

# Center Street Commerce Building

## Noise Study

February 2016 (13432)

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# Center Street Commerce Building

## Noise Study

February 2016

City of Riverside, California



## Table of Contents

1	Executive Summary .....	1
1.1	Project Description .....	1
1.2	Construction-Related Noise .....	1
1.3	Operational Noise .....	1
1.4	Vibration .....	1
1.5	Airport Noise .....	1
1.6	Mitigation Measures .....	1
2	Introduction .....	5
3	Fundamentals of Noise .....	7
3.1	Defining Noise .....	7
	The Production of Sound .....	7
	Measuring Sound .....	7
	Standards for Noise Equivalent .....	8
3.2	Vibration and Groundborne Noise .....	8
4	Existing Noise Environment .....	9
4.1	Sensitive Receptors .....	9
4.2	Existing Noise Levels .....	9
5	Regulatory Framework .....	15
5.1	Federal Regulations .....	15
	Federal Noise Control Act of 1972 .....	15
	Federal Transit Administration .....	15
5.2	State Regulations .....	17
	California Environmental Quality Act (CEQA) .....	17
	California Noise Control Act of 1973 .....	17
	California Noise Insulation Standards (CCR Title 24) .....	17
	State of California General Plan Guidelines 2003 .....	17
	California Department of Transportation .....	17
5.3	Local Regulations .....	18
	City of Riverside Municipal Code .....	18
	City of Colton Municipal Code .....	18
6	Impact Analysis .....	21
6.1	Thresholds of Significance .....	21
6.2	Consistency with Applicable Standards .....	21
	Construction Noise Levels .....	21
	Operational Noise levels .....	22
6.3	Vibration Impacts .....	23
	Construction Vibration .....	23
	Operational Vibration .....	23
6.4	Airport Noise .....	24
7	Mitigation Measures .....	29
8	References .....	31

## Tables

Table 1	Ambient Noise Levels .....	9
Table 2	Reference Vibration Source Amplitudes for Construction Equipment .....	16
Table 3	Groundborne Vibration and Noise Impact Criteria .....	16
Table 4	Vibration Damage Potential Threshold Criteria .....	18
Table 5	Vibration Annoyance Potential Threshold Criteria .....	18
Table 6	Opening Year 2017 Peak Hour Roadway Noise Levels .....	22

Table 7 Distances to Vibration Receptors.....	23
Table 8 Construction Vibration Impacts .....	23
Table 9 Vibration Criteria for Buildings.....	24

## Figures

Figure 1 Hertz Diagram.....	7
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## Exhibits

Exhibit 1 Regional and Vicinity Map <i>This Page Intentionally Left Blank</i> .....	3
Exhibit 2 Radius Map .....	11
Exhibit 3 Noise Measurement Locations.....	13
Exhibit 4 Receptors - Construction .....	25
Exhibit 5 Receptors – Traffic Noise.....	27

## Appendix

Appendix A	Noise Measurement Data
Appendix B	Construction Noise Output Data
Appendix C	SoundPLAN Output Data

## 1 EXECUTIVE SUMMARY

Construction-related and operational noise impacts were modeled and analyzed for the proposed building located at 3667 Placentia Lane in the City of Riverside, California. This noise impact analysis contains documentation of existing noise levels as well as analysis of the impacts generated by project operation and traffic and analysis of vibration impacts. This report analyzes the project's consistency with applicable federal, State, and local regulations. The results of this report find construction-related and operational noise levels are consistent with applicable regulations.

### 1.1 Project Description

The project includes the development of a 308,000-square foot building located at 3667 Placentia Lane in the City of Riverside, California. The project includes 382 parking stalls, 62 trailer docks, and 110,591 square feet of landscaping.

### 1.2 Construction-Related Noise

Temporary noise increases will be greatest during the demolition phase. The model indicates that the use of construction equipment such as excavators, dozers, and concrete saws could expose the use located approximately 421 feet to the south of the center of the project site to a combined noise level of 71.1 dBA  $L_{max}$ . Construction equipment could expose the use located 640 feet south, the industrial use located 510 feet east, and the park located 544 feet from the center of the project site to a combined noise level of 67.4 dBA  $L_{max}$ , 69.4 dBA  $L_{max}$ , and 68.8 dBA  $L_{max}$ , respectively. A noise level of 70 dBA is allowable at surrounding industrial uses and a noise level of 65 dBA is allowable at public recreation facilities. Construction activity could result in noise levels in excess of the allowable noise levels at the industrial use to the south and the public recreation use to the south of the project site. With incorporation of the Mitigation Measures N-1 and N-2, described herein, no substantial impacts will occur.

### 1.3 Operational Noise

The increase in vehicular traffic on area roadways will not result in noise levels exceeding the 65 dBA exterior noise standard established by the City of Colton to the north. The exterior noise levels under the Without and With project scenarios exceed allowable exterior noise levels at the residential uses to the northwest, northeast, and southeast of the project site. However, the project does not cause the exterior noise levels to exceed the 55 dBA residential threshold for receptors that are currently below the allowable noise levels. In addition, the proposed project will not result in a noticeable increase in noise levels. Therefore, no substantial impacts will occur.

### 1.4 Vibration

Based on the threshold criteria established by the Federal Transit Administration (FTA) and the California Department of Transportation (Caltrans), vibration from use of heavy construction equipment to construct the proposed project would be below the thresholds to cause damage to nearby structures and result in less than *barely perceptible* vibration at the receptors analyzed in the report. Therefore, no substantial impacts will occur.

### 1.5 Airport Noise

The project site is not located within two miles of a public or private use airport or helipad. Therefore, no substantial impacts will occur.

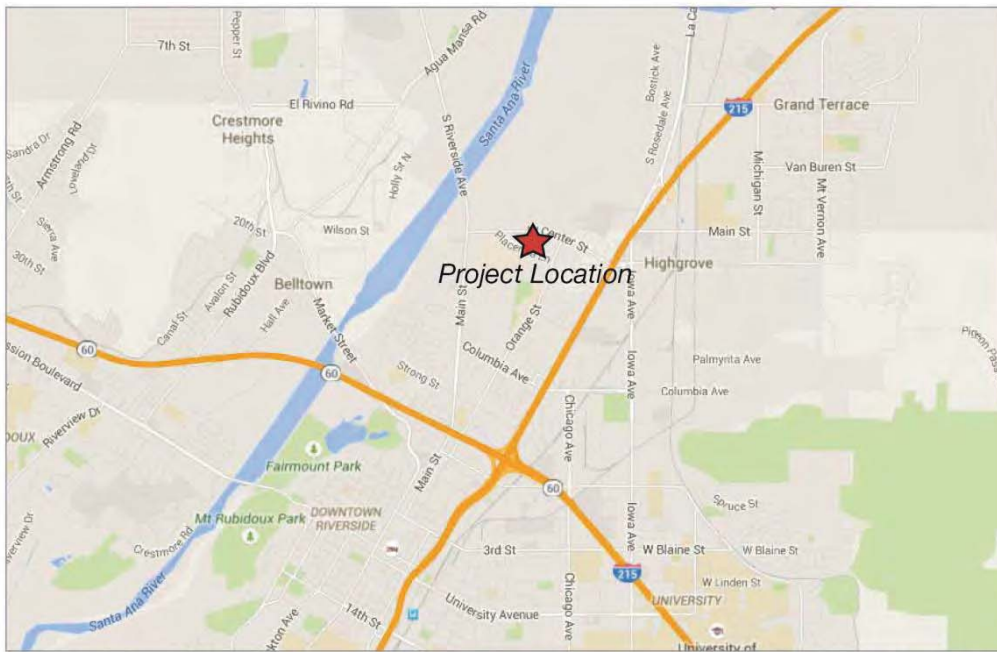
### 1.6 Mitigation Measures

The following mitigation measures are required to ensure that project-related short- and long-term noise levels are consistent with applicable federal, State, and local regulations.

- N-1** Limit construction activities to the hours of 7:00 AM to 7:00 PM Monday through Friday and the hours of 8:00 AM to 5:00 PM on Saturdays. Construction activity shall be prohibited on Sundays and federal holidays. This mitigation measure must be implemented throughout construction and may be periodically monitored by the Planning Director or designee during routine inspections.

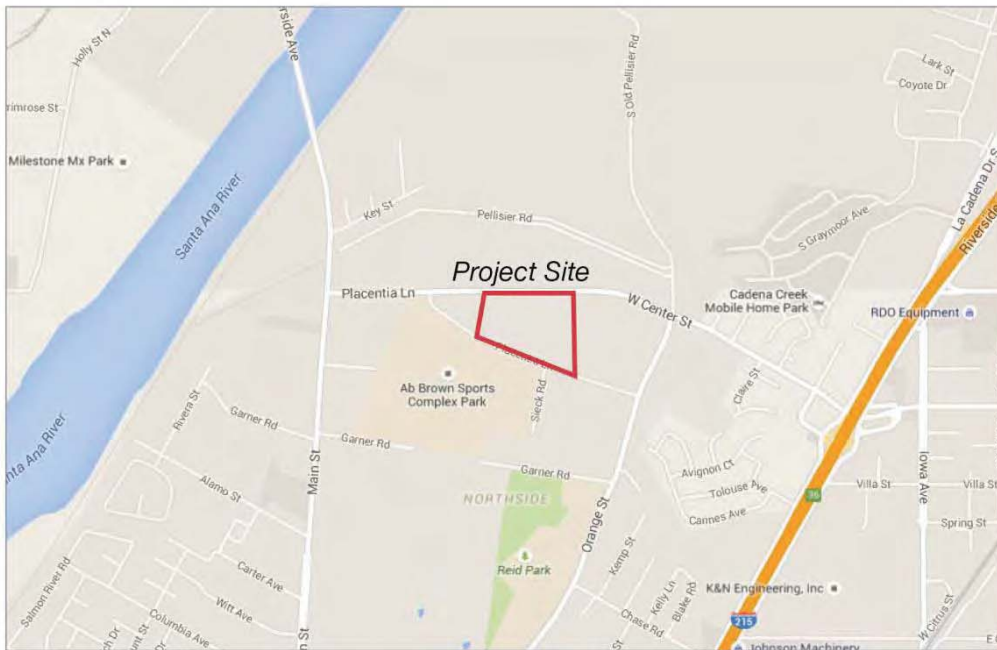
- N-2** Prior to issuance of grading permits, the Applicant shall submit a mitigation plan prepared by a qualified engineer or other acoustical expert for review and approval by the Planning Division that identifies noise control measures that achieve a minimum 10 dBA reduction in construction-related noise levels. The mitigation plan may include use of sound curtains, engineered equipment controls, or other methods. Noise control requirements shall be noted on project construction drawings and verified by the Building Department during standard inspection procedures.





Source: Google Maps, 2015

Regional



Source: Google Maps, 2015

Vicinity



## Exhibit 1 Regional and Vicinity Map

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Planning Commission - Exhibit 1 - Development Review Committee Staff Report  
 Development Review Committee - Exhibit 7 - CEQA Documents

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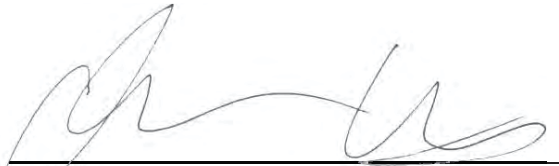
## 2 INTRODUCTION

This report includes modeling and analysis of construction- and operation-related noise generated from the proposed project on surrounding land uses. Vibration effects and airport noise are also discussed herein. The project includes construction of a 308,000-square foot building on 15.63 acres in the City of Riverside, California.

This report has been prepared utilizing project-specific characteristics where available. In those instances where project-specific data is not available, the analysis has been supplemented by model defaults or other standardized sources of comparable data. In any case where non-project defaults or other data have been used, a "worst-case" scenario was developed to ensure a conservative estimate of noise impacts.

This report has been prepared for use by the Lead Agency to assess potential project-related noise impacts to the environment in compliance with federal, State, or local guidelines, particularly with respect to the noise issues identified in Appendix G of the State CEQA Guidelines. This report does not make determinations of significance pursuant to CEQA because such determinations are required to be made solely in the purview of the Lead Agency.

This report has been prepared by Christopher Brown (Director of Environmental Services) and Olivia Chan (Associate Analyst II) of MIG, Inc. under contract to Transition Properties, LP.



**Christopher Brown**  
Director of Environmental Services



**Olivia Chan**  
Associate Analyst II

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### 3.1 Defining Noise

"Sound" is a vibratory disturbance created by a moving or vibrating source and is capable of being detected. "Noise" is defined as sound that is loud, unpleasant, unexpected, or undesired and may therefore be classified as a more specific group of sounds. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance and, in the extreme, hearing impairment.

#### THE PRODUCTION OF SOUND

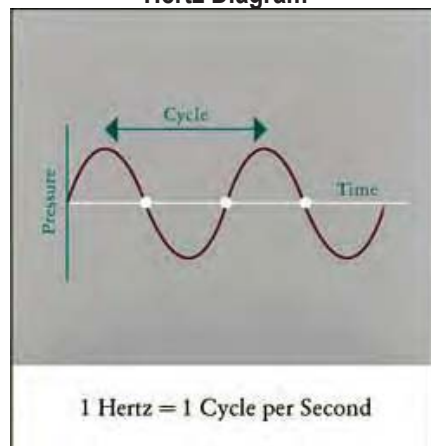
Sound has three properties: amplitude and amplitude variation of the acoustical wave (loudness), frequency (pitch), and duration of the noise. Despite the ability to measure sound, human perceptibility is subjective, and the physical response to sound complicates the analysis of its impact on people. People judge the relative magnitude of sound sensation in subjective terms such as "noisiness" or "loudness."

#### MEASURING SOUND

Sound pressure levels are described in logarithmic units of ratios of sound pressures to a reference pressure, squared. These units are called bels. To provide a finer description of sound, a bel is subdivided into 10 decibels, abbreviated dB. Since decibels are logarithmic units, sound pressure levels cannot be added or subtracted by ordinary arithmetic means. For example, if one automobile produces a sound pressure level of 70 dB when it passes an observer, two cars passing simultaneously would not produce 140 dB. In fact, they would combine to produce 73 dB. This same principle can be applied to other traffic quantities as well. In other words, doubling the traffic volume on a street or the speed of the traffic will increase the traffic noise level by three dB. Conversely, halving the traffic volume or speed will reduce the traffic noise level by three dB. A three dB change in sound is the beginning at which humans generally notice a *barely perceptible* change in sound and a five dB change is generally *readily perceptible*.<sup>1</sup>

Sound pressure level alone is not a reliable indicator of loudness. The frequency or pitch of a sound also has a substantial effect on how humans will respond. While the intensity of the sound is a purely physical quantity, the loudness or human response depends on the characteristics of the human ear. Human hearing is limited not only to the range of audible frequencies but also in the way it perceives the sound pressure level in that range. In general, the healthy human ear is most sensitive to sounds between 1,000 Hertz (Hz) and 5,000 Hz, and perceives both higher and lower frequency sounds of the same magnitude with less intensity. Hertz is a unit of frequency that defines any periodic event. In the case of sound pressure, a Hertz defines one cycle of a sound wave per second (see Figure 1, Hertz Diagram). To approximate the frequency response of the human ear, a series of sound pressure level adjustments is usually applied to the sound measured by a sound level meter.

Figure 1  
Hertz Diagram



### **STANDARDS FOR NOISE EQUIVALENT**

Noise consists of pitch, loudness, and duration; therefore, a variety of methods for measuring noise have been developed. According to the California General Plan Guidelines for Noise Elements, the following are common metrics for measuring noise:<sup>2</sup>

**L<sub>eq</sub> (Equivalent Energy Noise Level):** The sound level corresponding to a steady-state sound level containing the same total energy as a time-varying signal over given sample periods. L<sub>eq</sub> is typically computed over 1-, 8-, and 24-hour sample periods.

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

**L<sub>dn</sub> (Day-Night Average Level):** The average equivalent A-weighted sound level during a 24-hour day, obtained after the addition of ten decibels to sound levels in the night after 10:00 PM and before 7:00 AM.

CNEL and L<sub>dn</sub> are utilized for describing ambient noise levels because they account for all noise sources over an extended period of time and account for the heightened sensitivity of people to noise during the night. L<sub>eq</sub> is better utilized for describing specific and consistent sources because of the shorter reference period.

Federal and State agencies have established noise and land use compatibility guidelines that use averaging approaches to noise measurement. The State Department of Aeronautics and the California Commission on Housing and Community Development have adopted the community noise equivalent level (CNEL).

### **3.2 Vibration and Groundborne Noise**

Vibration is the movement of mass over time. It is described in terms of frequency and amplitude and unlike sound; there is no standard way of measuring and reporting amplitude. Vibration can be described in units of velocity (inches per second) or discussed in decibel (dB) units in order to compress the range of numbers required to describe vibration. Vibration impacts to buildings are generally discussed in terms of peak particle velocity (PPV) that describes particle movement over time (in terms of physical displacement of mass). For purposes of this analysis, PPV will be used to describe all vibration for ease of reading and comparison. Vibration can impact people, structures, and sensitive equipment.<sup>3</sup> The primary concern related to vibration and people is the potential to annoy those working and residing in the area. Vibration with high enough amplitudes can damage structures (such as crack plaster or destroy windows). Groundborne vibration can also disrupt the use of sensitive medical and scientific instruments such as electron microscopes. Common sources of vibration within communities include construction activities and railroads.

Groundborne vibration generated by construction projects is usually highest during pile driving, rock blasting, soil compacting, jack hammering, and demolition-related activities. Next to pile driving, grading activity has the greatest potential for vibration impacts if large bulldozers, large trucks, or other heavy equipment are used.

#### 4.1 Sensitive Receptors

The State of California defines sensitive receptors as those land uses that require serenity or are otherwise adversely affected by noise events or conditions. Schools, libraries, churches, hospitals, and residential uses make up the majority of these areas. The proposed facility is located in a generally industrial area with industrial uses to the north and east, vacant land to the west, and open space/park use to the south. There are residential uses approximately 0.14 miles to the southeast of the project site. There are no schools located within a quarter mile of the project site. Exhibit 2 (Radius Map) identifies existing development in the project vicinity based on assessor's parcel data.

#### 4.2 Existing Noise Levels

Short-term noise measurements at the project site were conducted to identify the ambient noise in the project vicinity. An American National Standards Institute (ANSI Section SI4 1979, Type 1) Larson Davis model LxT sound level meter was used to monitor existing ambient noise levels in the project area. The noise meter was programmed in "slow" mode to record noise levels in A-weighted form. The microphone height was set at five feet. Two 10-minute daytime noise measurements were taken between 9:48 AM and 10:12 AM on Tuesday, April 7, 2015.

Ambient noise levels ranged from 58.7 to 66.9 dBA CNEL. Ambient noise levels are a composite of noise from all sources, near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location. Measurement locations are shown in Exhibit 3 (Noise Measurement Locations). Ambient noise levels are presented in Table 1 (Ambient Noise Levels) and measurement output data is included as Appendix A.

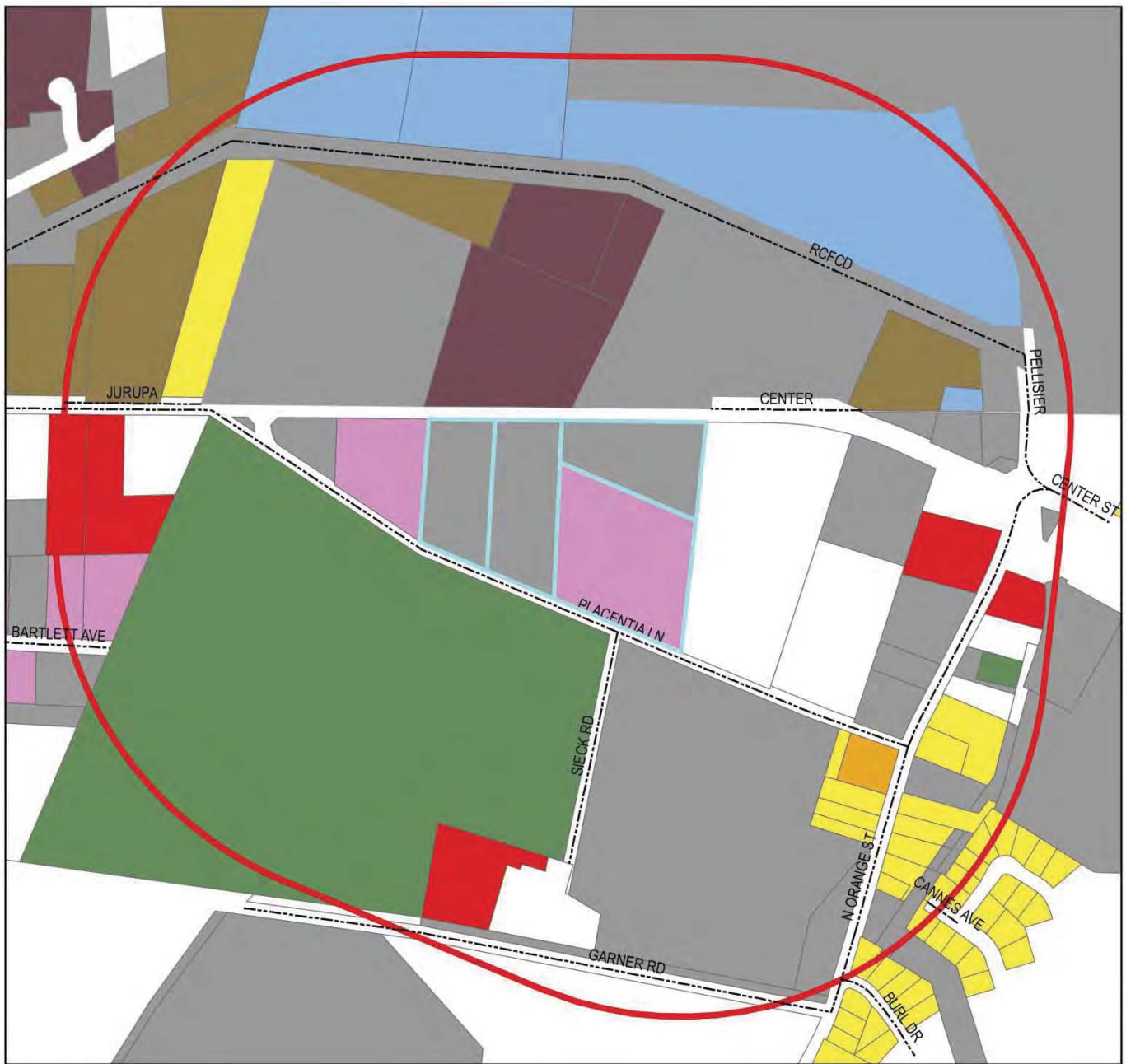
Vehicular traffic along Center Street and Placentia Lane was the dominant noise source at measurement location 001 and truck traffic entering and exiting the industrial use at the south end of Sieck Road was the dominant noise source at measurement location 002.

**Table 1**  
**Ambient Noise Levels**

Location	Time Period	Measurement Period	Description	Existing Ambient Noise Levels (dBA CNEL)
001	9:48 AM – 9:58 AM	10 Minutes	Northern property boundary on the south side of Center Street	66.9
002	10:02 AM – 10:12 AM	10 Minutes	Southwestern corner of Placentia Lane and Sieck Road	58.7

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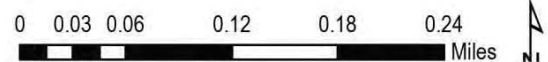


## Legend

- Project Site
- 0.25 Mile Radius

### Land Uses

- |   |  |
|---|--|
| <span style="display: inline-block; width: 15px; height: 15px; background-color: white; border: 1px solid black;"></span> Unknown | <span style="display: inline-block; width: 15px; height: 15px; background-color: pink;"></span> Residential Use in Commercial Zone |
| <span style="display: inline-block; width: 15px; height: 15px; background-color: grey;"></span> Vacant                            | <span style="display: inline-block; width: 15px; height: 15px; background-color: yellow;"></span> Single Family Residential        |
| <span style="display: inline-block; width: 15px; height: 15px; background-color: red;"></span> Commercial                         | <span style="display: inline-block; width: 15px; height: 15px; background-color: orange;"></span> Multi-Family Residential         |
| <span style="display: inline-block; width: 15px; height: 15px; background-color: darkpurple;"></span> Storage                     | <span style="display: inline-block; width: 15px; height: 15px; background-color: darkgreen;"></span> Miscellaneous Structures      |
| <span style="display: inline-block; width: 15px; height: 15px; background-color: brown;"></span> Light Industrial                 | <span style="display: inline-block; width: 15px; height: 15px; background-color: blue;"></span> Electric Power Transmissions       |



## Exhibit 2 Radius Map

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Planning Commission - Exhibit 1 - Development Review Committee Staff Report

Development Review Committee - Exhibit 7 - CEQA Documents

Attachment 3 - City Planning Commission Report and Exhibits - April 05, 2018

Center Street Commerce Building Project  
6550 Center Street, Riverside, California

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### Exhibit 3 Noise Measurement Locations

Center Street Commerce Building Project  
6550 Center Street, Riverside, California

Source: Google Earth, 2015

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**MIG** Hogle-Ireland

Planning Commission - Exhibit 1 - Development Review Committee Staff Report  
Development Review Committee - Exhibit 7 - CEQA Documents

Attachment 3 - City Planning Commission Report and Exhibits - April 05, 2018

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## **5.1 Federal Regulations**

### ***FEDERAL NOISE CONTROL ACT OF 1972***

The U.S. Environmental Protection Agency (EPA) Office of Noise Abatement and Control was originally established to coordinate federal noise control activities. After its inception, EPA's Office of Noise Abatement and Control issued the Federal Noise Control Act of 1972, establishing programs and guidelines to identify and address the effects of noise on public health, welfare, and the environment. In response, the EPA published information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety (Levels of Environmental Noise). The Levels of Environmental Noise recommended that the  $L_{dn}$  should not exceed 55 dBA outdoors or 45 dBA indoors to prevent significant activity interference and annoyance in noise-sensitive areas.

In addition, the Levels of Environmental Noise identified five dBA as an "adequate margin of safety" for a noise level increase relative to a baseline noise exposure level of 55 dBA  $L_{dn}$  (i.e., there would not be a noticeable increase in adverse community reaction with an increase of five dBA or less from this baseline level). The EPA did not promote these findings as universal standards or regulatory goals with mandatory applicability to all communities, but rather as advisory exposure levels below which there would be no risk to a community from any health or welfare effect of noise.

In 1981, EPA administrators determined that subjective issues such as noise would be better addressed at more localized levels of government. Consequently, in 1982 responsibilities for regulating noise control policies were transferred to State and local governments. However, noise control guidelines and regulations contained in EPA rulings in prior years remain in place by designated federal agencies, allowing more individualized control for specific issues by designated federal, State, and local government agencies.

### ***FEDERAL TRANSIT ADMINISTRATION***

The Federal Transit Administration (FTA) has developed methodology and significance criteria to evaluate incremental noise impacts from surface transportation modes (i.e., on road motor vehicles and trains) as presented in Transit Noise Impact and Vibration Assessment (FTA Guidelines). These incremental noise impact criteria are based on EPA findings and subsequent studies of annoyance in communities affected by transportation noise. The FTA extended the EPA's five dBA incremental impact criterion to higher ambient levels. As baseline ambient levels increase, smaller and smaller increments are allowed to limit expected increases in community annoyance. For example, in residential areas with a baseline ambient noise level of 50 dBA CNEL, a less-than-five dBA increase in noise levels would produce a minimal increase in community annoyance levels, while at 70 dBA CNEL, only one dBA increase could be accommodated before a significant annoyance increase would occur.

### **VIBRATION STANDARDS**

The FTA provides guidelines for maximum-acceptable vibration criteria for different types of land uses. Groundborne vibration and noise levels associated with various types of construction equipment and activities are summarized in Table 2 (Reference Vibration Source Amplitudes for Construction Equipment). Table 3 (Groundborne Vibration and Noise Impact Criteria) shows the Federal Transit Administration's maximum acceptable vibration standard for human annoyance in residences where people normally sleep is 80 VdB (less than 70 vibration events per day).



**Table 2**  
**Reference Vibration Source Amplitudes for Construction Equipment**

Equipment	Reference PPV at 25 ft (in/sec) at 25 Feet	Approximate Vibration Level (VL) at 25 Feet
Pile driver (impact)	1.518 (upper range)	112
	0.644 (typical)	104
Pile driver (sonic)	0.734 (upper range)	105
	0.170 (typical)	93
Clam shovel drop (slurry wall)	0.202	94
Hydromill	0.008 in soil	66
Slurry wall	0.017 in rock	75
Vibratory roller	0.210	94
Hoe Ram	0.089	87
Large bulldozer	0.089	87
Caisson drill	0.089	87
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58

*Notes: PPV is the peak particle velocity. Pile driver amplitude varies greatly based on equipment type and size.*

*Source: Federal Transit Administration. Transit Noise and Vibration Impact Assessment. 2006.*

**Table 3**  
**Groundborne Vibration and Noise Impact Criteria**

Land Use Category	Groundborne Vibration Impact Levels (VdB)		Groundborne Noise Impact Levels (dBA)	
	Frequent Events <sup>1</sup>	Infrequent Events <sup>2</sup>	Frequent Events <sup>1</sup>	Infrequent Events <sup>2</sup>
Category 1: Buildings where low ambient vibration is essential for interior vibrations	65 VdB <sup>3</sup>	65 VdB <sup>3</sup>	N/A	N/A
Category 2: Residences and buildings where people normally sleep	72 VdB	80 VdB	35 dBA	43 dBA
Category 3: Institutional land uses with primarily daytime use	75 VdB	83 VdB	40 dBA	48 dBA

<sup>1</sup> Frequent Events – more than 70 vibration events per day

<sup>2</sup> Infrequent Events – fewer than 70 vibration events per day

<sup>3</sup> This criterion limit is based on levels that are acceptable for more moderately sensitive equipment such as optical microscopes.

*Source: United States Department of Transportation, Federal Transit Administration, Transit Noise and Vibration Assessment, 1995*

The FTA and Caltrans have compiled the data from numerous studies related to vibration and have developed standards for human perception and building damage. The FTA's maximum acceptable vibration standard for human annoyance is 78 VdB at nearby vibration-sensitive land uses.<sup>4</sup> The Caltrans maximum vibration level standard is 0.2 in/sec PPV for the prevention of structural damage to typical residential buildings.<sup>5</sup>

## 5.2 State Regulations

### **CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)**

CEQA requires lead agencies to consider noise impacts. Under CEQA, lead agencies are directed to assess conformance to locally established noise standards or other agencies' noise standards; measure and identify the potentially significant exposure of people to or generation of excessive noise levels; measure and identify potentially significant permanent or temporary increase in ambient noise levels; and measure and identify potentially significant impacts associated with air traffic.

### **CALIFORNIA NOISE CONTROL ACT OF 1973**

Sections 46000-46080 of the California Health and Safety Code, known as the California Noise Control Act of 1973, find that excessive noise is a serious hazard to public health and welfare and that exposure to certain levels of noise can result in physiological, psychological, and economic damage. It also finds that there is a continuous and increasing bombardment of noise in the urban, suburban, and rural areas. The California Noise Control Act declares that the State of California has a responsibility to protect the health and welfare of its citizens by the control, prevention, and abatement of noise. It is the policy of the State to provide an environment for all Californians free from noise that jeopardizes their health or welfare.

### **CALIFORNIA NOISE INSULATION STANDARDS (CCR TITLE 24)**

In 1974, the California Commission on Housing and Community Development adopted noise insulation standards for multi-family residential buildings (Title 24, Part 2, California Code of Regulations). Title 24 establishes standards for interior room noise (attributable to outside noise sources). The regulations also specify that acoustical studies must be prepared whenever a residential building or structure is proposed to be located near an existing or adopted freeway route, expressway, parkway, major street, thoroughfare, rail line, rapid transit line, or industrial noise source, and where such noise source or sources create an exterior CNEL (or  $L_{dn}$ ) of 60 dBA or greater. Such acoustical analysis must demonstrate that the residence has been designed to limit intruding noise to an interior CNEL (or  $L_{dn}$ ) of 45 dBA or below [California's Title 24 Noise Standards, Chap. 2-35].

### **STATE OF CALIFORNIA GENERAL PLAN GUIDELINES 2003**

Though not adopted by law, the State of California General Plan Guidelines 2003, published by the California Governor's Office of Planning and Research (OPR) (OPR Guidelines), provides guidance for the compatibility of projects within areas of specific noise exposure. The OPR Guidelines identify the suitability of various types of development relative to a range of outdoor noise levels and provide each local community some flexibility in setting local noise standards that allow for the variability in community preferences. Findings presented in the Levels of Environmental Noise Document (EPA 1974) influenced the recommendations of the OPR Guidelines, most importantly in the choice of noise exposure metrics (i.e.,  $L_{dn}$  or CNEL) and in the upper limits for the normally acceptable outdoor exposure of noise-sensitive uses.

The OPR Guidelines include a Noise and Land Use Compatibility Matrix which identifies acceptable and unacceptable community noise exposure limits for various land use categories. Where the "normally acceptable" range is used, it is defined as the highest noise level that should be considered for the construction of the buildings which do not incorporate any special acoustical treatment or noise mitigation. The "conditionally acceptable" or "normally acceptable" ranges include conditions calling for detailed acoustical study or construction mitigation to reduce interior exposure levels prior to the construction or operation of the building under the listed exposure levels.

### **CALIFORNIA DEPARTMENT OF TRANSPORTATION**

According to the Caltrans vibration manual, large bulldozers, vibratory rollers (used to compact earth), and loaded trucks utilized during grading activities can produce vibration, and depending on the level of vibration, could cause annoyance at uses within the project vicinity or damage structures. Caltrans has developed a screening tool to determine if vibration from construction equipment is substantial enough to impact surrounding uses.

The Caltrans vibration manual establishes thresholds for vibration impacts on buildings and humans. These thresholds are summarized in Tables 4 (Vibration Damage Potential Threshold Criteria) and 5 (Vibration Annoyance Potential Threshold Criteria).

**Table 4**  
**Vibration Damage Potential Threshold Criteria**

Structural Integrity	Maximum PPV (in/sec)	
	Transient	Continuous
Historic and some older buildings	0.50	0.25
Older residential structures	0.50	0.30
New residential structures	1.00	0.50
Modern industrial and commercial structures	2.00	0.50
<i>Source: Caltrans 2013</i>		

**Table 5**  
**Vibration Annoyance Potential Threshold Criteria**

Human Response	PPV Threshold (in/sec)	
	Transient	Continuous
Barely perceptible	0.035	0.012
Distinctly perceptible	0.24	0.035
Strongly perceptible	0.90	0.10
Severely perceptible	2.00	0.40
<i>Source: Caltrans 2013</i>		

### 5.3 Local Regulations

#### **CITY OF RIVERSIDE MUNICIPAL CODE**

The City of Riverside Municipal Code, under Chapter 4.25 (Nuisance Exterior Sound Level limits) Section 7.25.010 (Exterior Sound Level Limits), provides the local government ordinance relative to community noise level exposure, guidelines, and regulations.

##### Exterior Noise Standards

Table 7.25.010A (Exterior Noise Standards) of the Municipal Code includes exterior noise standards for daytime and nighttime noise levels for each land use category. Exterior noise levels shall not exceed 55 dBA between the hours of 7:00 AM and 10:00 PM for residential use or 70 dBA for surrounding industrial uses and 65 dBA for public recreation facilities and commercial use at any time of day.

##### Construction Noise Levels

Pursuant to Section 7.35.010 (General Noise Regulations), the operation or causing of any tools or equipment used in construction, drilling, repair, alteration, grading, or demolition work between the hours of 7:00 PM and 7:00 AM on Monday through Friday, between 5:00 PM and 8:00 AM on Saturdays, or any time on Sundays and federal holidays that creates a noise disturbance across residential or commercial property line or at any time exceeds the maximum permitted noise level for the underlying land use category is prohibited.

#### **CITY OF COLTON MUNICIPAL CODE**

Pursuant to Section 18.42.040 (Noise) of the Colton Municipal Code, the maximum sound level radiated by any use, when measured at the boundary line of the property of which is sound is generated, shall not be obnoxious and shall not exceed 65 dBA.



Vibration

Pursuant to Section 18.42.050 (Vibration) of the Colton Municipal Code, ground vibration shall not be generated by equipment other than motor vehicles, trains, or by temporary construction or demolition, which is perceptible by the average person at or beyond the lot line of the property containing such activities.

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The thresholds identified in Appendix G of the State CEQA Guidelines, as implemented by the City of Riverside, have been utilized to assess the significance of the potential environmental effects of the project.

### **6.1 Thresholds of Significance**

In accordance with Appendix G of the State CEQA Guidelines, the proposed project could result in potentially significant impacts related to noise if it results in:

- A. Exposure of persons or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- B. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.
- C. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- D. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.
- E. For a project located within an airport land use plan, or where such a plan has not been adopted, within two miles of a public airport or public use airport, exposure of people residing or working in the project area to excessive noise levels.
- F. For a project within a vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

To assess construction impacts, a worst-case construction scenario was modeled using the Federal Highway Administration's Roadway Construction Noise Model (RCNM). Modeling parameters and output are provided in Appendix B. RCNM utilizes standard noise emission levels for different types of equipment and includes utilization percentage, impact, and shielding parameters.

To assess current and opening year traffic noise levels, vehicle trips associated with surrounding roadways were modeled utilizing the SoundPLAN software. SoundPLAN is a three-dimensional noise modeling software that accounts for the shielding and reflective effects associated with intervening topography and nearby buildings.

### **6.2 Consistency with Applicable Standards**

#### **CONSTRUCTION NOISE LEVELS**

Construction noise levels were estimated for nearby receptors using the FHWA Roadway Construction Noise Model (RCNM). See Exhibit 4 (Receptors - Construction) for receptor locations. Temporary noise increases will be greatest during the demolition phase. The model indicates that the use of construction equipment such as excavators, dozers, and concrete saws could expose the industrial use located approximately 421 feet to the south of the center of the project site to a combined noise level of 71.1 dBA  $L_{max}$ . Construction equipment could expose the industrial use located 640 feet south, the industrial use located 510 feet east, and the park located 544 feet from the center of the project site to a combined noise level of 67.4 dBA  $L_{max}$ , 69.4 dBA  $L_{max}$ , and 68.8 dBA  $L_{max}$ , respectively. Within the City of Riverside, a noise level of 70 dBA is allowable at surrounding industrial uses and a noise level of 65 dBA is allowable at public recreation facilities. To the north of the project site is the City of Colton. Within the City of Colton, the maximum allowable noise level is 65 dBA. Construction activity could result in noise levels in excess of the allowable noise levels at the industrial use to the south, the public recreation use to the south, and the industrial use to the north of the project site. Therefore, Mitigation Measures N-1 and N-2 have been incorporated to reduce the impact to neighboring uses during construction.

Per Section 7.35.10 (General Noise Regulations) of the Riverside Municipal Code, construction activities occurring between the hours of 7:00 PM and 7:00 AM on Mondays through Fridays, between 5:00 PM and 8:00 AM on Saturdays, and any time on Sundays and federal holidays are prohibited. Mitigation Measure N-1 limits construction activity to the hours of 7:00 AM and 7:00 PM Monday through Friday and the hours of 8:00 AM and 5:00 PM on Saturdays. Due to the

time limitations on construction activity, surrounding employees and park users will be exposed to limited construction noise. Because noise levels during construction activities are anticipated to exceed the City's exterior noise standards, mitigation measures will be necessary to minimize noise levels at nearby receptors. Mitigation Measure N-2 will be incorporated to minimize noise associated with general construction activities. Mitigation Measure N-2 requires preparation of a construction noise reduction plan to reduce temporary noise impacts by a minimum of 10 dBA which is a feasible performance standard based on available technology. Engineered controls include retrofitting equipment with improved exhaust and intake muffling, disengaging equipment fans, and installation of sound panels around equipment engines. These types of controls can achieve noise level reductions of approximately 10 dBA.<sup>6 7</sup> Implementation of Mitigation Measure N-2 will reduce temporary noise impacts by a minimum of 10 dBA, resulting in a maximum construction noise level of 61.1 dBA at the project site and 58.8 dBA at the park located to the south of the project site. Therefore, with implementation of Mitigation Measures N-1 and N-2, construction noise will feasibly be reduced to unsubstantial levels.

### OPERATIONAL NOISE LEVELS

The City of Riverside Municipal Code sets an allowable exterior noise level for industrial uses at 70 dBA CNEL, 65 dBA CNEL for public recreational facilities and office/commercial use, 60 dBA for community support uses, and 55 dBA for residential use. The City of Colton sets an allowable noise level of 65 dBA CNEL. Ambient noise at the project site would generally be defined by traffic on Center Street, Placentia Lane, and operational noise from neighboring industrial uses. A substantial increase in ambient noise is an increase that is *barely perceptible* (3 dBA). Operationally, the proposed project will result in periodic landscaping and other occasional noise generating activities. These activities are common in urban uses and do not represent a substantial increase in periodic noise in consideration that the project site is located in an industrialized area. Traffic noise from vehicular traffic generated by the proposed project was projected using SoundPLAN software was based on estimated trip generation and distribution provided by Kunzman Associates, Inc.<sup>8</sup>

Noise levels at the single family homes to the east and west, the industrial uses to the north and east, and the commercial use to the east were calculated (see Appendix C for output data) and projected at the ground floor (see Exhibit 6 (Receptors – Traffic Noise)). The 2017 Opening Year Without and With Project traffic noise levels during the peak hour at neighboring uses are summarized in Table 6 (Opening Year 2017 Peak Hour Roadway Noise Levels). Opening Year Without and With Project exterior noise levels will be within the allowable exterior noise levels established by the City of Colton for the northern industrial use and within the established City of Riverside exterior noise standard for the industrial and commercial uses to the east and the residential use to the southeast of the project site on the east side of Orange Street. The exterior noise levels under the Without and With Project scenarios exceed allowable exterior noise levels at the residential uses to the northeast, southeast, and northwest of the project site. However, the project does not cause the exterior noise levels to exceed the 55 dBA residential threshold for receptors that are currently below the allowable noise levels. In addition, traffic noise levels will not increase more than 3 dBA as a result of the proposed project as shown in Table 6. Therefore, no significant impacts will result.

**Table 6**  
**Opening Year 2017 Peak Hour Roadway Noise Levels**

Receptors	Without Project dBA CNEL		With Project dBA CNEL		Difference (AM / PM)	Significant? (AM / PM)
	AM	PM	AM	PM		
1 – Industrial (N)	57.0	57.8	58.2	58.8	+1.2 / +1.0	No / No
2 – Industrial (E)	61.3	62.3	63.3	64.1	+2.0 / +1.8	No / No
3 – Single Family Residential (NE)	<b>57.9</b>	<b>59.4</b>	<b>59.7</b>	<b>60.8</b>	+1.8 / +1.4	No / No
4 – Commercial (E)	57.4	58.2	58.2	59.0	+0.8 / +0.8	No / No
5 – Single Family Residential (SE)	53.3	54.0	53.6	54.4	+0.3 / +0.4	No / No
6 – Single Family Residential (SE)	<b>60.7</b>	<b>61.4</b>	<b>60.9</b>	<b>61.8</b>	+0.2 / +0.4	No / No
7 – Single Family Residential (NW)	<b>60.2</b>	<b>61.1</b>	<b>60.9</b>	<b>61.8</b>	+0.7 / +0.7	No / No
<b>Bolded</b> noise levels exceed 55 dBA exterior threshold for residential uses.						

### 6.3 Vibration Impacts

#### CONSTRUCTION VIBRATION

Construction activities that use vibratory rollers and bulldozers are repetitive sources of vibration; therefore, the *continuous* threshold is used. Industrial uses are located to the north and east of the project site. As a worst case scenario, the *historic and some older buildings* threshold is used. Based on the threshold criteria summarized in Tables 4 and 5, vibration from use of heavy construction equipment for the proposed project would be below the thresholds to cause damage to nearby structures and result in less than *barely perceptible* vibration at the four receptors shown in Table 7 (Distances to Vibration Receptors) and Table 8 (Construction Vibration Impacts).

**Table 7**  
**Distances to Vibration Receptors**

Receptors	Distance from Center of Project Site (ft)
1 – Industrial (N)	640
2 – Industrial (E)	510
3 – Industrial (S)	421
4 – Park (S)	544

Construction of the project does not require rock blasting, pile driving, or the use of a jack hammer, but will use a vibratory roller, and large bulldozer, and loaded trucks. All of the receptors will experience less than *barely perceptible* vibration from construction of the proposed project. Furthermore, these construction activities will be limited to the hours of 7:00 AM to 7:00 PM Mondays through Friday and the hours of 8:00 AM to 5:00 PM on Saturdays. With regard to long-term operational impacts, activities associated with the project will not result in any vibration-related impacts to adjacent or on-site properties.

**Table 8**  
**Construction Vibration Impacts**

Receptors	Equipment	PPVref	Distance (feet)	PPV
1 – Single Family Home (NE)	Vibratory Roller	0.21	640	0.0031
2 – Storage Facility (N)	Vibratory Roller	0.21	510	0.0042
3 – Single Family Home (E)	Vibratory Roller	0.21	421	0.0053
4 – Single Family Home (E)	Vibratory Roller	0.21	544	0.0038
1 – Single Family Home (NE)	Large Bulldozer	0.089	640	0.0013
2 – Storage Facility (N)	Large Bulldozer	0.089	510	0.0018
3 – Single Family Home (E)	Large Bulldozer	0.089	421	0.0023
4 – Single Family Home (E)	Large Bulldozer	0.089	544	0.0016
1 – Single Family Home (NE)	Loaded Truck	0.076	640	0.0011
2 – Storage Facility (N)	Loaded Truck	0.076	510	0.0015
3 – Single Family Home (E)	Loaded Truck	0.076	421	0.0019
4 – Single Family Home (E)	Loaded Truck	0.076	544	0.0014

#### OPERATIONAL VIBRATION

Operation of the proposed project will include heavy-duty truck traffic along Center Street. According to the Federal Transit Administration, it is unusual for vibration from sources such as trucks to be perceptible.<sup>9</sup> However, according to Caltrans heavy trucks can impart groundborne vibration when the pavement is not smooth.<sup>10</sup> Therefore, to provide a worst case analysis, potential building damage due to project operation has been analyzed. Currently, there is concern regarding impacts to the Adobe structure located north of Center Street to the west of Orange Street (APN 246-082-002) due to heavy trucks traveling along Center Street.

The structure is located approximately 88 feet from the centerline of the nearest lane on Center Street. According to Caltrans, the highest truck traffic vibrations generated on freeway shoulders is 2.0 PPV mm/sec (0.079 PPV in/sec). At 88 feet, the vibration level reaching the Adobe structure is 0.015 PPV. According to project trip generation as estimated by Kunzman Associates, the proposed project is anticipated to generate 64 heavy-duty trucks per day, with a maximum of five heavy-duty trucks during the PM peak hour. Although truck trips will occur periodically, the *continuous* threshold has been utilized to provide a worst case analysis. Based on the Caltrans threshold for *historic and some old buildings* as summarized in Table 4, heavy truck traffic on Center Street will not result in structure damage due to operation-related groundborne vibration. The Caltrans Transportation and Construction Vibration Guidance Manual also provides alternative thresholds, as summarized in Table 9 (Vibration Criteria for Buildings).

**Table 9**  
**Vibration Criteria for Buildings**

Criteria	Building Type	Continuous Threshold PPV (in/sec)
Swiss Association of Standardization	Class IV: Construction very sensitive to vibration; objects of historic interest	0.12
Konan	Historic and Sensitive Buildings	0.12
AASHTO	Historic Sites or other critical locations	0.10
Source: Caltrans 2013		

As shown in Table 9, periodic heavy truck traffic occurring along Center Street will not exceed vibration criteria for structural damage to historic and sensitive buildings. In addition, According to the Whiffen vibration criteria for continuous vibration, vibration levels of 0.006 – 0.019 are unlikely to cause damage to buildings of any type. The 0.015 PPV resulting from heavy truck traffic will be within this continuous threshold. Therefore, no substantial impact will result.

## 6.4 Airport Noise

The project site is located with two miles of a public or private use airport or helipad. Therefore, no substantial impacts will occur.





## Exhibit 4 Receptors - Construction

Center Street Commerce Building Project  
6550 Center Street, Riverside, California

Source: Google Earth, 2015  
<http://www.migom.com> • 951-787-9222



Planning Commission - Exhibit 1 - Development Review Committee Staff Report  
Development Review Committee - Exhibit 7 - CEQA Documents

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**Exhibit 5 Receptors - Traffic Noise**  
 Center Street Commerce Building Project  
 6550 Center Street, Riverside, California

Source: Google Earth, 2015  
<http://www.migom.com> • 951-787-9222



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## 7 MITIGATION MEASURES

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The following mitigation measures are required to ensure that project-related noise levels will not exceed established thresholds.

- N-1** Limit construction activities to the hours of 7:00 AM to 7:00 PM Monday through Friday and the hours of 8:00 AM to 5:00 PM on Saturdays. Construction activity shall be prohibited on Sundays and federal holidays. This mitigation measure must be implemented throughout construction and may be periodically monitored by the Planning Director or designee during routine inspections.
- N-2** Prior to issuance of grading permits, the Applicant shall submit a mitigation plan prepared by a qualified engineer or other acoustical expert for review and approval by the Planning Division that identifies noise control measures that achieve a minimum 10 dBA reduction in construction-related noise levels. The mitigation plan may include use of sound curtains, engineered equipment controls, or other methods. Noise control requirements shall be noted on project construction drawings and verified by the Building Department during standard inspection procedures.

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- <sup>1</sup> California Department of Transportation. Basics of Highway Noise: Technical Noise Supplement. November 2009.
- <sup>2</sup> California Governor's Office of Planning and Research. General Plan Guidelines. 2003
- <sup>3</sup> California Department of Transportation. Transportation- and Construction-Induced Vibration Guidance Manual. June 2004
- <sup>4</sup> Federal Transit Administration. *Transit Noise and Vibration Impact Assessment*. 2006
- <sup>5</sup> California Department of Transportation. *Transportation and Construction Vibration Guidance Manual. Division of Environmental Analysis. September 2013*
- <sup>6</sup> United States Bureau of Mines. Mining Machinery Noise Control Guidelines. 1983
- <sup>7</sup> United States Bureau of Mines. Noise Abatement Techniques for Construction Equipment. August 1979
- <sup>8</sup> Kunzman Associates, Inc. Center Street Warehouse Project Traffic Impact Analysis. January 19, 2016
- <sup>9</sup> Federal Transit Administration. Transit Noise and Vibration Impact Assessment. May 2006
- <sup>10</sup> California Department of Transportation, Transportation and Construction Vibration Guidance Manual, September 2013



## Appendix A Noise Measurement Data

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Planning Commission - Exhibit 1 - Development Review Committee Staff Report  
Development Review Committee - Exhibit 7 - CEQA Documents

Attachment 3 - City Planning Commission Report and Exhibits - April 05, 2018

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## **Appendix B Construction Noise and Vibration Output Data**

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Planning Commission - Exhibit 1 - Development Review Committee Staff Report  
Development Review Committee - Exhibit 7 - CEQA Documents

Report date: 6/4/2015  
Case Description: 1 Demolition

## ---- Receptor #1 ----

Description	Land Use	Baselines (dBA)					
		Daytime	Evening	Night			
Industrial (N)	Industrial	70	70	70			
Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)		Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40			80.7	640	
Excavator	No	40			80.7	640	
Excavator	No	40			80.7	640	
Dozer	No	40			81.7	640	
Dozer	No	40			81.7	640	
Concrete Saw	No	20			89.6	640	

## Results

Equipment	Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)							
	*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq
Excavator	58.6	54.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	58.6	54.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	58.6	54.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	59.5	55.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	59.5	55.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Saw	67.4	60.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	67.4	64.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

## ---- Receptor #2 ----

Description	Land Use	Baselines (dBA)				
		Daytime	Evening	Night		
Industrial (E)	Industrial	70	70	70		
Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)		Receptor Distance (feet)	Estimated Shielding (dBA)
			Actual Lmax (dBA)			
Excavator	No	40		80.7	510	
Excavator	No	40		80.7	510	
Excavator	No	40		80.7	510	
Dozer	No	40		81.7	510	
Dozer	No	40		81.7	510	
Concrete Saw	No	20		89.6	510	

## Results

Equipment	Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)							
	*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq
Excavator	60.5	56.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	60.5	56.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	60.5	56.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	61.5	57.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	61.5	57.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Saw	69.4	62.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	69.4	66.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

		---- Receptor #3 ----												
Description	Land Use	Baselines (dBA)												
		Daytime	Evening	Night										
Industrial (S)	Industrial	70		70		70								
Equipment														
Description	Device	Usage(%)	Spec	Actual	Receptor	Estimated								
			Lmax	Lmax	Distance	Shielding								
			(dBA)	(dBA)	(feet)	(dBA)								
Excavator	No		40		80.7	421	0							
Excavator	No		40		80.7	421	0							
Excavator	No		40		80.7	421	0							
Dozer	No		40		81.7	421	0							
Dozer	No		40		81.7	421	0							
Concrete Saw	No		20		89.6	421	0							
Results														
Calculated (dBA)			Noise Limits (dBA)				Noise Limit Exceedance (dBA)							
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator	62.2	58.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	62.2	58.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	62.2	58.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	63.2	59.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	63.2	59.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Saw	71.1	64.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	71.1	67.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
*Calculated Lmax is the Loudest value.														
		---- Receptor #4 ----												
Description	Land Use	Baselines (dBA)												
		Daytime	Evening	Night										
Park (S)	Industrial	65		65		65								
Equipment														
Description	Device	Usage(%)	Spec	Actual	Receptor	Estimated								
			Lmax	Lmax	Distance	Shielding								
			(dBA)	(dBA)	(feet)	(dBA)								
Excavator	No		40		80.7	544	0							
Excavator	No		40		80.7	544	0							
Excavator	No		40		80.7	544	0							
Dozer	No		40		81.7	544	0							
Dozer	No		40		81.7	544	0							
Concrete Saw	No		20		89.6	544	0							
Results														
Calculated (dBA)			Noise Limits (dBA)				Noise Limit Exceedance (dBA)							
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator	60	56	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	60	56	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	60	56	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	60.9	57	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	60.9	57	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Saw	68.8	61.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	68.8	65.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
*Calculated Lmax is the Loudest value.														

Report date: 6/4/2015  
Case Description: 2 Site Preparation

		---- Receptor #1 ----												
		Baselines (dBA)												
Description	Land Use	Daytime	Evening	Night										
Industrial (N)	Industrial	70	70	70										
		Equipment												
		Impact	Spec	Actual	Receptor	Estimated								
		Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)							
Description		No	40	84		640	0							
Tractor		No	40	84		640	0							
Backhoe		No	40		77.6	640	0							
Backhoe		No	40		77.6	640	0							
Dozer		No	40		81.7	640	0							
Dozer		No	40		81.7	640	0							
Dozer		No	40		81.7	640	0							
		Results												
		Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)						
				Day	Evening		Night	Day		Evening		Night		
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Tractor		61.9	57.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor		61.9	57.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		55.4	51.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		55.4	51.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer		59.5	55.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer		59.5	55.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer		59.5	55.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total		61.9	64.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		*Calculated Lmax is the Loudest value.												
		---- Receptor #2 ----												
		Baselines (dBA)												
Description	Land Use	Daytime	Evening	Night										
Industrial (E)	Industrial	70	70	70										
		Equipment												
		Impact	Spec	Actual	Receptor	Estimated								
		Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)							
Description		No	40	84		510	0							
Tractor		No	40	84		510	0							
Backhoe		No	40		77.6	510	0							
Backhoe		No	40		77.6	510	0							
Dozer		No	40		81.7	510	0							
Dozer		No	40		81.7	510	0							
Dozer		No	40		81.7	510	0							
		Results												
		Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)						
				Day	Evening		Night	Day		Evening		Night		
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Tractor		63.8	59.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor		63.8	59.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		57.4	53.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		57.4	53.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer		61.5	57.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer		61.5	57.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer		61.5	57.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total		63.8	66.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		*Calculated Lmax is the Loudest value.												

		---- Receptor #3 ----													
Description	Land Use	Baselines (dBA)													
		Daytime	Evening	Night											
		70	70	70											
		Equipment													
Description		Impact Device	Usage(%)	Spec	Actual	Receptor	Estimated								
				Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)								
Tractor		No		40	84	421	0								
Tractor		No		40	84	421	0								
Backhoe		No		40		77.6	421	0							
Backhoe		No		40		77.6	421	0							
Dozer		No		40		81.7	421	0							
Dozer		No		40		81.7	421	0							
Dozer		No		40		81.7	421	0							
		Results													
		Calculated (dBA)				Noise Limits (dBA)				Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Tractor		65.5		61.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor		65.5		61.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		59.1		55.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		59.1		55.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer		63.2		59.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer		63.2		59.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer		63.2		59.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total		65.5		67.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		*Calculated Lmax is the Loudest value.													

		---- Receptor #4 ----													
Description Park (S)	Land Use Industrial	Baselines (dBA)													
		Daytime	Evening	Night											
		65	65	65											
		Equipment													
Description		Impact	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)								
		Device													
Tractor		No	40	84		544	0								
Tractor		No	40	84		544	0								
Backhoe		No	40		77.6	544	0								
Backhoe		No	40		77.6	544	0								
Dozer		No	40		81.7	544	0								
Dozer		No	40		81.7	544	0								
Dozer		No	40		81.7	544	0								
		Results													
		Calculated (dBA)				Noise Limits (dBA)				Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Tractor		63.3	N/A	59.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor		63.3	N/A	59.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		56.8	N/A	52.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		56.8	N/A	52.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer		60.9	N/A	57	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer		60.9	N/A	57	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer		60.9	N/A	57	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total		63.3	65.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		*Calculated Lmax is the Loudest value.													

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 6/4/2015  
Case Description: 3 Grading

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Industrial (N)	Industrial	70	70	70

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Dozer	No	40			81.7	640
Tractor	No	40		84		640
Backhoe	No	40			77.6	640
Grader	No	40		85		640
Excavator	No	40			80.7	640
Excavator	No	40			80.7	640
Scraper	No	40			83.6	640
Scraper	No	40			83.6	640

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer	59.5	55.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	61.9	57.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	55.4	51.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	62.9	58.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	58.6	54.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	58.6	54.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	61.4	57.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	61.4	57.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	62.9	65.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Industrial (E)	Industrial	70	70	70

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Dozer	No	40			81.7	510
Tractor	No	40		84		510
Backhoe	No	40			77.6	510
Grader	No	40		85		510
Excavator	No	40			80.7	510
Excavator	No	40			80.7	510
Scraper	No	40			83.6	510
Scraper	No	40			83.6	510

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer	61.5	57.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	63.8	59.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	57.4	53.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	64.8	60.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	60.5	56.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	60.5	56.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	63.4	59.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	63.4	59.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	64.8	67.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

---- Receptor #3 ----														
Description	Land Use	Baselines (dBA)												
		Daytime	Evening	Night										
		70	70	70										
Equipment														
	Impact		Spec	Actual	Receptor	Estimated								
	Device	Usage(%)	Lmax	Lmax	Distance	Shielding								
			(dBA)	(dBA)	(feet)	(dBA)								
Dozer	No		40		81.7	421	0							
Tractor	No		40	84		421	0							
Backhoe	No		40		77.6	421	0							
Grader	No		40	85		421	0							
Excavator	No		40		80.7	421	0							
Excavator	No		40		80.7	421	0							
Scraper	No		40		83.6	421	0							
Scraper	No		40		83.6	421	0							
Results														

---- Receptor #4 ----														
Description	Land Use	Baselines (dBA)												
		Daytime	Evening	Night										
Park (S)	Industrial	65	65	65										
	Impact	Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding							
				Spec Lmax (dBA)	Actual Lmax (dBA)									
Dozer	No		40		81.7	544	0							
Tractor	No		40	84		544	0							
Backhoe	No		40		77.6	544	0							
Grader	No		40	85		544	0							
Excavator	No		40		80.7	544	0							
Excavator	No		40		80.7	544	0							
Scraper	No		40		83.6	544	0							
Scraper	No		40		83.6	544	0							
Results														
Calculated (dBA)				Noise Limits (dBA)				Noise Limit Exceedance (dBA)						
		Day		Evening		Night		Day		Evening		Night		
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	
Dozer		60.9	57	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor		63.3	59.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		56.8	52.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader		64.3	60.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator		60	56	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator		60	56	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper		62.8	58.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper		62.8	58.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total		64.3	66.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
*Calculated Lmax is the Loudest value.														



Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 6/4/2015  
Case Description: 4 Building Construction

		---- Receptor #1 ----		
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Industrial (N)	Industrial	70	70	70
		Equipment		
		Spec Lmax	Actual Lmax	Receptor Distance
		(dBA)	(dBA)	(feet)
Impact Device	Usage(%)			Estimated Shielding (dBA)
Crane	No	16	80.6	640
All Other Equipment > 5 HP	No	50	85	640
All Other Equipment > 5 HP	No	50	85	640
All Other Equipment > 5 HP	No	50	85	640
Tractor	No	40	84	640
Backhoe	No	40	77.6	640
Backhoe	No	40	77.6	640
Welder / Torch	No	40	74	640
Generator	No	50	80.6	640

		Results													
		Calculated (dBA)				Noise Limits (dBA)				Noise Limit Exceedance (dBA)					
		Day		Evening		Night		Day		Evening		Night			
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane		58.4		50.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP		62.9		59.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP		62.9		59.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP		62.9		59.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor		61.9		57.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		55.4		51.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		55.4		51.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Welder / Torch		51.9		47.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator		58.5		55.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total		62.9		66.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

		---- Receptor #2 ----		
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Industrial (E)	Industrial	70	70	70
		Equipment		
		Spec Lmax	Actual Lmax	Receptor Distance
		(dBA)	(dBA)	(feet)
Impact Device	Usage(%)			Estimated Shielding (dBA)
Crane	No	16	80.6	510
All Other Equipment > 5 HP	No	50	85	510
All Other Equipment > 5 HP	No	50	85	510
All Other Equipment > 5 HP	No	50	85	510
Tractor	No	40	84	510
Backhoe	No	40	77.6	510
Backhoe	No	40	77.6	510
Welder / Torch	No	40	74	510
Generator	No	50	80.6	510

		Results													
		Calculated (dBA)				Noise Limits (dBA)				Noise Limit Exceedance (dBA)					
		Day		Evening		Night		Day		Evening		Night			
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane		60.4		52.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP		64.8		61.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP		64.8		61.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP		64.8		61.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor		63.8		59.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		57.4		53.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		57.4		53.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Welder / Torch		53.8		49.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator		60.5		57.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total		64.8		68.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

		----- Receptor #3 -----													
Description	Land Use	Baselines (dBA)													
		Daytime	Evening	Night											
Industrial (S)	Industrial	70		70	70										
		Equipment													
Description	Impact Device	Usage(%)	Spec	Actual	Receptor	Estimated									
			Lmax	Lmax	Distance	Shielding									
			(dBA)	(dBA)	(feet)	(dBA)									
Crane	No	16			80.6	421	0								
All Other Equipment > 5 HP	No	50	85			421	0								
All Other Equipment > 5 HP	No	50	85			421	0								
All Other Equipment > 5 HP	No	50	85			421	0								
Tractor	No	40	84			421	0								
Backhoe	No	40			77.6	421	0								
Backhoe	No	40			77.6	421	0								
Welder / Torch	No	40			74	421	0								
Generator	No	50			80.6	421	0								
		Results													
		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane		62	54.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP		66.5	63.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP		66.5	63.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP		66.5	63.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor		65.5	61.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		59.1	55.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		59.1	55.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Welder / Torch		55.5	51.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator		62.1	59.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total		66.5	70	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		*Calculated Lmax is the Loudest value.													
		----- Receptor #4 -----													
Description	Land Use	Baselines (dBA)													
		Daytime	Evening	Night											
Park (S)	Industrial	65		65	65										
		Equipment													
Description	Impact Device	Usage(%)	Spec	Actual	Receptor	Estimated									
			Lmax	Lmax	Distance	Shielding									
			(dBA)	(dBA)	(feet)	(dBA)									
Crane	No	16			80.6	544	0								
All Other Equipment > 5 HP	No	50	85			544	0								
All Other Equipment > 5 HP	No	50	85			544	0								
All Other Equipment > 5 HP	No	50	85			544	0								
Tractor	No	40	84			544	0								
Backhoe	No	40			77.6	544	0								
Backhoe	No	40			77.6	544	0								
Welder / Torch	No	40			74	544	0								
Generator	No	50			80.6	544	0								
		Results													
		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane		59.8	51.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP		64.3	61.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP		64.3	61.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP		64.3	61.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor		63.3	59.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		56.8	52.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		56.8	52.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Welder / Torch		53.3	49.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator		59.9	56.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total		64.3	67.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		*Calculated Lmax is the Loudest value.													

Report date: 6/4/2015  
Case Description: 5 Architectural Coating

## ---- Receptor #1 ----

Description	Land Use	Baselines (dBA)													
		Daytime	Evening	Night											
Industrial (N)	Industrial	70	70	70											
Equipment															
Description		Impact Device	Usage(%)	Spec	Actual	Receptor	Estimated								
				Lmax	Lmax	Distance	Shielding								
Compressor (air)		No	40												
					77.7	640	0								
Results															
Calculated (dBA)				Noise Limits (dBA)				Noise Limit Exceedance (dBA)							
		Day		Evening		Night		Day		Evening		Night			
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)		55.5	51.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	55.5	51.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
*Calculated Lmax is the Loudest value.															

## ---- Receptor #2 ----

Description	Land Use	Baselines (dBA)													
		Daytime	Evening	Night											
Industrial (E)	Industrial	70	70	70											
Equipment															
Description		Impact		Spec	Actual	Receptor	Estimated								
		Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)								
Compressor (air)		No	40		77.7	510	0								
Results															
Calculated (dBA)				Noise Limits (dBA)				Noise Limit Exceedance (dBA)							
		Day		Evening		Night		Day		Evening		Night			
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Leq	
Compressor (air)		57.5	53.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	Total	57.5	53.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
*Calculated Lmax is the Loudest value.															

## ---- Receptor #3 ----

Description	Land Use	Baselines (dBA)													
		Daytime	Evening	Night											
Industrial (S)	Industrial	70	70	70											
Equipment															
Description		Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)								
Compressor (air)		No	40		77.7	421	0								
Results															
Calculated (dBA)				Noise Limits (dBA)				Noise Limit Exceedance (dBA)							
				Day	Evening			Night			Day	Evening			
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)		59.2	55.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	59.2	55.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
*Calculated Lmax is the Loudest value.															

		---- Receptor #4 ----												
Description	Land Use	Baselines (dBA)												
		Daytime	Evening	Night										
Park (S)	Industrial	65	65	65										
		Equipment												
Description	Device	Usage(%)	Spec	Actual	Receptor	Estimated								
			Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)								
Compressor (air)	No	40		77.7	544	0								
		Results												
		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)				
Equipment				Day	Evening	Night		Day		Evening		Night		
		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	
Compressor (air)		56.9		53	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	56.9		53	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		*Calculated Lmax is the Loudest value.												

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 6/4/2015  
Case Description: 6 Paving

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)			Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
		Daytime	Evening	Night				
Industrial (N)	Industrial	70	70	70				
Description	Device	Usage(%)	Equipment		Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
			Impact	Usage(%)				
Paver	No	50				77.2	640	0
Paver	No	50				77.2	640	0
Roller	No	20				80	640	0
Roller	No	20				80	640	0
All Other Equipment > 5 HP	No	50				85	640	0
All Other Equipment > 5 HP	No	50				85	640	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)							
			Day		Evening		Night		Day		Evening		Night	
	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver	55.1	52.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	55.1	52.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	57.9	50.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	57.9	50.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	62.9	59.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	62.9	59.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	62.9	64	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)			Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
		Daytime	Evening	Night				
Industrial (E)	Industrial	70	70	70				
Description	Device	Usage(%)	Equipment		Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
			Impact	Usage(%)				
Paver	No	50				77.2	510	0
Paver	No	50				77.2	510	0
Roller	No	20				80	510	0
Roller	No	20				80	510	0
All Other Equipment > 5 HP	No	50				85	510	0
All Other Equipment > 5 HP	No	50				85	510	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)							
			Day		Evening		Night		Day		Evening		Night	
	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver	60.4	52.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	64.8	61.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	64.8	61.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	64.8	61.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	63.8	59.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	57.4	53.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	64.8	68.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

		----- Receptor #3 -----													
Description	Land Use	Baselines (dBA)													
		Daytime	Evening	Night											
Industrial (S)	Industrial	70	70	70											
Description		Equipment													
		Impact	Spec	Actual	Receptor	Estimated									
		Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)								
Paver		No	50		77.2	421	0								
Paver		No	50		77.2	421	0								
Roller		No	20		80	421	0								
Roller		No	20		80	421	0								
All Other Equipment > 5 HP		No	50	85		421	0								
All Other Equipment > 5 HP		No	50	85		421	0								
Results															
		Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)							
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver		62	54.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver		66.5	63.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller		66.5	63.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller		66.5	63.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP		65.5	61.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP		59.1	55.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total		66.5	70	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
*Calculated Lmax is the Loudest value.															

		---- Receptor #4 ----													
		Baselines (dBA)													
Description	Land Use	Daytime	Evening	Night											
Park (S)	Industrial	65	65	65											
		Equipment													
		Impact	Spec	Actual	Receptor	Estimated									
Description		Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)								
Paver		No	50			77.2	544	0							
Paver		No		50		77.2	544	0							
Roller		No		20		80	544	0							
Roller		No		20		80	544	0							
All Other Equipment > 5 HP		No		50	85		544	0							
All Other Equipment > 5 HP		No		50	85		544	0							
Results															
		Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)							
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver		59.8		51.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver		64.3		61.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller		64.3		61.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller		64.3		61.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP		63.3		59.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP		56.8		52.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total		64.3		67.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
*Calculated Lmax is the Loudest value.															

### Center Street Warehouse

Receptors	Distance (ft)
1 – Industrial (N)	640
2 – Industrial (E)	510
3 – Industrial (S)	421
4 – Park (S)	544

Equipment	PPVref	D	n	Eref	Eequip	PPV
Vibratory Roller	0.21	640	1.3			0.0031
Vibratory Roller	0.21	510	1.3			0.0042
Vibratory Roller	0.21	421	1.3			0.0053
Vibratory Roller	0.21	544	1.3			0.0038
Large Bulldozer	0.089	640	1.3			0.0013
Large Bulldozer	0.089	510	1.3			0.0018
Large Bulldozer	0.089	421	1.3			0.0023
Large Bulldozer	0.089	544	1.3			0.0016
Loaded Truck	0.076	640	1.3			0.0011
Loaded Truck	0.076	510	1.3			0.0015
Loaded Truck	0.076	421	1.3			0.0019
Loaded Truck	0.076	544	1.3			0.0014

Table

Equipment	PPVref	Distance	PPV
Vibratory Roller	0.21	640	0.0031
Vibratory Roller	0.21	510	0.0042
Vibratory Roller	0.21	421	0.0053
Vibratory Roller	0.21	544	0.0038
Large Bulldozer	0.089	640	0.0013
Large Bulldozer	0.089	510	0.0018
Large Bulldozer	0.089	421	0.0023
Large Bulldozer	0.089	544	0.0016
Loaded Truck	0.076	640	0.0011
Loaded Truck	0.076	510	0.0015
Loaded Truck	0.076	421	0.0019
Loaded Truck	0.076	544	0.0014





## Appendix C SoundPLAN Output Data

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Planning Commission - Exhibit 1 - Development Review Committee Staff Report  
Development Review Committee - Exhibit 7 - CEQA Documents

Attachment 3 - City Planning Commission Report and Exhibits - April 05, 2018

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Center Street  
Opening Year 2017 Without Project  
Road

Stationing km	Traffic values			AM Veh/h	PM Veh/h	Speed km/h	Control device	Constr. Speed km/h	Affect. veh. %	Road surface	Gradient Min / Max %
	ADT Veh/24h	Vehicles type	Vehicle name								
	In entry direction										
Center Street (EB)											
0+000	4288	Total	-	132	272	-	none	-	-	Average (of DGAC and PCC)	0
0+000	4288	Automobiles	-	90	187	56	none	-	-	Average (of DGAC and PCC)	0
0+000	4288	Medium trucks	-	34	70	56	none	-	-	Average (of DGAC and PCC)	0
0+000	4288	Heavy trucks	-	7	13	56	none	-	-	Average (of DGAC and PCC)	0
0+000	4288	Buses	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+000	4288	Motorcycles	-	1	2	56	none	-	-	Average (of DGAC and PCC)	0
0+000	4288	Auxiliary Vehicle	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+544	4920	Total	-	166	283	-	none	-	-	Average (of DGAC and PCC)	0
0+544	4920	Automobiles	-	114	194	56	none	-	-	Average (of DGAC and PCC)	0
0+544	4920	Medium trucks	-	43	73	56	none	-	-	Average (of DGAC and PCC)	0
0+544	4920	Heavy trucks	-	8	14	56	none	-	-	Average (of DGAC and PCC)	0
0+544	4920	Buses	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+544	4920	Motorcycles	-	1	2	56	none	-	-	Average (of DGAC and PCC)	0
0+544	4920	Auxiliary Vehicle	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+794	4920	Total	-	166	283	-	none	-	-	Average (of DGAC and PCC)	0
0+794	4920	Automobiles	-	114	194	56	none	-	-	Average (of DGAC and PCC)	0
0+794	4920	Medium trucks	-	43	73	56	none	-	-	Average (of DGAC and PCC)	0
0+794	4920	Heavy trucks	-	8	14	56	none	-	-	Average (of DGAC and PCC)	0
0+794	4920	Buses	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+794	4920	Motorcycles	-	1	2	56	none	-	-	Average (of DGAC and PCC)	0
0+794	4920	Auxiliary Vehicle	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+948	4920	Total	-	166	283	-	none	-	-	Average (of DGAC and PCC)	0
0+948	4920	Automobiles	-	114	194	56	none	-	-	Average (of DGAC and PCC)	0
0+948	4920	Medium trucks	-	43	73	56	none	-	-	Average (of DGAC and PCC)	0
0+948	4920	Heavy trucks	-	8	14	56	none	-	-	Average (of DGAC and PCC)	0
0+948	4920	Buses	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+948	4920	Motorcycles	-	1	2	56	none	-	-	Average (of DGAC and PCC)	0
0+948	4920	Auxiliary Vehicle	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+184	6720	Total	-	206	428	-	Stop sign	0	-	Average (of DGAC and PCC)	0
1+184	6720	Automobiles	-	141	294	56	Stop sign	0	-	Average (of DGAC and PCC)	0
1+184	6720	Medium trucks	-	53	110	56	Stop sign	0	-	Average (of DGAC and PCC)	0
1+184	6720	Heavy trucks	-	10	21	56	Stop sign	0	-	Average (of DGAC and PCC)	0
1+184	6720	Buses	-	-	-	-	Stop sign	0	-	Average (of DGAC and PCC)	0
1+184	6720	Motorcycles	-	2	3	56	Stop sign	0	-	Average (of DGAC and PCC)	0
1+184	6720	Auxiliary Vehicle	-	-	-	-	Stop sign	0	-	Average (of DGAC and PCC)	0
1+253	6720	Total	-	206	428	-	none	-	-	Average (of DGAC and PCC)	0
1+253	6720	Automobiles	-	141	294	56	none	-	-	Average (of DGAC and PCC)	0
1+253	6720	Medium trucks	-	53	110	56	none	-	-	Average (of DGAC and PCC)	0
1+253	6720	Heavy trucks	-	10	21	56	none	-	-	Average (of DGAC and PCC)	0
1+253	6720	Buses	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+253	6720	Motorcycles	-	2	3	56	none	-	-	Average (of DGAC and PCC)	0
1+253	6720	Auxiliary Vehicle	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+516	-						-	-	-	-	-
Orange Street SB											
0+893	1904	Total	-	74	90	-	none	-	-	Average (of DGAC and PCC)	0

0+893	1904 Automobiles	-	50	61	56 none	-	-	Average (of DGAC and PCC)	0
0+893	1904 Medium trucks	-	19	23	56 none	-	-	Average (of DGAC and PCC)	0
0+893	1904 Heavy trucks	-	4	5	56 none	-	-	Average (of DGAC and PCC)	0
0+893	1904 Buses	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+893	1904 Motorcycles	-	1	1	56 none	-	-	Average (of DGAC and PCC)	0
0+893	1904 Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+072	1904 Total	-	74	90	none	-	-	Average (of DGAC and PCC)	0
1+072	1904 Automobiles	-	50	61	56 none	-	-	Average (of DGAC and PCC)	0
1+072	1904 Medium trucks	-	19	23	56 none	-	-	Average (of DGAC and PCC)	0
1+072	1904 Heavy trucks	-	4	5	56 none	-	-	Average (of DGAC and PCC)	0
1+072	1904 Buses	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+072	1904 Motorcycles	-	1	1	56 none	-	-	Average (of DGAC and PCC)	0
1+072	1904 Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+450	-	-	-	-	-	-	-	-	-
Center Street WB Traffic direction: In entry direction									
0+893	4192 Total	-	190	144	none	-	-	Average (of DGAC and PCC)	0
0+893	4192 Automobiles	-	130	99	56 none	-	-	Average (of DGAC and PCC)	0
0+893	4192 Medium trucks	-	49	37	56 none	-	-	Average (of DGAC and PCC)	0
0+893	4192 Heavy trucks	-	10	7	56 none	-	-	Average (of DGAC and PCC)	0
0+893	4192 Buses	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+893	4192 Motorcycles	-	1	1	56 none	-	-	Average (of DGAC and PCC)	0
0+893	4192 Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+228	4192 Total	-	190	144	Stop sign	0	-	Average (of DGAC and PCC)	0
1+228	4192 Automobiles	-	130	99	56 Stop sign	0	-	Average (of DGAC and PCC)	0
1+228	4192 Medium trucks	-	49	37	56 Stop sign	0	-	Average (of DGAC and PCC)	0
1+228	4192 Heavy trucks	-	10	7	56 Stop sign	0	-	Average (of DGAC and PCC)	0
1+228	4192 Buses	-	-	-	Stop sign	0	-	Average (of DGAC and PCC)	0
1+228	4192 Motorcycles	-	1	1	56 Stop sign	0	-	Average (of DGAC and PCC)	0
1+228	4192 Auxiliary Vehicle	-	-	-	Stop sign	0	-	Average (of DGAC and PCC)	0
1+427	4192 Total	-	190	144	none	-	-	Average (of DGAC and PCC)	0
1+427	4192 Automobiles	-	130	99	56 none	-	-	Average (of DGAC and PCC)	0
1+427	4192 Medium trucks	-	49	37	56 none	-	-	Average (of DGAC and PCC)	0
1+427	4192 Heavy trucks	-	10	7	56 none	-	-	Average (of DGAC and PCC)	0
1+427	4192 Buses	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+427	4192 Motorcycles	-	1	1	56 none	-	-	Average (of DGAC and PCC)	0
1+427	4192 Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+603	4208 Total	-	190	146	none	-	-	Average (of DGAC and PCC)	0
1+603	4208 Automobiles	-	130	100	56 none	-	-	Average (of DGAC and PCC)	0
1+603	4208 Medium trucks	-	49	38	56 none	-	-	Average (of DGAC and PCC)	0
1+603	4208 Heavy trucks	-	10	7	56 none	-	-	Average (of DGAC and PCC)	0
1+603	4208 Buses	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+603	4208 Motorcycles	-	1	1	56 none	-	-	Average (of DGAC and PCC)	0
1+603	4208 Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+873	4208 Total	-	190	146	none	-	-	Average (of DGAC and PCC)	0
1+873	4208 Automobiles	-	130	100	56 none	-	-	Average (of DGAC and PCC)	0
1+873	4208 Medium trucks	-	49	38	56 none	-	-	Average (of DGAC and PCC)	0
1+873	4208 Heavy trucks	-	10	7	56 none	-	-	Average (of DGAC and PCC)	0
1+873	4208 Buses	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+873	4208 Motorcycles	-	1	1	56 none	-	-	Average (of DGAC and PCC)	0
1+873	4208 Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
2+414	-	-	-	-	-	-	-	-	-
0+000	4208 Total	-	190	146	Stop sign	0	-	Average (of DGAC and PCC)	0
0+000	4208 Automobiles	-	130	100	56 Stop sign	0	-	Average (of DGAC and PCC)	0

0+000	4208 Medium trucks	-	49	38	56 Stop sign	0 -	Average (of DGAC and PCC)	0
0+000	4208 Heavy trucks	-	10	7	56 Stop sign	0 -	Average (of DGAC and PCC)	0
0+000	4208 Buses	-	-	-	Stop sign	0 -	Average (of DGAC and PCC)	0
0+000	4208 Motorcycles	-	1	1	56 Stop sign	0 -	Average (of DGAC and PCC)	0
0+000	4208 Auxiliary Vehicle	-	-	-	Stop sign	0 -	Average (of DGAC and PCC)	0
Orange Street NB Traffic direction: In entry direction								
0+893	360 Total	-	16	13	- none	- -	Average (of DGAC and PCC)	0
0+893	360 Automobiles	-	10	8	56 none	- -	Average (of DGAC and PCC)	0
0+893	360 Medium trucks	-	4	3	56 none	- -	Average (of DGAC and PCC)	0
0+893	360 Heavy trucks	-	1	1	56 none	- -	Average (of DGAC and PCC)	0
0+893	360 Buses	-	-	-	none	- -	Average (of DGAC and PCC)	0
0+893	360 Motorcycles	-	1	1	56 none	- -	Average (of DGAC and PCC)	0
0+893	360 Auxiliary Vehicle	-	-	-	none	- -	Average (of DGAC and PCC)	0
1+331	360 Total	-	16	13	- Stop sign	0 -	Average (of DGAC and PCC)	0
1+331	360 Automobiles	-	10	8	56 Stop sign	0 -	Average (of DGAC and PCC)	0
1+331	360 Medium trucks	-	4	3	56 Stop sign	0 -	Average (of DGAC and PCC)	0
1+331	360 Heavy trucks	-	1	1	56 Stop sign	0 -	Average (of DGAC and PCC)	0
1+331	360 Buses	-	-	-	Stop sign	0 -	Average (of DGAC and PCC)	0
1+331	360 Motorcycles	-	1	1	56 Stop sign	0 -	Average (of DGAC and PCC)	0
1+331	360 Auxiliary Vehicle	-	-	-	Stop sign	0 -	Average (of DGAC and PCC)	0
1+450	-	-	-	-	-	- -	-	0
0+000	360 Total	-	16	13	- none	- -	Average (of DGAC and PCC)	0
0+000	360 Automobiles	-	10	8	56 none	- -	Average (of DGAC and PCC)	0
0+000	360 Medium trucks	-	4	3	56 none	- -	Average (of DGAC and PCC)	0
0+000	360 Heavy trucks	-	1	1	56 none	- -	Average (of DGAC and PCC)	0
0+000	360 Buses	-	-	-	none	- -	Average (of DGAC and PCC)	0
0+000	360 Motorcycles	-	1	1	56 none	- -	Average (of DGAC and PCC)	0
0+000	360 Auxiliary Vehicle	-	-	-	none	- -	Average (of DGAC and PCC)	0
Main Street NB Traffic direction: In entry direction								
1+023	21400 Total	-	877	921	- none	- -	Average (of DGAC and PCC)	0
1+023	21400 Automobiles	-	604	634	56 none	- -	Average (of DGAC and PCC)	0
1+023	21400 Medium trucks	-	226	237	56 none	- -	Average (of DGAC and PCC)	0
1+023	21400 Heavy trucks	-	42	45	56 none	- -	Average (of DGAC and PCC)	0
1+023	21400 Buses	-	-	-	none	- -	Average (of DGAC and PCC)	0
1+023	21400 Motorcycles	-	5	5	56 none	- -	Average (of DGAC and PCC)	0
1+023	21400 Auxiliary Vehicle	-	-	-	none	- -	Average (of DGAC and PCC)	0
1+559	-	-	-	-	-	- -	-	0
0+000	21400 Total	-	877	921	- none	- -	Average (of DGAC and PCC)	0
0+000	21400 Automobiles	-	604	634	56 none	- -	Average (of DGAC and PCC)	0
0+000	21400 Medium trucks	-	226	237	56 none	- -	Average (of DGAC and PCC)	0
0+000	21400 Heavy trucks	-	42	45	56 none	- -	Average (of DGAC and PCC)	0
0+000	21400 Buses	-	-	-	none	- -	Average (of DGAC and PCC)	0
0+000	21400 Motorcycles	-	5	5	56 none	- -	Average (of DGAC and PCC)	0
0+000	21400 Auxiliary Vehicle	-	-	-	none	- -	Average (of DGAC and PCC)	0
Main Street NB1 Traffic direction: In entry direction								
1+023	19608 Total	-	740	971	- none	- -	Average (of DGAC and PCC)	0
1+023	19608 Automobiles	-	509	669	56 none	- -	Average (of DGAC and PCC)	0
1+023	19608 Medium trucks	-	191	250	56 none	- -	Average (of DGAC and PCC)	0
1+023	19608 Heavy trucks	-	36	47	56 none	- -	Average (of DGAC and PCC)	0
1+023	19608 Buses	-	-	-	none	- -	Average (of DGAC and PCC)	0
1+023	19608 Motorcycles	-	4	5	56 none	- -	Average (of DGAC and PCC)	0
1+023	19608 Auxiliary Vehicle	-	-	-	none	- -	Average (of DGAC and PCC)	0
1+560	-	-	-	-	-	- -	-	0

Center Street  
 Opening Year 2017 Without Project  
 Receivers

No.	Receiver name	Floor	Level	
			AM	PM
			dB(A)	
1	1 Industrial (N)	GF	57.0	57.8
2	2 Industrial (E)	GF	61.3	62.3
3	3 Single Family Residential (NE)	GF	57.9	59.4
4	4 Commercial (EE)	GF	57.4	58.2
5	5 Single Family Home (SE)	GF	53.3	54.0
6	6 Single Family Home (SE)	GF	60.7	61.4
7	7 Single Family Home (NW)	GF	60.2	61.1



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Planning Commission - Exhibit 1 - Development Review Committee Staff Report  
Development Review Committee - Exhibit 7 - CEQA Documents

Center Street  
Opening Year 2017 Without Project  
Contributions

Source name		Level	
		AM	PM
		dB(A)	
<b>1 Industrial (N)</b>	<b>GF</b>	<b>57.0</b>	<b>57.8</b>
Center Street (EB)		53.5	55.8
Center Street WB		54.4	53.2
Main Street NB		34.8	35.0
Main Street NB1		34.0	35.2
Orange Street NB		23.7	23.3
Orange Street SB		29.8	30.7
<b>2 Industrial (E)</b>	<b>GF</b>	<b>61.3</b>	<b>62.3</b>
Center Street (EB)		58.4	60.8
Center Street WB		58.1	56.8
Main Street NB		33.1	33.3
Main Street NB1		32.3	33.5
Orange Street NB		27.7	27.4
Orange Street SB		33.9	34.8
<b>3 Single Family Residential (NE)</b>	<b>GF</b>	<b>57.9</b>	<b>59.4</b>
Center Street (EB)		54.8	58.0
Center Street WB		54.8	53.5
Main Street NB		29.0	29.2
Main Street NB1		28.2	29.4
Orange Street NB		34.6	34.1
Orange Street SB		40.6	41.4
<b>4 Commercial (EE)</b>	<b>GF</b>	<b>57.4</b>	<b>58.2</b>
Center Street (EB)		49.6	52.4
Center Street WB		49.8	48.4
Main Street NB		30.0	30.2
Main Street NB1		29.2	30.4
Orange Street NB		48.3	47.6
Orange Street SB		54.7	55.6
<b>5 Single Family Home (SE)</b>	<b>GF</b>	<b>53.3</b>	<b>54.0</b>
Center Street (EB)		39.0	41.8
Center Street WB		39.3	37.9
Main Street NB		30.1	30.3
Main Street NB1		29.3	30.5
Orange Street NB		46.3	45.7
Orange Street SB		51.9	52.7
<b>6 Single Family Home (SE)</b>	<b>GF</b>	<b>60.7</b>	<b>61.4</b>

Center Street (EB)	38.3	41.1
Center Street WB	38.7	37.3
Main Street NB	30.4	30.6
Main Street NB1	29.6	30.8
Orange Street NB	51.8	51.1
Orange Street SB	60.1	60.9
<b>7 Single Family Home (NW) GF</b>	<b>60.2</b>	<b>61.1</b>
Center Street (EB)	55.9	58.9
Center Street WB	57.6	56.4
Main Street NB	45.8	46.0
Main Street NB1	45.0	46.2
Orange Street NB	17.8	17.2
Orange Street SB	23.7	24.6

Center Street  
Opening Year 2017 Without Project  
Receiver Spectra

No.	Name	Time slice	50 Hz	63 Hz	80 Hz	100 Hz	125 Hz	160 Hz	200 Hz	250 Hz	315 Hz	400 Hz	500 Hz	630 Hz	800 Hz	1 kHz	1 kHz	2 kHz	2 kHz	2 kHz	3 kHz	4 kHz	5 kHz	6 kHz	8 kHz	10 kHz
1	1 Industrial (N)	AM	30.3	35.8	39.4	41.5	42.9	44.2	45	45	44.5	44.2	45.1	46.2	45.9	46.6	45.3	44.9	43.4	42.9	42.9	41.4	39.6	36.7	34	30.3
1	1 Industrial (N)	PM	30.9	36.5	40	42.1	43.5	44.8	45.7	45.7	45.3	45	45.9	46.9	46.6	47.2	46	45.8	44.3	43.7	43.7	42.2	40.4	37.6	34.8	31.2
2	2 Industrial (E)	AM	32.6	38.2	41.8	43.9	45.3	46.7	47.7	48	48.7	48.9	50.1	51.5	50.9	51.3	50	49.6	48.7	47.8	46.8	44.8	42.2	40.3	37.7	34.3
2	2 Industrial (E)	PM	33.7	39.3	42.8	44.9	46.4	47.8	48.8	49.1	49.9	49.8	51.1	52.9	52.1	52.2	50.7	50.3	49.4	48.5	47.6	45.7	43.1	41.2	38.6	35.1
3	3 Single Family Residential (NE)	AM	30.9	36.5	40	42.1	43.6	44.9	45.8	45.8	45.5	45.2	46.2	47.2	46.8	47.6	46.4	45.8	44.4	43.8	43.7	41.9	40.4	37.5	34.8	31.2
3	3 Single Family Residential (NE)	PM	32.2	37.8	41.3	43.4	44.9	46.2	47.1	47.3	46.9	46.8	47.7	48.5	48.3	49	47.9	47.5	46.1	45.3	45.2	43.3	41.8	39.1	36.4	32.8
4	4 Commercial (EE)	AM	30.2	35.7	39.3	41.4	42.8	44.2	45.1	45.1	45.2	44.6	45.6	47.4	46.7	46.9	45.4	45.1	44.1	43.6	42.9	41.3	39.1	36.5	33.7	30.2
4	4 Commercial (EE)	PM	31.1	36.6	40.2	42.3	43.7	45.1	46	46	46	45.4	46.4	48.1	47.5	47.7	46.1	45.9	44.9	44.4	43.7	42.1	40.1	37.4	34.6	31
5	5 Single Family Home (SE)	AM	26.4	31.8	35.3	37.5	38.9	40.3	41.2	40.8	40.6	40.6	41.7	42.3	41.9	42.7	41.6	40.9	40.1	39.8	39.8	38.3	36.5	33.8	31.1	27.5
5	5 Single Family Home (SE)	PM	27	32.5	36	38.1	39.6	41	41.8	41.3	41.1	41.2	42.3	42.8	42.5	43.3	42.3	41.6	40.8	40.5	40.6	39	37.2	34.6	31.8	28.2
6	6 Single Family Home (SE)	AM	30.4	35.9	39.4	41.6	43.1	44.7	46	47.5	47.7	49.3	51.2	51.5	50.7	51.1	49.9	48.8	47.7	45.7	44.3	42.1	41.1	38.5	35.8	32.4
6	6 Single Family Home (SE)	PM	31.1	36.6	40.2	42.3	43.8	45.4	46.7	48.2	48.4	50	51.9	52.2	51.4	51.8	50.6	49.5	48.4	46.4	45	42.9	41.9	39.2	36.6	33.1
7	7 Single Family Home (NW)	AM	32.5	38	41.6	43.7	45.1	46.4	47.3	47	47.5	47.6	48.8	49.9	49.5	50.1	48.4	47.7	47.2	46.5	46.4	44.7	42.3	39.9	37.2	33.7
7	7 Single Family Home (NW)	PM	33.3	38.8	42.4	44.5	45.9	47.2	48.1	48	48.3	48.6	49.8	50.6	50.2	51.1	49.6	49	48.4	47.7	47.5	45.7	43.3	40.9	38.2	34.7

Center Street  
Opening Year With Project  
Road

Stationing km	Traffic values			AM Veh/h	PM Veh/h	Speed km/h	Control device	Constr. Speed km/h	Affect. veh. %	Road surface	Gradient Min / Max %
	ADT Veh/24h	Vehicles type	Vehicle name								
	In entry direction										
Center Street (EB)											
0+000	5360	Total	-	186	298	-	none	-	-	Average (of DGAC and PCC)	0
0+000	5360	Automobiles	-	128	205	56	none	-	-	Average (of DGAC and PCC)	0
0+000	5360	Medium trucks	-	48	77	56	none	-	-	Average (of DGAC and PCC)	0
0+000	5360	Heavy trucks	-	9	14	56	none	-	-	Average (of DGAC and PCC)	0
0+000	5360	Buses	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+000	5360	Motorcycles	-	1	2	56	none	-	-	Average (of DGAC and PCC)	0
0+000	5360	Auxiliary Vehicle	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+544	5968	Total	-	201	344	-	none	-	-	Average (of DGAC and PCC)	0
0+544	5968	Automobiles	-	138	236	56	none	-	-	Average (of DGAC and PCC)	0
0+544	5968	Medium trucks	-	52	89	56	none	-	-	Average (of DGAC and PCC)	0
0+544	5968	Heavy trucks	-	10	17	56	none	-	-	Average (of DGAC and PCC)	0
0+544	5968	Buses	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+544	5968	Motorcycles	-	1	2	56	none	-	-	Average (of DGAC and PCC)	0
0+544	5968	Auxiliary Vehicle	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+794	6920	Total	-	217	431	-	none	-	-	Average (of DGAC and PCC)	0
0+794	6920	Automobiles	-	148	296	56	none	-	-	Average (of DGAC and PCC)	0
0+794	6920	Medium trucks	-	56	111	56	none	-	-	Average (of DGAC and PCC)	0
0+794	6920	Heavy trucks	-	11	21	56	none	-	-	Average (of DGAC and PCC)	0
0+794	6920	Buses	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+794	6920	Motorcycles	-	2	3	56	none	-	-	Average (of DGAC and PCC)	0
0+794	6920	Auxiliary Vehicle	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+948	6920	Total	-	217	431	-	none	-	-	Average (of DGAC and PCC)	0
0+948	6920	Automobiles	-	148	296	56	none	-	-	Average (of DGAC and PCC)	0
0+948	6920	Medium trucks	-	56	111	56	none	-	-	Average (of DGAC and PCC)	0
0+948	6920	Heavy trucks	-	11	21	56	none	-	-	Average (of DGAC and PCC)	0
0+948	6920	Buses	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+948	6920	Motorcycles	-	2	3	56	none	-	-	Average (of DGAC and PCC)	0
0+948	6920	Auxiliary Vehicle	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+184	8536	Total	-	252	563	-	Stop sign	0	-	Average (of DGAC and PCC)	0
1+184	8536	Automobiles	-	173	388	56	Stop sign	0	-	Average (of DGAC and PCC)	0
1+184	8536	Medium trucks	-	65	145	56	Stop sign	0	-	Average (of DGAC and PCC)	0
1+184	8536	Heavy trucks	-	12	27	56	Stop sign	0	-	Average (of DGAC and PCC)	0
1+184	8536	Buses	-	-	-	-	Stop sign	0	-	Average (of DGAC and PCC)	0
1+184	8536	Motorcycles	-	2	3	56	Stop sign	0	-	Average (of DGAC and PCC)	0
1+184	8536	Auxiliary Vehicle	-	-	-	-	Stop sign	0	-	Average (of DGAC and PCC)	0
1+253	8536	Total	-	252	563	-	none	-	-	Average (of DGAC and PCC)	0
1+253	8536	Automobiles	-	173	388	56	none	-	-	Average (of DGAC and PCC)	0
1+253	8536	Medium trucks	-	65	145	56	none	-	-	Average (of DGAC and PCC)	0
1+253	8536	Heavy trucks	-	12	27	56	none	-	-	Average (of DGAC and PCC)	0
1+253	8536	Buses	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+253	8536	Motorcycles	-	2	3	56	none	-	-	Average (of DGAC and PCC)	0
1+253	8536	Auxiliary Vehicle	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+516	-	-	-	-	-	-	-	-	-	-	-
Orange Street SB											
0+893	2048	Total	-	78	100	-	none	-	-	Average (of DGAC and PCC)	0

0+893	2048 Automobiles	-	53	68	56 none	-	-	Average (of DGAC and PCC)	0
0+893	2048 Medium trucks	-	20	26	56 none	-	-	Average (of DGAC and PCC)	0
0+893	2048 Heavy trucks	-	4	5	56 none	-	-	Average (of DGAC and PCC)	0
0+893	2048 Buses	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+893	2048 Motorcycles	-	1	1	56 none	-	-	Average (of DGAC and PCC)	0
0+893	2048 Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+017	2048 Total	-	78	100	Stop sign	0	-	Average (of DGAC and PCC)	0
1+017	2048 Automobiles	-	53	68	56 Stop sign	0	-	Average (of DGAC and PCC)	0
1+017	2048 Medium trucks	-	20	26	56 Stop sign	0	-	Average (of DGAC and PCC)	0
1+017	2048 Heavy trucks	-	4	5	56 Stop sign	0	-	Average (of DGAC and PCC)	0
1+017	2048 Buses	-	-	-	Stop sign	0	-	Average (of DGAC and PCC)	0
1+017	2048 Motorcycles	-	1	1	56 Stop sign	0	-	Average (of DGAC and PCC)	0
1+017	2048 Auxiliary Vehicle	-	-	-	Stop sign	0	-	Average (of DGAC and PCC)	0
1+072	2048 Total	-	78	100	none	-	-	Average (of DGAC and PCC)	0
1+072	2048 Automobiles	-	53	68	56 none	-	-	Average (of DGAC and PCC)	0
1+072	2048 Medium trucks	-	20	26	56 none	-	-	Average (of DGAC and PCC)	0
1+072	2048 Heavy trucks	-	4	5	56 none	-	-	Average (of DGAC and PCC)	0
1+072	2048 Buses	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+072	2048 Motorcycles	-	1	1	56 none	-	-	Average (of DGAC and PCC)	0
1+072	2048 Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+450	-	-	-	-	-	-	-	-	0
Center Street WB Traffic direction: In entry direction									
0+893	6128 Total	-	269	228	none	-	-	Average (of DGAC and PCC)	0
0+893	6128 Automobiles	-	154	156	56 none	-	-	Average (of DGAC and PCC)	0
0+893	6128 Medium trucks	-	95	59	56 none	-	-	Average (of DGAC and PCC)	0
0+893	6128 Heavy trucks	-	18	11	56 none	-	-	Average (of DGAC and PCC)	0
0+893	6128 Buses	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+893	6128 Motorcycles	-	2	2	56 none	-	-	Average (of DGAC and PCC)	0
0+893	6128 Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+228	7728 Total	-	369	228	Stop sign	0	-	Average (of DGAC and PCC)	0
1+228	7728 Automobiles	-	254	156	56 Stop sign	0	-	Average (of DGAC and PCC)	0
1+228	7728 Medium trucks	-	95	59	56 Stop sign	0	-	Average (of DGAC and PCC)	0
1+228	7728 Heavy trucks	-	18	11	56 Stop sign	0	-	Average (of DGAC and PCC)	0
1+228	7728 Buses	-	-	-	Stop sign	0	-	Average (of DGAC and PCC)	0
1+228	7728 Motorcycles	-	2	2	56 Stop sign	0	-	Average (of DGAC and PCC)	0
1+228	7728 Auxiliary Vehicle	-	-	-	Stop sign	0	-	Average (of DGAC and PCC)	0
1+427	7728 Total	-	369	228	none	-	-	Average (of DGAC and PCC)	0
1+427	7728 Automobiles	-	254	156	56 none	-	-	Average (of DGAC and PCC)	0
1+427	7728 Medium trucks	-	95	59	56 none	-	-	Average (of DGAC and PCC)	0
1+427	7728 Heavy trucks	-	18	11	56 none	-	-	Average (of DGAC and PCC)	0
1+427	7728 Buses	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+427	7728 Motorcycles	-	2	2	56 none	-	-	Average (of DGAC and PCC)	0
1+427	7728 Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+603	5688 Total	-	260	191	none	-	-	Average (of DGAC and PCC)	0
1+603	5688 Automobiles	-	178	131	56 none	-	-	Average (of DGAC and PCC)	0
1+603	5688 Medium trucks	-	67	49	56 none	-	-	Average (of DGAC and PCC)	0
1+603	5688 Heavy trucks	-	13	10	56 none	-	-	Average (of DGAC and PCC)	0
1+603	5688 Buses	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+603	5688 Motorcycles	-	2	1	56 none	-	-	Average (of DGAC and PCC)	0
1+603	5688 Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+873	4840 Total	-	206	193	none	-	-	Average (of DGAC and PCC)	0
1+873	4840 Automobiles	-	141	132	56 none	-	-	Average (of DGAC and PCC)	0
1+873	4840 Medium trucks	-	53	50	56 none	-	-	Average (of DGAC and PCC)	0

1+873	4840 Heavy trucks	-	10	10	56	none	-	-	Average (of DGAC and PCC)	0
1+873	4840 Buses	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+873	4840 Motorcycles	-	2	1	56	none	-	-	Average (of DGAC and PCC)	0
1+873	4840 Auxiliary Vehicle	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
2+414	-	-	-	-	-	-	-	-	-	-
0+000	4840 Total	-	206	193	-	Stop sign	0	-	Average (of DGAC and PCC)	0
0+000	4840 Automobiles	-	141	132	56	Stop sign	0	-	Average (of DGAC and PCC)	0
0+000	4840 Medium trucks	-	53	50	56	Stop sign	0	-	Average (of DGAC and PCC)	0
0+000	4840 Heavy trucks	-	10	10	56	Stop sign	0	-	Average (of DGAC and PCC)	0
0+000	4840 Buses	-	-	-	-	Stop sign	0	-	Average (of DGAC and PCC)	0
0+000	4840 Motorcycles	-	2	1	56	Stop sign	0	-	Average (of DGAC and PCC)	0
0+000	4840 Auxiliary Vehicle	-	-	-	-	Stop sign	0	-	Average (of DGAC and PCC)	0
Orange Street NB Traffic direction: In entry direction										
0+893	360 Total	-	16	13	-	none	-	-	Average (of DGAC and PCC)	0
0+893	360 Automobiles	-	10	8	56	none	-	-	Average (of DGAC and PCC)	0
0+893	360 Medium trucks	-	4	3	56	none	-	-	Average (of DGAC and PCC)	0
0+893	360 Heavy trucks	-	1	1	56	none	-	-	Average (of DGAC and PCC)	0
0+893	360 Buses	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+893	360 Motorcycles	-	1	1	56	none	-	-	Average (of DGAC and PCC)	0
0+893	360 Auxiliary Vehicle	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+331	360 Total	-	16	13	-	Stop sign	0	-	Average (of DGAC and PCC)	0
1+331	360 Automobiles	-	10	8	56	Stop sign	0	-	Average (of DGAC and PCC)	0
1+331	360 Medium trucks	-	4	3	56	Stop sign	0	-	Average (of DGAC and PCC)	0
1+331	360 Heavy trucks	-	1	1	56	Stop sign	0	-	Average (of DGAC and PCC)	0
1+331	360 Buses	-	-	-	-	Stop sign	0	-	Average (of DGAC and PCC)	0
1+331	360 Motorcycles	-	1	1	56	Stop sign	0	-	Average (of DGAC and PCC)	0
1+331	360 Auxiliary Vehicle	-	-	-	-	Stop sign	0	-	Average (of DGAC and PCC)	0
1+450	-	-	-	-	-	-	-	-	-	-
0+000	360 Total	-	16	13	-	none	-	-	Average (of DGAC and PCC)	0
0+000	360 Automobiles	-	10	8	56	none	-	-	Average (of DGAC and PCC)	0
0+000	360 Medium trucks	-	4	3	56	none	-	-	Average (of DGAC and PCC)	0
0+000	360 Heavy trucks	-	1	1	56	none	-	-	Average (of DGAC and PCC)	0
0+000	360 Buses	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+000	360 Motorcycles	-	1	1	56	none	-	-	Average (of DGAC and PCC)	0
0+000	360 Auxiliary Vehicle	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
Main Street NB Traffic direction: In entry direction										
1+023	21728 Total	-	885	946	-	none	-	-	Average (of DGAC and PCC)	0
1+023	21728 Automobiles	-	609	651	56	none	-	-	Average (of DGAC and PCC)	0
1+023	21728 Medium trucks	-	228	244	56	none	-	-	Average (of DGAC and PCC)	0
1+023	21728 Heavy trucks	-	43	46	56	none	-	-	Average (of DGAC and PCC)	0
1+023	21728 Buses	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+023	21728 Motorcycles	-	5	5	56	none	-	-	Average (of DGAC and PCC)	0
1+023	21728 Auxiliary Vehicle	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+559	-	-	-	-	-	-	-	-	-	-
0+000	21728 Total	-	885	946	-	none	-	-	Average (of DGAC and PCC)	0
0+000	21728 Automobiles	-	609	651	56	none	-	-	Average (of DGAC and PCC)	0
0+000	21728 Medium trucks	-	228	244	56	none	-	-	Average (of DGAC and PCC)	0
0+000	21728 Heavy trucks	-	43	46	56	none	-	-	Average (of DGAC and PCC)	0
0+000	21728 Buses	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+000	21728 Motorcycles	-	5	5	56	none	-	-	Average (of DGAC and PCC)	0
0+000	21728 Auxiliary Vehicle	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
Main Street NB1 Traffic direction: In entry direction										
1+023	19880 Total	-	746	993	-	none	-	-	Average (of DGAC and PCC)	0



1+023	19880 Automobiles	-	514	684	56 none	-	-	Average (of DGAC and PCC)	0
1+023	19880 Medium trucks	-	192	256	56 none	-	-	Average (of DGAC and PCC)	0
1+023	19880 Heavy trucks	-	36	48	56 none	-	-	Average (of DGAC and PCC)	0
1+023	19880 Buses	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+023	19880 Motorcycles	-	4	5	56 none	-	-	Average (of DGAC and PCC)	0
1+023	19880 Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+560	-	-	-	-	-	-	-	-	-

Center Street  
 Opening Year 2017 With Project  
 Receivers

No.	Receiver name	Floor	Level	
			AM	PM
			dB(A)	
1	1 Industrial (N)	GF	58.2	58.8
2	2 Industrial (E)	GF	63.3	64.1
3	3 Single Family Residential (NE)	GF	59.7	60.8
4	4 Commercial (EE)	GF	58.2	59.0
5	5 Single Family Home (SE)	GF	53.6	54.4
6	6 Single Family Home (SE)	GF	60.9	61.8
7	7 Single Family Home (NW)	GF	60.9	61.8

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Planning Commission - Exhibit 1 - Development Review Committee Staff Report  
Development Review Committee - Exhibit 7 - CEQA Documents

Center Street  
Opening Year 2017 With Project  
Contributions

Source name		Level	
		AM	PM
		dB(A)	
<b>1 Industrial (N)</b>	<b>GF</b>	<b>58.2</b>	<b>58.8</b>
Center Street (EB)		54.4	56.8
Center Street WB		55.8	54.5
Main Street NB		34.9	35.2
Main Street NB1		34.1	35.3
Orange Street NB		23.7	23.3
Orange Street SB		29.9	30.9
<b>2 Industrial (E)</b>	<b>GF</b>	<b>63.3</b>	<b>64.1</b>
Center Street (EB)		59.7	62.6
Center Street WB		60.8	58.7
Main Street NB		33.1	33.4
Main Street NB1		32.3	33.6
Orange Street NB		27.7	27.4
Orange Street SB		34.0	35.0
<b>3 Single Family Residential (NE)</b>	<b>GF</b>	<b>59.7</b>	<b>60.8</b>
Center Street (EB)		55.7	59.1
Center Street WB		57.3	55.5
Main Street NB		29.0	29.3
Main Street NB1		28.3	29.5
Orange Street NB		34.6	34.1
Orange Street SB		40.7	41.7
<b>4 Commercial (EE)</b>	<b>GF</b>	<b>58.2</b>	<b>59.0</b>
Center Street (EB)		50.7	53.9
Center Street WB		52.4	50.4
Main Street NB		30.0	30.3
Main Street NB1		29.2	30.5
Orange Street NB		48.3	47.6
Orange Street SB		54.9	55.9
<b>5 Single Family Home (SE)</b>	<b>GF</b>	<b>53.6</b>	<b>54.4</b>
Center Street (EB)		40.0	43.1
Center Street WB		41.7	39.8
Main Street NB		30.1	30.4
Main Street NB1		29.3	30.6
Orange Street NB		46.3	45.7
Orange Street SB		52.0	53.1
<b>6 Single Family Home (SE)</b>	<b>GF</b>	<b>60.9</b>	<b>61.8</b>

Center Street (EB)	39.4	42.4
Center Street WB	41.0	39.2
Main Street NB	30.4	30.7
Main Street NB1	29.6	30.9
Orange Street NB	51.8	51.1
Orange Street SB	60.2	61.3
<b>7 Single Family Home (NW) GF</b>	<b>60.9</b>	<b>61.8</b>
Center Street (EB)	57.2	59.3
Center Street WB	57.9	57.7
Main Street NB	45.8	46.1
Main Street NB1	45.0	46.3
Orange Street NB	17.8	17.2
Orange Street SB	23.9	24.9

Center Street  
Opening Year 2017 With Project  
Receiver Spectra

No.	Name	Time slice	50 Hz	63 Hz	80 Hz	100 Hz	125 Hz	160 Hz	200 Hz	250 Hz	315 Hz	400 Hz	500 Hz	630 Hz	800 Hz	1 kHz	1 kHz	2 kHz	2 kHz	2 kHz	3 kHz	4 kHz	5 kHz	6 kHz	8 kHz	10 kHz
1	1 Industrial (N)	AM	31.5	37	40.6	42.7	44.1	45.4	46.3	46.2	45.7	45.4	46.3	47.4	47	47.8	46.5	46.1	44.6	44	44	42.6	40.7	37.8	35.1	31.5
1	1 Industrial (N)	PM	32	37.5	41.1	43.2	44.6	45.9	46.8	46.8	46.3	46	47	47.9	47.6	48.2	47.1	46.8	45.4	44.7	44.8	43.3	41.4	38.6	35.9	32.2
2	2 Industrial (E)	AM	34.5	40.1	43.6	45.8	47.2	48.6	49.6	50	50.7	50.9	52.1	53.3	52.8	53.4	52.1	51.7	50.9	49.9	48.9	46.8	44.2	42.3	39.7	36.3
2	2 Industrial (E)	PM	35.5	41	44.6	46.7	48.2	49.5	50.6	50.9	51.7	51.7	52.9	54.7	53.9	54.1	52.5	52.2	51.2	50.3	49.4	47.4	44.9	43	40.3	37
3	3 Single Family Residential (NE)	AM	32.7	38.2	41.7	43.8	45.3	46.6	47.6	47.6	47.2	47	47.9	49	48.5	49.3	48	47.4	46	45.5	45.3	43.6	42.1	39.1	36.4	32.8
3	3 Single Family Residential (NE)	PM	33.6	39.2	42.7	44.8	46.3	47.6	48.5	48.6	48.3	48.2	49.1	50	49.7	50.4	49.3	48.8	47.5	46.7	46.5	44.7	43.2	40.4	37.7	34.2
4	4 Commercial (EE)	AM	31.3	36.8	40.3	42.4	43.9	45.2	46.1	46.1	45.9	45.3	46.2	48	47.3	47.7	46.2	46	45	44.5	43.8	42.2	40	37.3	34.5	30.9
4	4 Commercial (EE)	PM	32.1	37.7	41.2	43.3	44.7	46.1	46.9	46.9	46.7	46.1	47	48.8	48.1	48.5	47	46.8	45.8	45.3	44.5	43	40.9	38.2	35.4	31.8
5	5 Single Family Home (SE)	AM	26.9	32.3	35.8	37.9	39.4	40.7	41.5	41	40.8	40.8	41.9	42.4	42.1	42.9	41.8	41.1	40.4	40.1	40.2	38.8	37	34.3	31.6	27.9
5	5 Single Family Home (SE)	PM	27.6	33.1	36.6	38.7	40.2	41.5	42.3	41.7	41.5	41.5	42.6	43.1	42.8	43.6	42.6	42	41.2	41	41.1	39.6	37.7	35.1	32.3	28.7
6	6 Single Family Home (SE)	AM	30.6	36.1	39.7	41.8	43.4	44.9	46.2	47.6	47.8	49.4	51.4	51.7	50.9	51.3	50.1	49	47.9	45.9	44.5	42.4	41.4	38.7	36.1	32.6
6	6 Single Family Home (SE)	PM	31.5	37	40.6	42.7	44.3	45.8	47	48.4	48.6	50.3	52.3	52.6	51.8	52.2	51	49.9	48.7	46.8	45.3	43.2	42.3	39.6	36.9	33.5
7	7 Single Family Home (NW)	AM	33.1	38.7	42.2	44.3	45.7	47	47.9	47.8	48.2	48.4	49.5	50.5	50.2	50.9	49.2	48.5	47.9	47.2	47	45.3	42.9	40.5	37.8	34.4
7	7 Single Family Home (NW)	PM	33.9	39.5	43.1	45.1	46.6	47.9	48.8	48.7	49.1	49.3	50.5	51.3	51	51.8	50.3	49.6	49	48.3	48.1	46.3	43.9	41.5	38.9	35.4



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Planning Commission - Exhibit 1 - Development Review Committee Staff Report  
Development Review Committee - Exhibit 7 - CEQA Documents