
								6064122.73	2261895.27	30.00	0.00
BUILDING		BUILDING00034	x	0		30.00	a	6064065.98	2262417.71	30.00	0.00
								6064737.13	2262415.75	30.00	0.00
								6064739.08	2262319.87	30.00	0.00
								6064058.16	2262335.53	30.00	0.00
BUILDING		BUILDING00035	x	0		30.00	a	6064095.33	2262947.97	30.00	0.00
								6064656.90	2262942.10	30.00	0.00
								6064649.08	2262715.13	30.00	0.00
								6064155.99	2262738.61	30.00	0.00
BUILDING		BUILDING00036	x	0		30.00	a	6063670.73	2262924.49	30.00	0.00
								6063842.92	2262930.36	30.00	0.00
								6063840.96	2262783.61	30.00	0.00
								6063670.73	2262779.70	30.00	0.00
BUILDING		BUILDING00037	x	0		30.00	a	6063727.47	2262748.39	30.00	0.00
								6063844.88	2262746.43	30.00	0.00
								6063840.96	2262558.59	30.00	0.00
								6063729.43	2262562.50	30.00	0.00
BUILDING		BUILDING00038	x	0		30.00	a	6063731.39	2262468.58	30.00	0.00
								6063868.36	2262474.45	30.00	0.00
								6063862.49	2262325.74	30.00	0.00
								6063733.35	2262321.83	30.00	0.00
BUILDING		BUILDING00039	x	0		30.00	a	6064277.31	2263378.44	30.00	0.00
								6064353.62	2263382.36	30.00	0.00
								6064353.62	2263137.77	30.00	0.00
								6064275.35	2263141.68	30.00	0.00
BUILDING		BUILDING00040	x	0		30.00	a	6063643.34	2263546.72	30.00	0.00
								6063794.00	2263542.81	30.00	0.00
								6063788.13	2263169.08	30.00	0.00
								6063846.83	2263143.64	30.00	0.00
								6063848.79	2263096.68	30.00	0.00
								6063707.91	2263096.68	30.00	0.00
								6063696.17	2263368.66	30.00	0.00
								6063647.25	2263374.53	30.00	0.00
BUILDING		BUILDING00041	x	0		30.00	a	6064118.81	2262621.20	30.00	0.00
								6064206.86	2262621.20	30.00	0.00
								6064210.78	2262482.28	30.00	0.00
								6064120.77	2262480.32	30.00	0.00
BUILDING		BUILDING00042	x	0		30.00	a	6064072.47	2260874.72	30.00	0.00
								6064255.58	2260876.22	30.00	0.00
								6064252.58	2260775.67	30.00	0.00
								6064134.01	2260778.67	30.00	0.00
								6064129.51	2260822.19	30.00	0.00
								6064076.98	2260828.20	30.00	0.00
BUILDING		BUILDING00043	x	0		30.00	a	6064120.50	2260676.61	30.00	0.00
								6064257.08	2260679.61	30.00	0.00
								6064258.58	2260591.06	30.00	0.00
								6064125.00	2260589.56	30.00	0.00
BUILDING		BUILDING00044	x	0		30.00	a	6064143.01	2260492.00	30.00	0.00
								6064240.57	2260507.01	30.00	0.00
								6064233.07	2260443.97	30.00	0.00
								6064143.01	2260436.47	30.00	0.00
BUILDING		BUILDING00045	x	0		30.00	a	6064440.19	2260481.50	30.00	0.00
								6064549.75	2260478.49	30.00	0.00
								6064552.75	2260416.96	30.00	0.00
								6064444.69	2260418.46	30.00	0.00
BUILDING		BUILDING00046	x	0		30.00	a	6064788.39	2260558.04	30.00	0.00
								6064872.44	2260552.04	30.00	0.00
								6064866.43	2260433.47	30.00	0.00
								6064785.39	2260428.96	30.00	0.00
BUILDING		BUILDING00047	x	0		30.00	a	6064573.76	2260654.10	30.00	0.00
								6064689.33	2260651.09	30.00	0.00
								6064689.33	2260577.55	30.00	0.00
								6064764.38	2260571.55	30.00	0.00
								6064771.88	2260412.46	30.00	0.00
								6064725.35	2260415.46	30.00	0.00
								6064726.85	2260543.03	30.00	0.00
								6064549.75	2260547.53	30.00	0.00

Name	M.	ID	RB	Residents	Absorption	Height		Coordinates			
						Begin		x	y	z	Ground
						(ft)		(ft)	(ft)	(ft)	(ft)
BUILDING		BUILDING00048	x	0		30.00	a	6064079.98	2261596.64	30.00	0.00
								6064590.27	2261590.64	30.00	0.00
								6064590.27	2261575.63	30.00	0.00
								6065069.05	2261572.63	30.00	0.00
								6065070.55	2261134.37	30.00	0.00
								6064600.78	2261122.37	30.00	0.00
								6064591.78	2261192.91	30.00	0.00
								6064078.48	2261194.41	30.00	0.00
BUILDING		BUILDING00049	x	0		30.00	a	6063565.18	2260805.68	30.00	0.00
								6063926.89	2260805.68	30.00	0.00
								6063923.89	2260742.65	30.00	0.00
								6063665.74	2260744.15	30.00	0.00
								6063665.74	2260708.13	30.00	0.00
								6063572.68	2260709.63	30.00	0.00
BUILDING		BUILDING00050	x	0		30.00	a	6063562.18	2260685.61	30.00	0.00
								6063665.74	2260679.61	30.00	0.00
								6063667.24	2260658.60	30.00	0.00
								6063928.39	2260646.59	30.00	0.00
								6063922.39	2260591.06	30.00	0.00
								6063569.68	2260586.56	30.00	0.00
BUILDING		BUILDING00051	x	0		30.00	a	6060930.72	2260524.05	30.00	0.00
								6061014.79	2260525.34	30.00	0.00
								6061015.99	2260474.08	30.00	0.00
								6060929.50	2260474.08	30.00	0.00
BUILDING		BUILDING00052	x	0		30.00	a	6060682.08	2260528.66	30.00	0.00
								6060815.86	2260523.43	30.00	0.00
								6060815.52	2260498.69	30.00	0.00
								6060756.95	2260499.37	30.00	0.00
								6060756.28	2260474.32	30.00	0.00
								6060680.79	2260473.98	30.00	0.00
BUILDING		BUILDING00053	x	0		30.00	a	6060395.85	2260598.02	30.00	0.00
								6060604.59	2260600.60	30.00	0.00
								6060602.52	2260458.00	30.00	0.00
								6060518.82	2260455.42	30.00	0.00
								6060517.79	2260519.49	30.00	0.00
								6060395.34	2260524.14	30.00	0.00
BUILDING		BUILDING00054	x	0		30.00	a	6060898.61	2261586.33	30.00	0.00
								6061182.72	2261585.54	30.00	0.00
								6061182.72	2261331.50	30.00	0.00
								6060895.44	2261329.13	30.00	0.00
BUILDING		BUILDING00055	x	0		30.00	a	6060704.72	2261584.75	30.00	0.00
								6060766.45	2261587.92	30.00	0.00
								6060764.07	2261337.04	30.00	0.00
								6060704.72	2261337.83	30.00	0.00
BUILDING		BUILDING00056	x	0		30.00	a	6060542.48	2261614.82	30.00	0.00
								6060639.03	2261613.24	30.00	0.00
								6060640.61	2261533.31	30.00	0.00
								6060540.90	2261534.89	30.00	0.00
BUILDING		BUILDING00057	x	0		30.00	a	6060543.27	2261481.87	30.00	0.00
								6060638.24	2261481.08	30.00	0.00
								6060639.82	2261295.89	30.00	0.00
								6060543.27	2261295.89	30.00	0.00

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