

# **Bedford Marketplace**

NOISE IMPACT ANALYSIS CITY OF CORONA

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12751-12 Noise Study



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# LIST OF ABBREVIATED TERMS

Reference
Average Daily Traffic
American National Standards Institute
California Vehicle Noise
California Environmental Quality Act
Community Noise Equivalent Level
A-weighted decibels
Federal Highway Administration
Federal Transit Administration
Institute of Noise Control Engineering
Equivalent continuous (average) sound level
Maximum level measured over the time interval
Minimum level measured over the time interval
Miles per hour
Peak Particle Velocity
Bedford Marketplace
Reference Energy Mean Emission Level
Root-mean-square
Vibration Decibels



# **EXECUTIVE SUMMARY**

Urban Crossroads, Inc. has prepared this noise study to determine the noise exposure and the necessary noise mitigation measures for the proposed Bedford Marketplace development ("Project") an expansion of the previously approved commercial development area included within the Arantine Hills Specific Plan. The 80,000 square feet (sf) of commercial retail use included in the Arantine Hills Specific Plan was evaluated in prior studies prepared for amendments to the Arantine Hills Specific Plan. The proposed Project represents the expansion of Bedford Marketplace from 80,000 sf to 135,000 sf of retail uses and a 135-room hotel. Consistent with the *Bedford Marketplace Traffic Study* (1) prepared by Urban Crossroads, Inc., the incremental expansion of Bedford Marketplace" includes the total development of the center, equal to the combination of the proposed Project and the previously approved 80,000 sf in the Arantine Hills Specific Plan. The Project site is located south of Eagle Glen Parkway – Cajalco Road and west of the I-15 Freeway in the City of Corona

This study has been prepared consistent with applicable City of Corona noise standards, and significance criteria based on guidance provided by Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (2)

### OFF-SITE PROJECT TRAFFIC NOISE ANALYSIS

Traffic generated by the operation of the proposed Project will influence the traffic noise levels in surrounding off-site areas. To quantify the off-site traffic noise increases on the surrounding off-site areas, the changes in traffic noise levels on 21 roadway segments surrounding the Project site were calculated based on the change in the average daily traffic (ADT) volumes. The traffic noise levels provided in this analysis are based on the traffic forecasts found in *Bedford Marketplace Traffic Study*. (1) To assess the off-site noise level impacts associated with the proposed Project, noise contour boundaries were developed for Existing, Interim Year 2021, and Horizon Year 2035 traffic conditions. The analysis shows that the unmitigated Project-related traffic noise level increases under all traffic scenarios will be *less than significant*.

### SOIL IMPORT/EXPORT HAUL TRUCK OFF-SITE TRAFFIC NOISE ANALYSIS

To bring the Modified Bedford Marketplace Project Site up to an elevation similar (within five feet) of the existing 10-acre commercial pad, import of approximately 440,000 cubic yards of dirt is required. The import operation is expected to include 250 full loads per night, assuming 15 cubic yards per load, for a total of 3,750 cubic yards per night. To import 440,000 cubic yards, approximately 118 nights of import would be required.

The Project proposes to import dirt during the hours (8:00 p.m. to 4:00 a.m.) and complete grading operations both during daytime and nighttime hours. A source of import has been identified from the FST Sand and Gravel Mine, located east of the I-15 Freeway. The dirt would be hauled from the borrow site on Minnesota Road to Sherborn Street to Magnolia Avenue to the I-15 Freeway southbound on ramp at Magnolia Avenue, exit at Cajalco Road and enter the

Modified Project Site by crossing Cajalco Road from the southbound off-ramp with traffic control. Trucks would return onto Cajalco Road, enter I-15 Freeway northbound to Magnolia Avenue to Sherborn Street and travel south to the borrow site.

The proposed soil import/export haul route was specially developed to avoid potentially significant impacts to potential noise sensitive residential land uses. The off-site soil import/export analysis shows that Project haul truck trip will generate a noise level increase ranging from 0.2 dBA CNEL on the I-15 Freeway to 5.4 dBA CNEL on Sherborn Street. A review of the haul route shows that the only adjacent noise sensitive residential land uses are located adjacent to the I-15 Freeway. Many of the noise sensitive residential land uses near the I-15 Freeway benefit from existing Caltrans sound walls that have been developed to reduce traffic noise. Based on the significance criteria outlined above, the Project soil import/export truck trip-related noise level increases are considered *less than significant* impacts at the land uses adjacent to roadways conveying Project haul truck traffic.

### **ON-SITE TRAFFIC NOISE IMPACTS**

An on-site exterior noise impact analysis has been completed to determine the traffic noise exposure and to identify potential necessary noise abatement measures for the proposed Bedford Marketplace Project. It is expected that the primary source of noise impacts to the Project site will be traffic noise from the I-15 Freeway. To control transportation related noise sources, the City of Corona has adopted exterior and interior noise standards by land use type.

#### EXTERIOR NOISE

The City of Corona has adopted an exterior noise standard of 65 dBA CNEL for noise sensitive land uses. The exterior noise standards typically apply to outdoor areas where people congregate. The only noise sensitive outdoor area in the proposed Bedford Marketplace is the outdoor pool area. The City of Corona does not identify any exterior noise standards for any of the commercial land use activities such as the outdoor patio areas for proposed restaurant uses. The on-site traffic noise level impacts indicate that outdoor hotel pool area will experience unmitigated exterior noise levels of 52.3 dBA CNEL. Since the unmitigated on-site traffic noise levels satisfy the City of Corona 65 dBA CNEL exterior noise level standards, the on-site traffic noise level impacts are considered as *less than significant*.

#### INTERIOR NOISE

To satisfy the City of Corona 45 dBA CNEL interior noise level criteria for noise sensitive land use, hotel rooms facing the I-15 Freeway will require a Noise Level Reduction (NLR) of up to 26.5 dBA and a windows closed condition requiring a means of mechanical ventilation (e.g. air conditioning). In order to meet the City of Corona 45 dBA CNEL interior noise standards, the Project shall provide a minimum STC ratings of 30 for windows facing the I-15 Freeway. With the recommended upgraded windows, the future on-site interior traffic noise impacts are expected to meet the City of Corona 45 dBA CNEL interior are expected to meet the City of Corona 45 dBA CNEL interior noise impacts are expected standards and will be *less than significant*.



#### **PROJECT OPERATIONAL NOISE ANALYSIS**

Using reference noise levels to represent the expected noise sources from the Bedford Marketplace site, this analysis estimates the Project-related stationary-source noise levels at nearby sensitive receiver locations. The normal activities associated with the proposed Bedford Marketplace are anticipated to include roof-top air conditioning units, drive-thru speakerphones, trash enclosures, parking lots, gas station activity, car wash tunnel, car wash vacuums, and outdoor playground activity.

The analysis shows that the Project-related operational noise levels will satisfy the City of Corona daytime and nighttime exterior noise level standards at the closest noise-sensitive receiver locations in the Project study area. Therefore, the operational noise impacts are considered *less than significant* at all receiver locations. In addition, the project operational noise level contribution analysis shows Project-related incremental noise level increase to the ambient noise environment would be *less than significant* at all receiver locations.

#### SOIL IMPORT/EXPORT CONSTRUCTION NOISE ANALYSIS

The applicant has identified two potential borrow sites to provide the necessary fill dirt. The FST Sand and Gravel Mine, located east of the I-15 Freeway and the Arantine Hills Specific Plan Phase 2B site.

#### FST SAND AND GRAVEL MINE BORROW SITE

During the nighttime hours, dirt would be imported to the Modified Project Site, dumped, and placed by grading equipment. Daytime grading activities would initially last for approximately two weeks and begin before import and overlap with initial import operations. The daytime activities include remedial grading, which requires the over-excavation of approximately four to six feet below existing ground surface. The over-excavated material would be stockpiled on site. Additional daytime grading would occur after imported material has be placed in the over-excavated areas to bring the site closer to proposed grades. The stockpiled material would then be placed over the imported material to create the finished building pad, compacted to meet geotechnical specifications.

According to the Project applicant, every effort will be made to limit on-site construction activities particularly during the noise sensitive nighttime hours. For this reason, the Applicant is proposing to limit nighttime operations to permit only the essential equipment needed to support the soil import/export haul truck operations. The results of the soil import/export construction noise analysis, all nearby receiver locations will experience *less than significant* impacts due to the daytime and nighttime soil import/export noise construction noise levels at the Project site.



#### PHASE 2B BORROW SITE

Preliminary estimates suggest that the existing Phase 2B site will be lowered by approximately 13 feet to provide the necessary supply of dirt for import. Unlike the FST Sand and Gravel Mine borrow site, Phase 2B will not require any off-site haul trucks. In addition, due to the proximity of Phase 2B to the Bedford Marketplace, import of dirt will limited to the daytime hours from 7:00 a.m. to 7:00 p.m.

#### SOIL IMPORT/EXPORT CONSTRUCTION NOISE ANALYSIS (DAYTIME)

The analysis shows that either borrow site will satisfy the City of Corona maximum acceptable threshold for determining the impacts due to Project construction for sensitive receiver's daytime exterior noise level of 75 dBA  $L_{max}$ . Therefore, based on the results of the analysis, all nearby receiver locations will experience *less than significant* impacts due to the daytime soil import/export noise construction noise levels at the Project site.

#### SOIL IMPORT/EXPORT CONSTRUCTION NOISE ANALYSIS (NIGHTTIME)

The estimated Project nighttime construction noise levels from the import of dirt from the FST Sand and Gravel Mine will satisfy the City of Corona 50 dBA  $L_{max}$  stationary source nighttime noise level thresholds at all receiver locations. Therefore, based on the results of the analysis, all nearby receiver locations will experience *less than significant* impacts due to the nighttime soil import/export noise construction noise levels at the Project site. However, planned nighttime Project soil import/export activity will require a noise variance consistent with the provisions outlined in the City of Corona Municipal Code Section 17.84.040(H)(1) to perform the evening and nighttime grading activities

#### PROJECT SITE CONSTRUCTION NOISE ANALYSIS

Construction-related noise impacts are expected to create temporary and intermittent high-level noise conditions at receivers surrounding the Project site when certain activities occur at the Project site boundary. Using sample reference noise levels to represent the planned construction activities of the Bedford Marketplace site, this analysis estimates the Project-related construction noise levels at nearby sensitive receiver locations. The analysis shows that the Project-related short-term construction noise levels, are expected to approach 63.9 dBA L<sub>max</sub> and will not exceed the 75 dBA L<sub>max</sub> construction noise level threshold at the nearby sensitive receiver locations. Therefore, based on the results of this analysis, all nearby sensitive receiver locations will experience *less than significant* impacts due to Project site construction noise levels.

#### SUMMARY OF CEQA SIGNIFICANCE FINDINGS

The results of this Bedford Marketplace Noise Impact Analysis are summarized below based on the significance criteria in Section 4 of this report consistent with Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (2).



Analysia	Report	Significance Findings				
Analysis	Section	Unmitigated	Mitigated			
Off-Site Traffic Noise Levels	7	Less Than Significant	n/a			
Soil Import/Export Haul Trucks	/	Less Than Significant	n/a			
On-Site Exterior Traffic Noise Levels	0	Less Than Significant	n/a			
On-Site Interior Traffic Noise Levels	8	Less Than Significant	n/a			
Operational Noise Levels	10	Less Than Significant	n/a			
Soil Import/Export Construction		Less Than Significant	n/a			
Construction Noise Levels	11	Less Than Significant	n/a			
Construction Vibration Levels		Less Than Significant	n/a			

#### TABLE ES-1: SUMMARY OF CEQA SIGNIFICANCE FINDINGS



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# 1 INTRODUCTION

This noise analysis has been completed to determine the noise impacts associated with the development of the proposed Bedford Marketplace ("Project") an expansion of the previously approved commercial development area included within the Arantine Hills Specific Plan. The 80,000 square feet (sf) of commercial retail use included in the Arantine Hills Specific Plan was evaluated in prior studies prepared for amendments to the Arantine Hills Specific Plan. The proposed Project represents the expansion of Bedford Marketplace from 80,000 sf to 135,000 sf of retail uses and a 135-room hotel. Consistent with the *Bedford Marketplace Traffic Study* (1) prepared by Urban Crossroads, Inc., the incremental expansion of Bedford Marketplace" includes the total development of the center, equal to the combination of the proposed Project and the previously approved 80,000 sf in the Arantine Hills Specific Plan. Based on the currently approved commercial trip generation in the Arantine Hills Traffic Assessment (November 2018), the Project is anticipated to generate an additional 2,061 external trips per day.

This noise study briefly describes the proposed Project, provides information regarding noise fundamentals, describes the local regulatory setting, provides the study methods and procedures for transportation noise analysis, soil import/export haul traffic noise and evaluates the future exterior noise environment. In addition, this study includes an analysis of the potential Project-related long-term operational noise and short-term construction noise and vibration impacts.

### **1.1** SITE LOCATION

The Project site is located south of Eagle Glen Parkway – Cajalco Road and west of the I-15 Freeway in the City of Corona as shown on Exhibit 1-A. The Project site is currently vacant. Nearby existing residential land uses are located north, west, and south of the Project site. Commercial land uses near the Project site are located to the north at the I-15 Freeway southbound off-ramp, and east of the I-15 Freeway north of Cajalco Road. The Corona Municipal Airport is located approximately 6.5 miles northwest of the Project site.

#### **1.2 BEDFORD MARKETPLACE LAND USE DESCRIPTION**

The Bedford Marketplace site plan (shown on Exhibit 1-B) expands the approved commercial site and is proposed to consist of the following uses:

- Hotel 135 rooms
- Health/fitness club 38,000 sf
- Day Care Center 9,990 sf
- Retail Shopping Center 51,000 sf
- Bank 6,562 sf
- Restaurant 21,230 sf
- Gas Station 18 vehicle fueling positions (vfp's)
- Automated Car Wash 3,600 sf

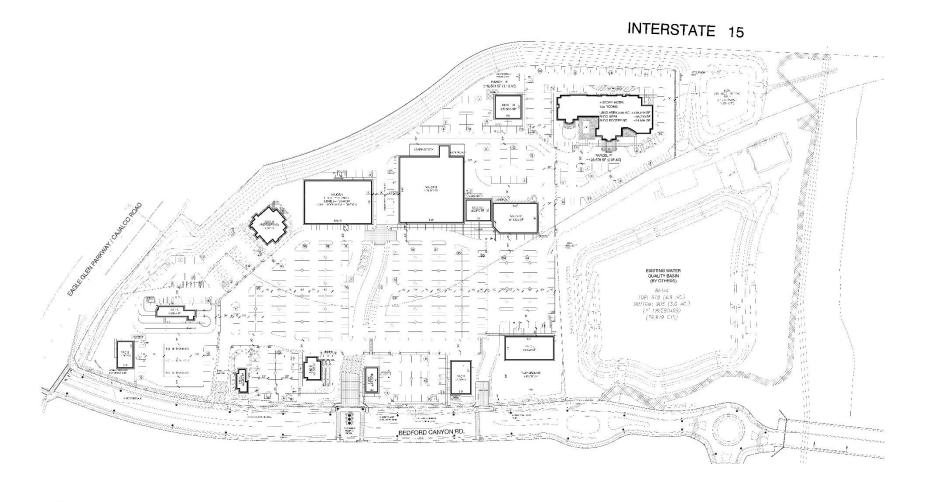


The on-site Project-related noise sources are expected to include: roof-top air conditioning units, drive-thru speakerphones, trash enclosures, parking lots, gas station activity, car wash tunnel, car wash vacuums, and outdoor playground activity. This noise analysis is intended to describe noise level impacts associated with the expected typical, 24-hour seven days per week operational activities at the Project site.



#### EXHIBIT 1-A: LOCATION MAP





#### EXHIBIT 1-B: BEDFORD MARKETPLACE SITE PLAN

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# 2 FUNDAMENTALS

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

COMMON OUTDOOR ACTIVITIES	COMMON INDOOR ACTIVITIES	A - WEIGHTED SOUND LEVEL dBA	SUBJECTIVE LOUDNESS	EFFECTS OF NOISE	
THRESHOLD OF PAIN		140			
NEAR JET ENGINE		130	INTOLERABLE OR		
the second s		120	DEAFENING	HEARING LOSS	
JET FLY-OVER AT 300m (1000 ft)	ROCK BAND	110		10010000000000	
LOUD AUTO HORN		100			
GAS LAWN MOWER AT 1m (3 ft)		90	VERY NOISY		
DIESEL TRUCK AT 15m (50 ft), at 80 km/hr (50 mph)	FOOD BLENDER AT 1m (3 ft)	80			
NOISY URBAN AREA, DAYTIME	VACUUM CLEANER AT 3m (10 ft)	70	LOUD	SPEECH	
HEAVY TRAFFIC AT 90m (300 ft)	NORMAL SPEECH AT 1m (3 ft)	60	LOOD	HTENTENENCE	
QUIET URBAN DAYTIME	LARGE BUSINESS OFFICE	50	MODERATE	SLEEP	
QUIET URBAN NIGHTTIME	THEATER, LARGE CONFERENCE ROOM (BACKGROUND)	40		DISTURBANCE	
QUIET SUBURBAN NIGHTTIME	LIBRARY	30			
QUIET RURAL NIGHTTIME	BEDROOM AT NIGHT, CONCERT HALL (BACKGROUND)	20	FAINT		
	BROADCAST/RECORDING STUDIO	10	VERY FAINT	NO EFFECT	
LOWEST THRESHOLD OF HUMAN HEARING	LOWEST THRESHOLD OF HUMAN HEARING	0	VERT FAIN)		

#### EXHIBIT 2-A: TYPICAL NOISE LEVELS

# 2.1 RANGE OF NOISE

Since the range of intensities that the human ear can detect is so large, the scale frequently used to measure intensity is a scale based on multiples of 10, the logarithmic scale. The scale for measuring intensity is the decibel scale. Each interval of 10 decibels indicates a sound energy ten times greater than before, which is perceived by the human ear as being roughly twice as loud. (3) The most common sounds vary between 40 dBA (very quiet) to 100 dBA (very loud). Normal conversation at three feet is roughly at 60 dBA, while loud jet engine noises equate to 110 dBA at approximately 100 feet, which can cause serious discomfort. (4) Another important aspect of noise is the duration of the sound and the way it is described and distributed in time.

# 2.2 NOISE DESCRIPTORS

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

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

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

# 2.3 SOUND PROPAGATION

When sound propagates over a distance, it changes in level and frequency content. The way noise reduces with distance depends on the following factors.

### 2.3.1 GEOMETRIC SPREADING

Sound from a localized source (i.e., a stationary point source) propagates uniformly outward in a spherical pattern. The sound level attenuates (or decreases) at a rate of 6 dB for each doubling of distance from a point source. Highways consist of several localized noise sources on a defined path and hence can be treated as a line source, which approximates the effect of several point sources. Noise from a line source propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of 3 dB for each doubling of distance from a line source. (3)



#### 2.3.2 GROUND ABSORPTION

The propagation path of noise from a highway to a receiver is usually very close to the ground. Noise attenuation from ground absorption and reflective wave canceling adds to the attenuation associated with geometric spreading. Traditionally, the excess attenuation has also been expressed in terms of attenuation per doubling of distance. This approximation is usually sufficiently accurate for distances of less than 200 ft. For acoustically hard sites (i.e., sites with a reflective surface between the source and the receiver, such as a parking lot or body of water), no excess ground attenuation is assumed. For acoustically absorptive or soft sites (i.e., those sites with an absorptive ground surface between the source and the receiver and the receiver such as soft dirt, grass, or scattered bushes and trees), an excess ground attenuation value of 1.5 dB per doubling of distance is normally assumed. When added to the cylindrical spreading, the excess ground attenuation results in an overall drop-off rate of 4.5 dB per doubling of distance from a line source. (5)

#### 2.3.3 ATMOSPHERIC EFFECTS

Receivers located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels. Sound levels can be increased at large distances (e.g., more than 500 feet) due to atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity, and turbulence can also have significant effects. (3)

#### 2.3.4 SHIELDING

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

# 2.4 NOISE CONTROL

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



### **2.5** Noise Barrier Attenuation

Effective noise barriers can reduce noise levels by up to 10 to 15 dBA, cutting the loudness of traffic noise in half. A noise barrier is most effective when placed close to the noise source or receiver. Noise barriers, however, do have limitations. For a noise barrier to work, it must be high enough and long enough to block the path of the noise source. (5)

### 2.6 LAND USE COMPATIBILITY WITH NOISE

Some land uses are more tolerant of noise than others. For example, schools, hospitals, churches, and residences are more sensitive to noise intrusion than are commercial or industrial developments and related activities. As ambient noise levels affect the perceived amenity or livability of a development, so too can the mismanagement of noise impacts impair the economic health and growth potential of a community by reducing the area's desirability as a place to live, shop and work. For this reason, land use compatibility with the noise environment is an important consideration in the planning and design process. The FHWA encourages State and Local government to regulate land development in such a way that noise-sensitive land uses are either prohibited from being located adjacent to a highway, or that the developments are planned, designed, and constructed in such a way that noise impacts are minimized. (6)

### 2.7 COMMUNITY RESPONSE TO NOISE

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

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

Approximately ten percent of the population has a very low tolerance for noise and will object to any noise not of their making. Consequently, even in the quietest environment, some complaints will occur. Another twenty-five percent of the population will not complain even in very severe noise environments. Thus, a variety of reactions can be expected from people exposed to any given noise environment. (7) Surveys have shown that about ten percent of the people exposed to traffic noise of 60 dBA will report being highly annoyed with the noise, and each increase of one dBA is associated with approximately two percent more people being highly annoyed. When traffic noise exceeds 60 dBA or aircraft noise exceeds 55 dBA, people may begin to complain. (7) Despite this variability in behavior on an individual level, the population can be expected to exhibit the following responses to changes in noise levels as shown on Exhibit 2-B. A change of 3 dBA are considered *barely perceptible*, and changes of 5 dBA are considered *readily perceptible*. (5)



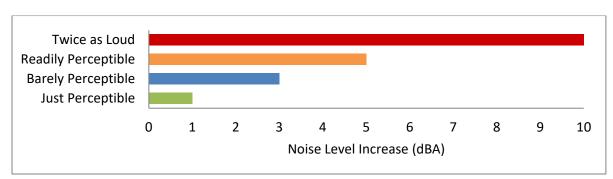


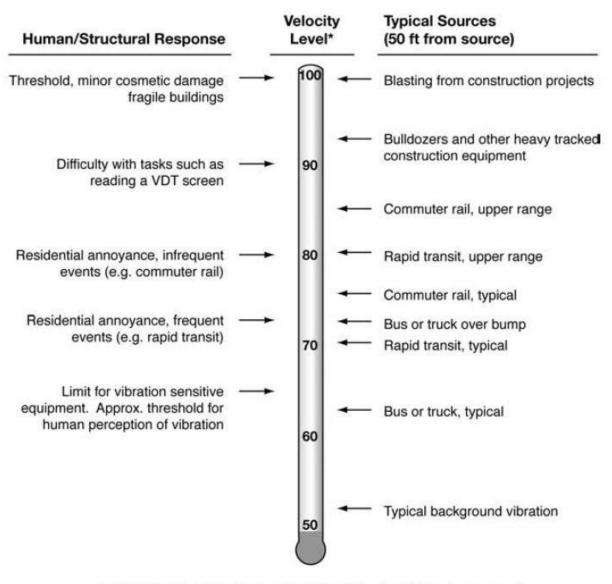
EXHIBIT 2-B: NOISE LEVEL INCREASE PERCEPTION

### 2.8 VIBRATION

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

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

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



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

\* RMS Vibration Velocity Level in VdB relative to 10<sup>-6</sup> inches/second

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



# **3 REGULATORY SETTING**

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

# 3.1 STATE OF CALIFORNIA NOISE REQUIREMENTS

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

# **3.2** STATE OF CALIFORNIA GREEN BUILDING STANDARDS CODE

The State of California's Green Building Standards Code contains mandatory measures for nonresidential building construction in Section 5.507 on Environmental Comfort. (9) These noise standards are applied to new construction in California for controlling interior noise levels resulting from exterior noise sources. The regulations specify that acoustical studies must be prepared when non-residential structures are developed in areas where the exterior noise levels exceed 65 dBA CNEL, such as within a noise contour of an airport, freeway, railroad, and other areas where noise contours are not readily available. If the development falls within an airport or freeway 65 dBA CNEL noise contour, the combined sound transmission class (STC) rating of the wall and roof-ceiling assemblies must be at least 50. For those developments in areas where noise contours are not readily available, and the noise level exceeds 65 dBA L<sub>eq</sub> for any hour of operation, a wall and roof-ceiling combined STC rating of 45, and exterior windows with a minimum STC rating of 40 are required (Section 5.507.4.1).

# 3.3 CITY OF CORONA GENERAL PLAN PUBLIC HEALTH AND SAFETY ELEMENT

The City of Corona has adopted a Noise section in its Public Health and Safety Element of the General Plan to control and abate environmental noise, and to protect the citizens of the City of Corona from excessive exposure to noise. (10) The Public Health and Safety Element specifies the maximum allowable exterior noise levels for new developments impacted by transportation noise sources such as arterial roads, freeways, airports and railroads. In addition, the Public



Health and Safety Element identifies several polices to minimize the impacts of excessive noise levels throughout the community and establishes noise level requirements for all land uses. To protect City of Corona residents from excessive noise, the Public Health and Safety Element contains the following six goals:

- 11.4 Ensure that appropriate actions are taken to protect residents, visitors, and noise-sensitive land uses from adverse human health and environmental impacts created by excessive noise levels from ambient sources.
- 11.5 Prevent and mitigate the adverse impacts of excessive ambient noise exposure on residents, employees, visitors, and noise-sensitive land uses within the City of Corona.
- 11.6 Provide sufficient information concerning community noise levels to ensure that noise can be objectively considered and incorporated into land use planning.
- 11.7 Provide for the reduction of noise spillover or encroachment where the noise environment from commercial and industrial land uses is unacceptable; and protect and maintain adjoining residential areas and other noise-sensitive areas having acceptable noise environments.
- 11.8 Minimize potentially adverse noise impacts associated with the development of mixed-use structures in which residential dwelling units are proposed above ground floor commercial or institutional uses.
- 11.9 Minimize noise impacts created by the Santa Fe railroad transit on residential areas and other noise-sensitive land use areas.

To protect its residents, visitors, and noise-sensitive land uses from high levels of noise (Goal 11.4), Table 4 of the Public Health and Safety Element identifies guidelines to evaluate proposed developments based on exterior and interior noise level limits for land uses. The Public Health and Safety Element requires new developments in areas where existing ambient exterior noise levels already exceed 65 dBA CNEL to include satisfactory buffering or construction mitigation measures to reduce noise impacts to levels lower than the standards found in Table 5 (Goal 11.5). To satisfy Goal 11.6, the City will maintain its Noise Ordinance and noise regulations to incorporate noise considerations into land use planning decisions for future incompatibilities. The intent of Goal 11.7 is to require new commercial and industrial uses to include mitigation measures in the site design in order to reduce impacts to neighboring noise-sensitive land uses. To mitigate the noise from mixed-use development (Goal 11.8), the Public Health and Safety Element requires mixed-use structures to incorporate noise reducing design elements and prohibits high noise-generating uses below or near residential land uses unless a noise analysis can demonstrate appropriate noise mitigation is attainable. Goal 11.9 seeks to prevent current and future operations of the Santa Fe railroad from impacting noise-sensitive land uses through rail line maintenance, noise mitigation features, and lower speed limits during early morning and late evening hours. (10)

### 3.3.1 LAND USE COMPATIBILITY

The noise criteria identified in the City of Corona Public Health and Safety Element (Table 4) are guidelines to evaluate the land use compatibility of transportation related noise. The compatibility criteria, shown on Exhibit 3-A, provides the City with a planning tool to gauge the compatibility of land uses relative to existing and future exterior noise levels



The Land Use Noise Compatibility Matrix describes categories of compatibility and not specific noise standards. The proposed Bedford Marketplace contains a hotel, health/fitness club, day care center, retail shopping center, bank, restaurants, gas station and automated car wash uses.

These general commercial land uses are considered *clearly compatible* with unmitigated exterior noise levels of less than 60 dBA CNEL, *normally compatible* with unmitigated exterior noise levels approaching 70 dBA CNEL and *normally incompatible* with unmitigated exterior noise levels approaching 80 dBA CNEL. For *normally incompatible* land use, *new construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of noise reduction requirements must be made and needed noise insulation features included in the design.* 

#### 3.3.2 ON-SITE TRANSPORTATION NOISE STANDARDS

The City of Corona General Plan Public Health and Safety Element specifies the maximum noise levels allowable for new developments impacted by transportation noise sources such as arterial roads, freeways, airports and railroads.

For noise-sensitive uses, Table 5 Interior and Exterior Noise Standards of the Public Health and Safety Element indicates that the exterior noise levels shall not exceed 65 dBA CNEL and interior noise levels of 45 dBA CNEL. The 65 dBA CNEL exterior noise standards typically apply to outdoor areas where people congregate. In relation to the proposed Bedford Marketplace, the 65 dBA CNEL exterior noise standards apply only to the hotel outdoor pool area. The City of Corona does not identify any exterior noise standards for other commercial land use activities such as restaurant outdoor patio areas. The City of Corona transportation noise standards are shown on Exhibit 3-B.



Land	Use Categories		Comn	nunity		Equiva	lent L	evel Cl	
Categories	Uses	<5.	5	60	65	70	75	4- ( ) -	80>
RESIDENTIAL	Single Family, Duplex	A	Α	B		в	D	D	D
RESIDENTIAL	Multiple Family	A	Α	B	£	В	С	D	D
RESIDENTIAL	Mobile Home	A	Α	B	81 20	С	С	D	D
COMMERCIAL Regional, District	Hotel, Motel Transient Lodging	A	A	В		в	с	с	D
COMMERCIAL Regional, Village District, Special	Commercial Retail, Bank, Restaurant, Movie Theatre	A	A	A		A	в	в	с
COMMERCIAL OFFICE INSTITUTIONAL	Office Building, Research and Development, Professional Offices, City Office Building	A	A	م		в	в	с	D
COMMERCIAL Recreation INSTITUTIONAL Civic Center	Amphitheatre, Concert Hall Auditorium, Meeting Hall	в	в	c	: - 1	c	D	D	D
COMMERCIAL Recreation	Children's Amusement Park, Miniature Golf Course, Go-cart Track, Equestrian Center, Sports Club	A	A	A		в	в	D	D
COMMERCIAL General, Special INDUSTIRAL, INSTITUTIONAL	Automobile Service Station, Auto Dealership, Manufacturing, Warehousing, Wholesale, Utilities		A	A		A	в	в	в
INSTITUTIONAL General	Hospital, Church, Library, Schools' Classroom		A	B		c	с	D	D
OPEN SPACE	Parks		A	A		В	С	D	D
OPEN SPACE	Golf Course, Cemeteries, Nature Centers Wildlife Reserves, Wildlife Reserves, Wildlife Habitat		A	4	6	A	в	с	с
AGRICULTURE	Agriculture	A	A	A	6 B	A	A	Α	A
Interpretation									
Zone A Specified la	nd use is satisfactory, based upon the assumption that any / special noise insulation requirements.	buildings	involv	ed are	of nor	mal con	ventio	nal cor	nstructio
Zone B New const Normally Compatible made and r	ruction or development should be undertaken only after needed noise insulation features in the design are determi pply systems or air conditioning, will normally suffice. No	ned. Cor	ventio	nal con	nstructi	on, wit	h dos	ed win	dows a
Zone C New const	ruction or development should generally be discouraged alysis of noise reduction requirements must be made and n								
Zone D New const Clearly Incompatible	ruction of development should generally not be undertaker	1.				1			

#### EXHIBIT 3-A: LAND USE NOISE COMPATIBILITY MATRIX



	Land Use Categories	Energy Av	erage CNEL
Categories	Uses	Interior	Exterior
RESIDENTIAL	Single Family, Duplex, Multiple Family		65
	Mobile Home	NA	654
COMMERCIAL	Hotel, Motel, Transient Lodging	45	655
	Commercial Retail, Bank, Restaurant	55	NA
INSTITUTIONAL	Office Building, Research and Development, Professional Offices, City Office Building	50	NA
	Amphitheatre, Concert Hall Auditorium, Meeting Hall	45	NA
	Gymnasium (Multipurpose)	50	NA
	Sports Club	55	NA
	Manufacturing, Warehousing, Wholesale, Utilities	65	NA
	Movie Theatres	45	NA
INSTITUTIONAL	Hospital, Schools' classroom	45	65
	Church, Library	45	NA
OPEN SPACE	Parks	NA	65
INTERPRETATION I. Indoor environment 2. Outdoor environme Private yard of s	excluding bathrooms, toilets, closets, corridors. nt limited to: ingle family ate patio or balcony that is served by a means of exit from inside		03

EXHIBIT 3-B: IN	ITERIOR AND EXTERIOR	NOISE STANDARDS
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lospital patio

Park's picnic area

School's playground Hotel and motel recreation area

3. Noise level requirement with closed windows. Mechanical ventilating system or other means of natural ventilation shall be provided as of Chapter 12, Section 1205 of UBC.

4. Exterior noise level should be such that interior noise level will not exceed 45 CNEL

5. Except those areas affected by aircraft noise.

### **3.4 OPERATIONAL NOISE STANDARDS**

To analyze noise impacts originating from a designated fixed location or private property such as the Bedford Marketplace, operational source noise such as roof-top air conditioning units, drivethru speakerphones, trash enclosures, parking lots, gas station activity, car wash tunnel, car wash vacuums, and outdoor playground activity are typically evaluated against standards established under a City's Municipal Code.

#### 3.4.1 CITY OF CORONA OPERATIONAL NOISE STANDARDS

The City of Corona Municipal Code, Section 17.84.040 *Noise*, provides noise control guidelines for determining and mitigating non-transportation or stationary-source noise impacts from operations at private properties. The City of Corona Municipal Code defines *Stationary Noise Source Standards* in Section 17.84.040(C)(2), Table 1, for different land uses. For noise-sensitive residential properties, the Municipal Code identifies operational noise level limits for the daytime (7:00 a.m. to 10:00 p.m.) hours of 55 dBA L<sub>50</sub> and 50 dBA L<sub>50</sub> during the nighttime (10:00 p.m. to 7:00 a.m.) hours. (11) These standards shall apply for a cumulative period of 30 minutes in any hour, as well as plus 5 dBA cannot be exceeded for a cumulative period of more than 15 minutes in any hour, or the standard plus 10 dBA for a cumulative period of more than 5 minutes in any



hour, or the standard plus 15 dBA for a cumulative period of more than 1 minute in any hour, or the standard plus 20 dBA for any period of time. The City of Corona Municipal Code noise standards are shown on Table 3-1 and included in Appendix 3.1.

	Land	Time	Exterior Noise Level Standards (dBA Leq) <sup>2</sup>						
Jurisdiction	Use	Period	L <sub>50</sub> (30 mins)	L <sub>25</sub> (15 mins)	L <sub>8</sub> (5 mins)	L <sub>2</sub> (1 min)	L <sub>max</sub> (Anytime)		
City of	Decidential	Daytime	55.0	60.0	65.0	70.0	75.0		
City of Corona <sup>1</sup>	Residential	Nighttime	50.0	55.0	60.0	65.0	70.0		

#### TABLE 3-1: OPERATIONAL NOISE STANDARDS

<sup>1</sup> Source: City of Corona Municipal Code, Section 17.84.040 Noise (Appendix 3.1).

 $^{2}$  The percent noise level is the level exceeded "n" percent of the time during the measurement period. L25 is the noise level exceeded 25% of the time.

"Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

### **3.5 CONSTRUCTION NOISE STANDARDS**

To analyze noise impacts originating from the construction of the Bedford Marketplace, noise from construction activities are typically evaluated against standards established under a City's Municipal Code. The construction-related noise standards for the City are summarized in Table 3-2.

#### 3.5.1 CITY OF CORONA CONSTRUCTION NOISE STANDARDS

Section 17.84.040(D)(2) of the City of Corona Municipal Code, provided in Appendix 3.1, indicates that construction noise is prohibited between the hours of 8:00 p.m. to 7:00 a.m., Monday through Saturday and 6:00 p.m. to 10:00 a.m. on Sundays and federal holidays. (11) Construction noise is defined as noise which is disturbing, excessive or offensive and constitutes a nuisance involving discomfort or annoyance to persons of normal sensitivity residing in the area, which is generated by the use of any tools, machinery or equipment used in connection with construction operations. The City of Corona Municipal Code effectively considers construction noise as exempt if construction noise is limited to the permitted hours of activity.

However, neither the General Plan nor Municipal Code establish numeric maximum acceptable construction source noise levels at potentially affected receivers, which would allow for a quantified determination of what CEQA constitutes a *substantial temporary or periodic noise increase*. To allow for a quantified determination of what the City of Corona Municipal Code constitutes as noise that *may be detrimental to the public health, safety or general welfare* due to Project construction activity, relevant stationary source noise standards established in Section 17.84.040(C)(2) Table 1, are used in this analysis to assess the Project construction noise levels at nearby sensitive receivers. Section 17.84.040(C)(2) Table 1 establishes a maximum allowable exterior noise level standard for residential land use of 55 dBA L<sub>50</sub> for a cumulative period of more 30 minutes in any hour. This same noise standard limits the exterior noise levels to the noise standard (55 dBA ) plus 20 dBA for any period of time. This effectively limits the maximum noise

level to 75 dBA  $L_{max}$  as shown on Table 3-1. Therefore, consistent with the City of Corona Municipal Code, an exterior noise level of 75 dBA  $L_{max}$  is used to describe the maximum acceptable threshold for determining the impacts due to Project construction for sensitive receivers. The City of Corona construction noise standards are shown on Table 3-2 and included in Appendix 3.1.

Jurisdiction	Permitted Hours of Construction Activity	Construction Noise Level Standard
City of Corona <sup>1</sup>	7:00 a.m. to 8:00 p.m. Monday to Saturday; 10:00 a.m. to 6:00 p.m. on Sundays & Holidays.	75 dBA L <sub>max</sub>

**TABLE 3-2: CONSTRUCTION NOISE STANDARDS** 

<sup>1</sup>Source: City of Corona Municipal Code, Section 17.84.040(D)(2) (Appendix 3.1).

<sup>2</sup> Acceptable construction noise threshold based on the maximum stationary source noise level standards shown on Table 3-1.

### **3.6 CONSTRUCTION VIBRATION STANDARDS**

To analyze the vibration impacts originating from the construction of the Project, vibration from construction activities are typically evaluated against standards established under a City's Municipal Code.

#### 3.6.1 CITY OF CORONA VIBRATION STANDARDS

The City of Corona Municipal Code, Section 17.84.050, identifies a vibration velocity standard of 0.05 in/sec root-mean-square (RMS) for sensitive land uses which is used in this analysis as the basis for determining the relative significance of potential Project related vibration impacts. (11) The City of Corona vibration standards are shown on Table 3-3 and included in Appendix 3.1.

#### **3.6.2** HUMAN PERCEPTION OF VIBRATION

Typically, the human response at the perception threshold for vibration includes annoyance in residential areas as previously shown on Exhibit 2-B, when vibration levels expressed in vibration decibels (VdB) approach 75 VdB. The City of Corona, however, identifies a vibration perception threshold of 0.05 in/sec at or beyond the property line of the source land use. For vibration levels expressed in velocity, the human body responds to the average vibration amplitude often described as the root-mean-square (RMS). The RMS of a signal is the average of the squared amplitude of the signal, typically calculated over a one-second period. As with airborne sound, the RMS velocity is often expressed in decibel notation as vibration decibels (VdB), which serves to reduce the range of numbers used to describe human response to vibration. Therefore, the City of Corona vibration standard of 0.05 in/sec in RMS velocity levels is used in this analysis to assess the human perception of vibration levels due to Project-related construction activities.

Jurisdiction	Root-Mean-Square Velocity Standard (in/sec)	
City of Corona <sup>1</sup>	0.05	

#### TABLE 3-3: CONSTRUCTION VIBRATION STANDARDS

<sup>1</sup> Source: City of Corona Municipal Code, Section 17.84.050 Vibration (Appendix 3.1).



# 4 SIGNIFICANCE CRITERIA

The following significance criteria are based on currently adopted guidance provided by Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (2) For the purposes of this report, impacts would be potentially significant if the Project results in or causes:

- A. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?
- B. Generation of excessive ground-borne vibration or ground-borne noise levels?
- C. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

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

### 4.1 CEQA GUIDELINES NOT FURTHER ANALYZED

The Project site is located roughly 6.5 miles southeast of Corona Municipal Airport. Therefore, the Project site is not located within two miles of a public airport or the vicinity of a private airstrip, and as such, no impact related to the exposure of people residing or working in the Project area to excessive airport related noise levels is anticipated.

### 4.2 PROJECT RELATED NOISE LEVEL INCREASES

Noise level increases resulting from the Project are evaluated based on the Appendix G CEQA Guidelines described above at the closest sensitive receiver locations. Under CEQA, consideration must be given to the magnitude of the increase, the existing ambient noise levels, and the location of noise-sensitive receivers to determine if a noise increase represents a significant adverse environmental impact. This approach recognizes *that there is no single noise increase that renders the noise impact significant.* (12) Unfortunately, there is no completely satisfactory way to measure the subjective effects of noise or of the corresponding human reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance and differing individual experiences with noise. Thus, an important way of determining a person's subjective reaction to a new noise is the comparison of it to the existing environment to which one has adapted—the so-called *ambient* environment.

In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will typically be judged. The Federal Interagency Committee on Noise (FICON) (13) developed guidance to be used for the assessment of project-generated increases in noise levels that consider the ambient noise level. The FICON recommendations are based on



studies that relate aircraft noise levels to the percentage of persons highly annoyed by aircraft noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, these recommendations are often used in environmental noise impact assessments involving the use of cumulative noise exposure metrics, such as the average-daily noise level (CNEL) and equivalent continuous noise level (L<sub>eq</sub>).

As previously stated, the approach used in this noise study recognizes *that there is no single noise increase that renders the noise impact significant*, based on a 2008 California Court of Appeal ruling on Gray v. County of Madera. (12) For example, if the ambient noise environment is quiet (<60 dBA) and the new noise source greatly increases the noise levels, an impact may occur if the noise criteria may be exceeded. Therefore, for this analysis, FICON identifies a *readily perceptible* 5 dBA or greater project-related noise level increase is considered a significant impact when the noise criteria for a given land use is exceeded. Per the FICON, in areas where the without project noise levels range from 60 to 65 dBA, a 3 dBA *barely perceptible* noise level increase appears to be appropriate for most people. When the without project noise levels already exceed 65 dBA, any increase in community noise louder than 1.5 dBA or greater is considered a significant impact if the noise criteria for a given land use is exceeded, since it likely contributes to an existing noise exposure exceedance. Table 4-1 below provides a summary of the potential noise impact significance criteria, based on guidance from FICON.

#### TABLE 4-1: SIGNIFICANCE OF NOISE IMPACTS AT NOISE-SENSITIVE RECEIVERS

Without Project Noise Level	Potential Significant Impact		
< 60 dBA	5 dBA or more		
60 - 65 dBA	3 dBA or more		
> 65 dBA	1.5 dBA or more		

Federal Interagency Committee on Noise (FICON), 1992.

### 4.3 SIGNIFICANCE CRITERIA SUMMARY

Noise impacts shall be considered significant if any of the following occur as a direct result of the proposed development. The significance criteria are shown on Table 4-2.

#### OFF-SITE TRAFFIC NOISE

- When the noise levels at existing and future noise-sensitive land uses (e.g. residential, etc.):
  - are less than 60 dBA CNEL and the Project creates a *readily perceptible* 5 dBA CNEL or greater Project-related noise level increase; or
  - range from 60 to 65 dBA CNEL and the Project creates a *barely perceptible* 3 dBA CNEL or greater Project-related noise level increase; or
  - already exceed 65 dBA CNEL, and the Project creates a community noise level increase of greater than 1.5 dBA CNEL (FICON, 1992).



#### **ON-SITE TRAFFIC NOISE**

• If the on-site exterior noise levels exceed 65 dBA CNEL at the outdoor pool area of the hotel use. Interior noise levels shall not exceed 45 dBA CNEL for hotel uses and 55 dBA CNEL for all other commercial uses consistent with the General Plan Public Health and Safety Element interior and exterior noise standards. (See Exhibit 3-B).

#### **OPERATIONAL NOISE**

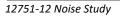
- If Project-related operational (stationary-source) noise levels:
  - exceed the exterior 55 dBA  $L_{50}$  daytime or 50 dBA  $L_{50}$  nighttime noise level standards for sensitive residential land uses. These standards shall not be exceeded for a cumulative period of 30 minutes ( $L_{50}$ ), or plus 5 dBA cannot be exceeded for a cumulative period of more than 15 minutes ( $L_{25}$ ) in any hour, or the standard plus 10 dBA for a cumulative period of more than 5 minutes ( $L_8$ ) in any hour, or the standard plus 15 dBA for a cumulative period of more than 1 minute ( $L_2$ ) in any hour, or the standard plus 20 dBA at any time ( $L_{max}$ ) (City of Corona Municipal Code, Section 17.84.040).
- If the existing ambient noise levels at the nearby noise-sensitive receivers near the Project site:
  - $\circ~$  are less than 60 dBA  $L_{50}$  and the Project creates a readily perceptible 5 dBA  $L_{50}$  or greater Project-related noise level increase; or
  - $\circ~$  range from 60 to 65 dBA  $L_{50}$  and the Project creates a barely perceptible 3 dBA  $L_{50}$  or greater Project-related noise level increase; or
  - $\circ$  already exceed 65 dBA L<sub>50</sub>, and the Project creates a community noise level increase of greater than 1.5 dBA L<sub>50</sub> (FICON, 1992).

#### **CONSTRUCTION NOISE**

- If Project-related construction activities:
  - o cocur at any time other than between the permitted the hours of 7:00 a.m. and 8:00 p.m., Monday through Saturday, and 10:00 a.m. and 6:00 p.m. on Sundays and Federal holidays (City of Corona Municipal Code Section 17.84.040(D)(2)); or
  - $\circ~$  create noise levels at sensitive residential receivers in the which exceed the short-term construction noise level limit of 75 dBA  $L_{max}$  (City of Corona Municipal Code Section 17.84.040).

#### **CONSTRUCTION VIBRATION**

• If short-term Project generated construction source vibration levels exceed the City of Corona maximum acceptable vibration standard of 0.05 in/sec at noise-sensitive receiver locations (City of Corona Municipal Code Section 17.84.050).





Analysia	Receiving	Condition(c)	Significance Criteria	
Analysis	Land Use	Condition(s)	Daytime	Nighttime
Off-Site Traffic	Noise- Sensitive <sup>1</sup>	If ambient is < 60 dBA CNEL	≥ 5 dBA CNEL Project increase	
		If ambient is 60 - 65 dBA CNEL	≥ 3 dBA CNEL Project increase	
		If ambient is > 65 dBA CNEL	≥ 1.5 dBA CNEL Project increase	
On-Site Traffic <sup>2</sup>	Hotel	Exterior Noise Level Standard	65 dBA CNEL (hotel pool)	
		Interior Noise Level Standard	45 dBA CNEL	
	Commercial	Exterior Noise Level Standard	n/a	
		Interior Noise Level Standard	55 dBA CNEL	
Operational	Noise- Sensitive	Exterior Noise Level Standards <sup>3</sup>	See Table 3-1.	
Construction	Noise- Sensitive	Noise Level Threshold <sup>3</sup>	75 dBA L <sub>max</sub>	n/a
		Vibration Level Threshold <sup>4</sup>	0.05 in/sec RMS	n/a

#### TABLE 4-2: SIGNIFICANCE CRITERIA SUMMARY

<sup>1</sup> Source: FICON, 1992.

<sup>2</sup> Source: Public Health & Safety Element Interior and Exterior Noise Standards (Exhibit 3-B).

<sup>3</sup> Source: City of Corona Municipal Code, Section 17.84.040 Noise (Appendix 3.1).

<sup>4</sup> Source: City of Corona Municipal Code, Section 17.84.050 Vibration (Appendix 3.1).

"Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.; "n/a" = No nighttime construction activity is permitted, so no nighttime construction noise level limits are identified; "RMS" = root-mean-square



# 5 EXISTING NOISE LEVEL MEASUREMENTS

To assess the existing noise level environment, 24-hour noise level measurements were taken at four locations in the Project study area. The receiver locations were selected to describe and document the existing noise environment within the Project study area. Exhibit 5-A provides the boundaries of the Project study area and the noise level measurement locations. To fully describe the existing noise conditions, noise level measurements were collected by Urban Crossroads, Inc. on Friday, August 2<sup>nd</sup>, 2019. Appendix 5.1 includes study area photos.

# 5.1 MEASUREMENT PROCEDURE AND CRITERIA

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

# 5.2 NOISE MEASUREMENT LOCATIONS

The long-term noise level measurements were positioned as close to the nearest sensitive receiver locations as possible to assess the existing ambient hourly noise levels surrounding the Project site. Both Caltrans and the FTA recognize that it is not reasonable to collect noise level measurements that can fully represent every part of a private yard, patio, deck, or balcony normally used for human activity when estimating impacts for new development projects. This is demonstrated in the Caltrans general site location guidelines which indicate that, *sites must be free of noise contamination by sources other than sources of interest. Avoid sites located near sources such as barking dogs, lawnmowers, pool pumps, and air conditioners unless it is the express intent of the analyst to measure these sources. (3) Further, FTA guidance states, that it is not necessary nor recommended that existing noise exposure be determined by measuring at every noise-sensitive location in the project area. Rather, the recommended approach is to characterize the noise environment for clusters of sites based on measurements or estimates at representative locations in the community. (15)* 

Based on recommendations of Caltrans and the FTA, it is not necessary to collect measurements at each individual building or residence, because each receiver measurement represents a group of buildings that share acoustical equivalence. (15) In other words, the area represented by the receiver shares similar shielding, terrain, and geometric relationship to the reference noise source. Receivers represent a location of noise sensitive areas and are used to estimate the future noise level impacts. Collecting reference ambient noise level measurements at the nearby sensitive receiver locations allows for a comparison of the before and after Project noise levels



and is necessary to assess potential noise impacts due to the Project's contribution to the ambient noise levels.

#### 5.3 NOISE MEASUREMENT RESULTS

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

- Location L1 represents the noise levels northwest of Project site on Eagle Glen Parkway and Bedford Canyon Road near existing residential homes. The noise levels at this location consist primarily of traffic noise from Glen Eagle Parkway and Bedford Canyon Road. The noise level measurements collected show an overall 24-hour exterior noise level of 71.4 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 67.3 dBA L<sub>eq</sub> with an average nighttime noise level of 63.9 dBA L<sub>eq</sub>.
- Location L2 represents the noise levels west of the Project site near existing vacant dirt lot. The ambient noise levels at this location account for the background traffic from Glen Eagle Parkway and Interstate 15 Freeway. The noise level measurements collected show an overall 24-hour exterior noise level of 62.7 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 57.3 dBA L<sub>eq</sub> with an average nighttime noise level of 55.8 dBA L<sub>eq</sub>.
- Location L3 represents the noise levels South of the project site on Glen Road and North Weirick Road near vacant land and existing residential homes. The noise level measurements collected show an overall 24-hour exterior noise level of 59.0 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 53.3 dBA L<sub>eq</sub> with an average nighttime noise level of 52.1 dBA L<sub>eq</sub>. The noise levels at this location consist primarily of traffic noise from North Weirick Road and Glen Road.
- Location L4 represents the noise levels southeast of the Project site on Glen Road near existing residential homes and vacant lot. The 24-hour CNEL indicates that the overall exterior noise level is 55.9 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 49.6 dBA L<sub>eq</sub> with an average nighttime noise level of 49.2 dBA L<sub>eq</sub>. Traffic on Glen Road represents the primary source of noise at this location.



Table 5-1 provides the (energy average) noise levels used to describe the daytime and nighttime ambient conditions. These daytime and nighttime energy average noise levels represent the average of all hourly noise levels observed during these time periods expressed as a single number. Appendix 5.2 provides summary worksheets of the noise levels for each hour as well as the minimum, maximum, L<sub>1</sub>, L<sub>2</sub>, L<sub>5</sub>, L<sub>8</sub>, L<sub>25</sub>, L<sub>50</sub>, L<sub>90</sub>, L<sub>95</sub>, and L<sub>99</sub> percentile noise levels observed during the daytime and nighttime periods.

The background ambient noise levels in the Project study area are dominated by the transportation-related noise associated with surface streets as well as Interstate 15. This includes the auto and heavy truck activities on study area roadway segments near the noise level measurement locations. The 24-hour existing noise level measurement results are shown on Table 5-1.

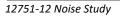
Location <sup>1</sup>	Description	Energy Average Noise Level (dBA L <sub>eq</sub> ) <sup>2</sup>		Median Noise Level (dBA L <sub>50</sub> ) <sup>2</sup>		CNEL
		Daytime	Nighttime	Daytime	Nighttime	
L1	Located northwest of Project site on Eagle Glen Parkway and Bedford Canyon Road near existing residential homes.	67.3	63.9	60.2	53.7	71.4
L2	Located west of the Project site near existing vacant dirt lot.	57.3	55.8	54.4	52.1	62.7
L3	Located South of the project site on Glen Road and North Weirick Road near vacant land and existing residential homes.	53.3	52.1	52.0	50.8	59.0
L4	Located southeast of the Project L4 site on Glen Road near existing residential homes and vacant lot.		49.2	47.7	47.7	55.9

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

<sup>1</sup> See Exhibit 5-A for the noise level measurement locations.

<sup>2</sup> The long-term 24-hour measurement worksheets are included in Appendix 5.2.

"Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.





**EXHIBIT 5-A: NOISE MEASUREMENT LOCATIONS** 

#### LEGEND:

A Noise Measurement Locations



# 6 METHODS AND PROCEDURES

The following section outlines the methods and procedures used to model and analyze the future traffic noise environment.

# 6.1 FHWA TRAFFIC NOISE PREDICTION MODEL

The estimated roadway noise impacts from vehicular traffic were calculated using a computer program that replicates the Federal Highway Administration (FHWA) Traffic Noise Prediction Model- FHWA-RD-77-108. (16) The FHWA Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). In California the national REMELs are substituted with the California Vehicle Noise (Calveno) Emission Levels. (17) Adjustments are then made to the REMEL to account for: the roadway classification (e.g., collector, secondary, major or arterial), the roadway active width (i.e., the distance between the center of the outermost travel lanes on each side of the roadway), the total average daily traffic (ADT), the travel speed, the percentages of automobiles, medium trucks, and heavy trucks in the traffic volume, the roadway grade, the angle of view (e.g., whether the roadway view is blocked), the site conditions ("hard" or "soft" relates to the absorption of the ground, pavement, or landscaping), and the percentage of total ADT which flows each hour throughout a 24-hour period. Research by Caltrans has shown that the use of soft site conditions is appropriate for the application of the FHWA traffic noise prediction model used in this analysis. (18)

# 6.2 OFF-SITE TRAFFIC NOISE PREDICTION MODEL INPUTS

Table 6-1 presents the roadway parameters used to assess the Project's off-site transportation noise impacts. Table 6-1 identifies the 21 study area roadway segments, the distance from the centerline to adjacent land use based on the functional roadway classifications per the City of Corona General Plan Circulation Element, and the posted vehicle speeds. For the purpose of the off-site analysis, soft site conditions were used to analyze the traffic noise impacts for the Project study area. Soft site conditions account for the sound propagation loss over natural surfaces such as normal earth and ground vegetation.

## 6.2.1 PROJECT TRAFFIC

The Existing, Interim Year 2021, and Horizon Year 2035 average daily traffic volumes used for this study are presented on Table 6-2 and are provided by *Bedford Marketplace Traffic Study*. (1) Table 6-3 presents the time of day vehicle splits and Table 6-4 presents the traffic flow distributions (vehicle mix) used for this analysis. The vehicle mix provides the hourly distribution percentages of automobile, medium trucks and heavy trucks for input into the FHWA noise prediction model



ID	Roadway	Segment	Adjacent Planned (Existing if Different) Land Use <sup>1</sup>	Distance from Centerline to Nearest Adjacent Land Use (Feet) <sup>2</sup>	Vehicle Speed (mph)
1	Masters Dr.	n/o California Av.	Residential	34'	40
2	Masters Dr.	s/o California Av.	Residential	34'	40
3	Masters Dr.	n/o Bennet Av.	Residential	34'	40
4	Masters Dr.	n/o Eagle Glen Pkwy.	Residential	34'	40
5	Bedford Cyn. Rd.	s/o El Cerrito Rd.	Residential	38'	40
6	Bedford Cyn. Rd.	n/o Georgetown Dr.	Residential	38'	40
7	Bedford Cyn. Rd.	n/o Eagle Glen Pkwy.	Residential	38'	40
8	Temescal Cyn. Rd.	n/o Cajalco Rd.	General Commercial	53'	45
9	Temescal Cyn. Rd.	s/o Cajalco Rd.	Agriculture	53'	45
10	California Av.	w/o Masters Dr.	General Commercial	34'	40
11	California Av.	e/o Masters Dr.	General Commercial	34'	40
12	El Cerrito Rd.	w/o Bedford Cyn. Rd.	General Industry	44'	40
13	El Cerrito Rd.	e/o Bedford Cyn. Rd.	Residential	44'	40
14	El Cerrito Rd.	e/o I-15 SB Ramps	Freeway	44'	40
15	El Cerrito Rd.	e/o I-15 NB Ramps	Residential	44'	40
16	Eagle Glen Pkwy.	e/o Masters Dr.	Residential	44'	40
17	Eagle Glen Pkwy.	e/o Bedford Cyn. Rd.	Open Space	65'	45
18	Cajalco Rd.	e/o I-15 SB Ramps	General Commercial	65'	45
19	Cajalco Rd.	e/o I-15 NB Ramps	General Commercial	65'	45
20	Cajalco Rd.	e/o Grand Oaks	General Commercial	65'	45
21	Cajalco Rd.	e/o Temescal Cyn. Rd.	General Commercial	65'	45

#### TABLE 6-1: OFF-SITE ROADWAY PARAMETERS

<sup>1</sup>Sources: City of Corona General Plan Atlas, 2012, and the County of Riverside Temescal Canyon Area Land Use Plan, 2003.

<sup>2</sup> Distance to adjacent land use is based upon the right-of-way distances for each functional roadway classification provided in the City of Corona General Plan Circulation Element.



				Ave	rage Daily T	raffic Volur	nes <sup>1</sup>	
ID	Roadway	Segment	Existing		Interim Year 2021		Horizon Year 2035	
			Without Project	With Project	Without Project	With Project	Without Project	With Project
1	Masters Dr.	n/o California Av.	4,452	4,682	5,049	5,069	8,000	8,250
2	Masters Dr.	s/o California Av.	9,364	9,364	10,071	10,153	8,800	9,668
3	Masters Dr.	n/o Bennet Av.	6,000	7,084	7,578	7,784	6,400	7,690
4	Masters Dr.	n/o Eagle Glen Pkwy.	5,466	6,648	7,098	7,346	6,100	7,532
5	Bedford Cyn. Rd.	s/o El Cerrito Rd.	7,800	9,490	10,133	10,401	14,500	16,458
6	Bedford Cyn. Rd.	n/o Georgetown Dr.	8,926	8,926	9,522	9,790	14,500	16,458
7	Bedford Cyn. Rd.	n/o Eagle Glen Pkwy.	8,088	9,876	10,542	10,852	14,200	16,298
8	Temescal Cyn. Rd.	n/o Cajalco Rd.	15,599	15,883	17,168	17,230	26,500	26,846
9	Temescal Cyn. Rd.	s/o Cajalco Rd.	21,684	22,242	24,029	24,091	21,000	28,448
10	California Av.	w/o Masters Dr.	5,244	5,480	5,912	5,954	8,300	8,578
11	California Av.	e/o Masters Dr.	7,000	7,320	7,897	7,917	10,800	11,140
12	El Cerrito Rd.	w/o Bedford Cyn. Rd.	24,043	25,127	27,108	27,294	29,000	30,270
13	El Cerrito Rd.	e/o Bedford Cyn. Rd.	25,534	26,140	28,244	28,326	35,100	35,788
14	El Cerrito Rd.	e/o I-15 SB Ramps	16,374	16,980	18,329	18,411	27,100	27,788
15	El Cerrito Rd.	e/o I-15 NB Ramps	9,519	10,125	10,909	10,991	17,200	17,888
16	Eagle Glen Pkwy.	e/o Masters Dr.	12,944	19,794	20,861	21,109	17,300	24,398
17	Eagle Glen Pkwy.	e/o Bedford Cyn. Rd.	18,480	33,686	35,209	36,713	20,600	37,310
18	Cajalco Rd.	e/o I-15 SB Ramps	20,220	29,005	30,671	31,546	24,900	34,560
19	Cajalco Rd.	e/o I-15 NB Ramps	30,314	32,680	35,178	35,426	30,700	33,314
20	Cajalco Rd.	e/o Grand Oaks	18,024	19,980	21,465	21,713	19,000	21,204
21	Cajalco Rd.	e/o Temescal Cyn. Rd.	20,076	21,190	22,844	22,968	30,000	31,238

#### TABLE 6-2: AVERAGE DAILY TRAFFIC VOLUMES

<sup>1</sup>Source: Bedford Marketplace Traffic Study, Urban Crossroads, Inc.

### TABLE 6-3: TIME OF DAY VEHICLE SPLITS

		Total of Time of		
Vehicle Type	Daytime	Evening	Nighttime	Day Splits
Autos	77.5%	12.9%	9.6%	100.00%
Medium Trucks	84.8%	4.9%	10.3%	100.00%
Heavy Trucks	86.5%	2.7%	10.8%	100.00%

<sup>1</sup> Source: Arantine Hills Modified Project Noise Impact Analysis, Urban Crossroads, Inc. April 9, 2015.

"Daytime" = 7:00 a.m. to 7:00 p.m.; "Evening" = 7:00 p.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

Deadway	٦	Total		
Roadway	Autos	Medium Trucks	Heavy Trucks	Total
All Segments	97.42%	1.84%	0.74%	100.00%
I-15 Freeway	94.39%	1.95%	3.66%	100.00%

### TABLE 6-4: DISTRIBUTION OF TRAFFIC FLOW BY VEHICLE TYPE (VEHICLE MIX)

<sup>1</sup> Source: Arantine Hills Modified Project Noise Impact Analysis, Urban Crossroads, Inc. April 9, 2015.

<sup>2</sup> Source: Caltrans Traffic Data Branch Annual Average Daily Truck Traffic (AADT) on the California State Highway System, 2013.

### 6.2.2 SOIL IMPORT/EXPORT HAUL TRUCK TRAFFIC

The Existing and Existing with Project (haul truck trips) average daily traffic volumes used for the soil import/export off-site traffic noise analysis are presented on Table 6-5. The without project average daily traffic volumes shown on Table 6-5 are based the published City of Corona average daily traffic volumes and the Kearny Sherborn Traffic Study prepared by Urban Crossroads, Inc. The with Project haul truck trips include both the 250 import and 250 export trips representing a total of 500 two-way (import and export) trips.

TABLE 6-5: SOIL IMPORT/EXPORT HAUL TRUCK AVERAGE DAILY TRAFFIC VOLUMES

	ID Roadway		Adjacent	Average Daily Traffic Volumes <sup>1</sup>		
ID		Segment	Existing Land Use	Without Project <sup>1</sup>	With Project Haul Truck Trips	
1	I-15 Freeway	n/o Cajalco Rd.	Residential/Commercial	164,000	164,500	
2	Magnolia Ave.	e/o I-15 Freeway	Commercial/Industrial	40,000	40,500	
3	Sherborn St.	s/o Magnolia Ave.	Commercial/Industrial	7,900	8,400	

<sup>1</sup> Source: City of Corona Average Daily Traffic Volumes (5/30/2017) and Kearny Sherborn Traffic Study (7/25/2019).

To quantify the off-site traffic noise levels, the Project related haul trips were added to the heavy truck category in the FHWA noise prediction model. The addition of the Project related haul trips increases the percentage of heavy trucks in the vehicle mix. This approach recognizes that the FHWA noise prediction model is significantly influenced by the number of heavy trucks in the vehicle mix. Table 6-6 presents the without project traffic flow distribution by vehicle type.

TABLE 6-6: WITHOUT SOIL IMPORT/EXHPORT HAUL TRUCK TRIPS (VEHICLE MIX)

ID Roadway		Tota				
	Roadway	Segment	Autos	Medium Trucks	Heavy Trucks	Total
1	I-15 Freeway	n/o Cajalco Rd.	94.39%	1.95%	3.66%	100%
2	Magnolia Ave.	e/o I-15 Freeway	97.42%	1.84%	0.74%	100%
3	Sherborn St.	s/o Magnolia Ave.	97.42%	1.84%	0.74%	100%



Table 6-7 presents the with project haul trips traffic flow distribution by vehicle type. As shown on Table 6-7, all the off-site roadway segments have a higher percentage of heavy trucks reflecting the additional haul heavy truck trips.

			Tota			
ID	Roadway	Segment	Autos		Heavy Trucks	Total
1	I-15 Freeway	n/o Cajalco Rd.	94.10%	1.94%	3.95%	100%
2	Magnolia Ave.	e/o I-15 Freeway	96.25%	1.82%	1.93%	100%
3	Sherborn St.	s/o Magnolia Ave.	91.09%	1.72%	7.19%	100%

TABLE 6-7: WITH SOIL IMPORT/EXHPORT HAUL TRUCK TRIPS (VEHICLE MIX)

# 6.3 ON-SITE TRAFFIC NOISE PREDICTION MODEL INPUTS

The on-site roadway parameters including the average daily traffic (ADT) volumes used for this study are presented on Table 6-8. The traffic volumes shown on Table 6-5 reflect future long-range traffic conditions needed to assess the future on-site traffic noise environment and to identify the any noise mitigation measures to address the worst-case future conditions. For the purposes of this analysis, soft site conditions were used to analyze the on-site traffic noise impacts for the Project study area. Soft site conditions account for the sound propagation loss over natural surfaces such as normal earth and ground vegetation.

TABLE 6-8: ON	-SITE ROADWAY PARAMETERS
---------------	--------------------------

Roadway Segment	Lanes	Classification	Traffic Volume <sup>1</sup>	Speed (MPH)	Site Conditions
I-15 Freeway s/o Cajalco Rd.	6	Freeway	198,280	65	Soft

<sup>1</sup> Source: Arantine Hills Modified Project Traffic Study (March 2015).

The site plan was used to identify the relationship between the roadway centerline elevation, the pad elevation and the centerline distance to the noise barrier, and the building façade. The exterior noise level impacts at the outdoor pool area of the hotel use were placed five feet above the pad elevation. The second floor receivers were located 15 feet above the proposed finished floor elevation, all third floor receivers were located 25 feet above the proposed finished floor elevation and all fourth floor receiver were located 35 feet above the proposed finished floor elevation.



# 6.4 VIBRATION ASSESSMENT

This analysis focuses on the potential ground-borne vibration associated with vehicular traffic and construction activities. Ground-borne vibration levels from automobile traffic are generally overshadowed by vibration generated by heavy trucks that roll over the same uneven roadway surfaces. However, due to the rapid drop-off rate of ground-borne vibration and the short duration of the associated events, vehicular traffic-induced ground-borne vibration is rarely perceptible beyond the roadway right-of-way, and rarely results in vibration levels that cause damage to buildings in the vicinity.

While vehicular traffic is rarely perceptible, construction has the potential to result in varying degrees of temporary ground vibration, depending on the specific construction activities and equipment used. Ground vibration levels associated with various types of construction equipment are summarized on Table 6-9. Based on the representative vibration levels presented for various construction equipment types, it is possible to estimate the human response (annoyance) using the following vibration assessment methods defined by the FTA. To describe the human response (annoyance) associated with vibration impacts the FTA provides the following equation:  $PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$ 

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

### TABLE 6-9: VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

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



# 7 OFF-SITE TRAFFIC NOISE IMPACTS

To assess the off-site transportation CNEL noise level impacts associated with development of the proposed Project, noise contours were developed based on *Bedford Marketplace Traffic Study*. (1) The off-site traffic noise analysis has been completed to determine the noise impacts associated with the development of the proposed Bedford Marketplace ("Project") an expansion of the previously approved commercial development area included within the Arantine Hills Specific Plan. The proposed Project represents the expansion of Bedford Marketplace from 80,000 sf to 135,000 sf of retail uses and a 135-room hotel. The incremental expansion of Bedford Marketplace constitutes the "Project" analyzed in this study. Based on the currently approved commercial trip generation in the Arantine Hills Traffic Assessment (November 2018), the Project is anticipated to generate an additional 2,061 external trips per day.

Noise contour boundaries represent the equal levels of noise exposure and are measured in CNEL from the center of the roadway. Noise contours were developed for the following traffic scenarios:

## PROJECT TRAFFIC

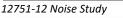
- <u>Existing Without / With Project</u>: This scenario refers to the existing present-day noise conditions, without and with the proposed Project. This condition is provided solely for analytical purposes and will not occur, since the Project will not be fully developed and occupied under Existing conditions.
- <u>Interim Year 2021 Without / With Project</u>: This scenario refers to the combination of existing traffic, ambient growth (total of 8%), approved Arantine Hills Specific Plan traffic, and increases in traffic volumes associated with the added Project land uses. The approved Arantine Hills Project traffic is also included as background traffic for Interim Year 2021 conditions.
- <u>Horizon Year 2035 Without / With Project</u>: This scenario refers the horizon year 2035 forecasts are derived from the approved Arantine Hills Specific Plan Traffic Assessment (November 2018).

## SOIL IMPORT/EXPORT HAUL TRUCK CONSTRUCTION TRAFFIC

• <u>Existing Without / With Project</u>: This scenario refers to the existing present-day noise conditions with the proposed 500 daily soil import/export truck haul trips.

# 7.1 PROJECT TRAFFIC NOISE CONTOURS

Noise contours were used to assess the Project's incremental traffic-related noise impacts at land uses adjacent to roadways conveying Project traffic. The noise contours represent the distance to noise levels of a constant value and are measured from the center of the roadway for the 70, 65, and 60 dBA noise levels. The noise contours do not consider the effect of any existing noise barriers or topography that may attenuate ambient noise levels. In addition, because the noise contours reflect modeling of vehicular noise on area roadways, they appropriately do not reflect noise contributions from the surrounding stationary noise sources within the Project study area. Tables 7-1 and 7-6 present a summary of the exterior traffic noise levels, without barrier attenuation, for the study area roadway segments analyzed from the without Project to the with





Project conditions for Existing, Interim Year 2021, and Horizon Year 2035 conditions. Appendix 7.1 includes a summary of the traffic noise level contours for each of the traffic scenarios.

				CNEL at Nearest		nce to Co enterline	
ID	Road	Segment	Planned (Existing) Land Use <sup>1</sup>	Adjacent Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Masters Dr.	n/o California Av.	Residential	64.3	RW	RW	66
2	Masters Dr.	s/o California Av.	Residential	67.5	RW	50	108
3	Masters Dr.	n/o Bennet Av.	Residential	65.6	RW	37	80
4	Masters Dr.	n/o Eagle Glen Pkwy.	Residential	65.2	RW	35	75
5	Bedford Cyn. Rd.	s/o El Cerrito Rd.	Residential	66.2	RW	46	98
6	Bedford Cyn. Rd.	n/o Georgetown Dr.	Residential	66.8	RW	50	108
7	Bedford Cyn. Rd.	n/o Eagle Glen Pkwy.	Residential	66.4	RW	47	101
8	Temescal Cyn. Rd.	n/o Cajalco Rd.	General Commercial	68.8	RW	96	206
9	Temescal Cyn. Rd.	s/o Cajalco Rd.	Agriculture	70.3	55	119	257
10	California Av.	w/o Masters Dr.	General Commercial	65.0	RW	34	73
11	California Av.	e/o Masters Dr.	General Commercial	66.2	RW	41	89
12	El Cerrito Rd.	w/o Bedford Cyn. Rd.	General Industry	70.4	47	101	217
13	El Cerrito Rd.	e/o Bedford Cyn. Rd.	Residential	70.7	49	105	226
14	El Cerrito Rd.	e/o I-15 SB Ramps	Freeway	68.7	RW	78	168
15	El Cerrito Rd.	e/o I-15 NB Ramps	Residential	66.4	RW	54	117
16	Eagle Glen Pkwy.	e/o Masters Dr.	Residential	67.7	RW	67	144
17	Eagle Glen Pkwy.	e/o Bedford Cyn. Rd.	Open Space	68.8	RW	116	250
18	Cajalco Rd.	e/o I-15 SB Ramps	General Commercial	69.2	RW	123	265
19	Cajalco Rd.	e/o I-15 NB Ramps	General Commercial	70.9	75	161	347
20	Cajalco Rd.	e/o Grand Oaks	General Commercial	68.7	RW	114	246
21	Cajalco Rd.	e/o Temescal Cyn. Rd.	General Commercial	69.1	RW	122	264

TABLE 7-1: 8	EXISTING WITHOUT PROJECT CONDITIONS NOISE CONTOURS

<sup>1</sup> Sources: City of Corona General Plan Atlas, January 2012, and the County of Riverside Temescal Canyon Area Land Use Plan

<sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use.



			Adjacent		Distance to Contour from Centerline (Feet)			
ID	Road	Road Segment Planned (Existing) Land Use <sup>1</sup>		Adjacent Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	
1	Masters Dr.	n/o California Av.	Residential	64.5	RW	RW	68	
2	Masters Dr.	s/o California Av.	Residential	67.5	RW	50	108	
3	Masters Dr.	n/o Bennet Av.	Residential	66.3	RW	42	89	
4	Masters Dr.	n/o Eagle Glen Pkwy.	Residential	66.0	RW	40	86	
5	Bedford Cyn. Rd.	s/o El Cerrito Rd.	Residential	67.1	RW	52	112	
6	Bedford Cyn. Rd.	n/o Georgetown Dr.	Residential	66.8	RW	50	108	
7	Bedford Cyn. Rd.	n/o Eagle Glen Pkwy.	Residential	67.2	RW	53	115	
8	Temescal Cyn. Rd.	n/o Cajalco Rd.	General Commercial	68.9	RW	97	209	
9	Temescal Cyn. Rd.	s/o Cajalco Rd.	Agriculture	70.4	56	121	261	
10	California Av.	w/o Masters Dr.	General Commercial	65.2	RW	35	75	
11	California Av.	e/o Masters Dr.	General Commercial	66.4	RW	42	91	
12	El Cerrito Rd.	w/o Bedford Cyn. Rd.	General Industry	70.6	48	104	224	
13	El Cerrito Rd.	e/o Bedford Cyn. Rd.	Residential	70.8	49	107	230	
14	El Cerrito Rd.	e/o I-15 SB Ramps	Freeway	68.9	RW	80	172	
15	El Cerrito Rd.	e/o I-15 NB Ramps	Residential	66.6	RW	57	122	
16	Eagle Glen Pkwy.	e/o Masters Dr.	Residential	69.6	RW	89	191	
17	Eagle Glen Pkwy.	e/o Bedford Cyn. Rd.	Open Space	71.4	80	173	373	
18	Cajalco Rd.	e/o I-15 SB Ramps	General Commercial	70.7	73	157	337	
19	Cajalco Rd.	e/o I-15 NB Ramps	General Commercial	71.2	79	169	365	
20	Cajalco Rd.	e/o Grand Oaks	General Commercial	69.1	RW	122	263	
21	Cajalco Rd.	e/o Temescal Cyn. Rd.	General Commercial	69.4	RW	127	274	

<sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use.



			Adjacent	CNEL at Nearest	Distance to Contour from Centerline (Feet)		
ID	Road	Road Segment Planned (Existing) Land Use <sup>1</sup>		Adjacent Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Masters Dr.	n/o California Av.	Residential	64.8	RW	RW	71
2	Masters Dr.	s/o California Av.	Residential	67.8	RW	52	113
3	Masters Dr.	n/o Bennet Av.	Residential	66.6	RW	43	94
4	Masters Dr.	n/o Eagle Glen Pkwy.	Residential	66.3	RW	42	90
5	Bedford Cyn. Rd.	s/o El Cerrito Rd.	Residential	67.3	RW	54	117
6	Bedford Cyn. Rd.	n/o Georgetown Dr.	Residential	67.1	RW	52	112
7	Bedford Cyn. Rd.	n/o Eagle Glen Pkwy.	Residential	67.5	RW	56	120
8	Temescal Cyn. Rd.	n/o Cajalco Rd.	General Commercial	69.3	RW	102	220
9	Temescal Cyn. Rd.	s/o Cajalco Rd.	Agriculture	70.7	59	128	275
10	California Av.	w/o Masters Dr.	General Commercial	65.5	RW	37	79
11	California Av.	e/o Masters Dr.	General Commercial	66.8	RW	45	96
12	El Cerrito Rd.	w/o Bedford Cyn. Rd.	General Industry	70.9	51	109	235
13	El Cerrito Rd.	e/o Bedford Cyn. Rd.	Residential	71.1	52	112	242
14	El Cerrito Rd.	e/o I-15 SB Ramps	Freeway	69.2	RW	84	181
15	El Cerrito Rd.	e/o I-15 NB Ramps	Residential	67.0	RW	60	128
16	Eagle Glen Pkwy.	e/o Masters Dr.	Residential	69.8	RW	92	198
17	Eagle Glen Pkwy.	e/o Bedford Cyn. Rd.	Open Space	71.6	83	178	384
18	Cajalco Rd.	e/o I-15 SB Ramps	General Commercial	71.0	75	162	350
19	Cajalco Rd.	e/o I-15 NB Ramps	General Commercial	71.6	83	178	383
20	Cajalco Rd.	e/o Grand Oaks	General Commercial	69.4	RW	128	276
21	Cajalco Rd.	e/o Temescal Cyn. Rd.	General Commercial	69.7	RW	133	288

<sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use



			Adjacent	CNEL at Nearest		nce to Co enterline	
ID	Road	Road Segment Planned (Existing) Land Use <sup>1</sup>		Adjacent Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Masters Dr.	n/o California Av.	Residential	64.8	RW	RW	72
2	Masters Dr.	s/o California Av.	Residential	67.9	RW	53	114
3	Masters Dr.	n/o Bennet Av.	Residential	66.7	RW	44	95
4	Masters Dr.	n/o Eagle Glen Pkwy.	Residential	66.5	RW	43	92
5	Bedford Cyn. Rd.	s/o El Cerrito Rd.	Residential	67.5	RW	55	119
6	Bedford Cyn. Rd.	n/o Georgetown Dr.	Residential	67.2	RW	53	115
7	Bedford Cyn. Rd.	n/o Eagle Glen Pkwy.	Residential	67.6	7.6 RW		123
8	Temescal Cyn. Rd.	n/o Cajalco Rd.	General Commercial	69.3	RW	102	220
9	Temescal Cyn. Rd.	s/o Cajalco Rd.	Agriculture	70.7	59	128	275
10	California Av.	w/o Masters Dr.	General Commercial	65.5	RW	37	80
11	California Av.	e/o Masters Dr.	General Commercial	66.8	RW	45	96
12	El Cerrito Rd.	w/o Bedford Cyn. Rd.	General Industry	71.0	51	110	236
13	El Cerrito Rd.	e/o Bedford Cyn. Rd.	Residential	71.1	52	112	242
14	El Cerrito Rd.	e/o I-15 SB Ramps	Freeway	69.2	RW	84	182
15	El Cerrito Rd.	e/o I-15 NB Ramps	Residential	67.0	RW	60	129
16	Eagle Glen Pkwy.	e/o Masters Dr.	Residential	69.8	RW	92	199
17	Eagle Glen Pkwy.	e/o Bedford Cyn. Rd.	Open Space	71.7	85	183	395
18	Cajalco Rd.	e/o I-15 SB Ramps	General Commercial	71.1	77	166	357
19	Cajalco Rd.	e/o I-15 NB Ramps	General Commercial	71.6	83	179	385
20	Cajalco Rd.	e/o Grand Oaks	General Commercial	69.5	RW	129	278
21	Cajalco Rd.	e/o Temescal Cyn. Rd.	General Commercial	69.7	RW	134	289

<sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use



				Adjacent	CNEL at Nearest	Distance to Contour from Centerline (Feet)			
ID	Road	Segment	Planned (Existing) Land Use <sup>1</sup>	Adjacent Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL		
1	Masters Dr.	n/o California Av.	Residential	66.8	RW	45	97		
2	Masters Dr.	s/o California Av.	Residential	67.2	RW	48	103		
3	Masters Dr.	n/o Bennet Av.	Residential	65.9	RW	39	84		
4	Masters Dr.	n/o Eagle Glen Pkwy.	Residential	65.6	RW	38	81		
5	Bedford Cyn. Rd.	s/o El Cerrito Rd.	Residential	68.9	RW	69	149		
6	Bedford Cyn. Rd.	n/o Georgetown Dr.	Residential	68.9	RW	69	149		
7	Bedford Cyn. Rd.	n/o Eagle Glen Pkwy.	Residential	68.8	RW	68	147		
8	Temescal Cyn. Rd.	n/o Cajalco Rd.	General Commercial	71.2	63	136	294		
9	Temescal Cyn. Rd.	s/o Cajalco Rd.	Agriculture	70.1	54	117	251		
10	California Av.	w/o Masters Dr.	General Commercial	67.0	RW	46	99		
11	California Av.	e/o Masters Dr.	General Commercial	68.1	RW	55	118		
12	El Cerrito Rd.	w/o Bedford Cyn. Rd.	General Industry	71.2	53	114	246		
13	El Cerrito Rd.	e/o Bedford Cyn. Rd.	Residential	72.0	60	130	279		
14	El Cerrito Rd.	e/o I-15 SB Ramps	Freeway	70.9	51	109	235		
15	El Cerrito Rd.	e/o I-15 NB Ramps	Residential	68.9	RW	81	174		
16	Eagle Glen Pkwy.	e/o Masters Dr.	Residential	69.0	RW	81	174		
17	Eagle Glen Pkwy.	e/o Bedford Cyn. Rd.	Open Space	69.2	RW	125	268		
18	Cajalco Rd.	e/o I-15 SB Ramps	General Commercial	70.1	66	141	305		
19	Cajalco Rd.	e/o I-15 NB Ramps	General Commercial	71.0	75	163	350		
20	Cajalco Rd.	e/o Grand Oaks	General Commercial	68.9	RW	118	254		
21	Cajalco Rd.	e/o Temescal Cyn. Rd.	General Commercial	70.9	74	160	345		

#### TABLE 7-5: HORIZON YEAR 2035 WITHOUT PROJECT CONDITIONS NOISE CONTOURS

<sup>1</sup> Sources: City of Corona General Plan Atlas, January 2012, and the County of Riverside Temescal Canyon Area Land Use Plan.

<sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use



				Adjacent	CNEL at Nearest Adjacent	Distance to Contour from Centerline (Feet)		
ID	Road	Segment	nent Planned (Existing) Land Use <sup>1</sup>		70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	
1	Masters Dr.	n/o California Av.	Residential	67.0	RW	46	99	
2	Masters Dr.	s/o California Av.	Residential	67.7	RW	51	110	
3	Masters Dr.	n/o Bennet Av.	Residential	66.7	RW	44	94	
4	Masters Dr.	n/o Eagle Glen Pkwy.	Residential	66.6	RW	43	93	
5	Bedford Cyn. Rd.	s/o El Cerrito Rd.	Residential	69.4	RW	75	162	
6	Bedford Cyn. Rd.	n/o Georgetown Dr.	Residential	69.4	RW	75	162	
7	Bedford Cyn. Rd.	n/o Eagle Glen Pkwy.	Residential	69.4	RW	75	161	
8	Temescal Cyn. Rd.	n/o Cajalco Rd.	General Commercial	71.2	64	137	296	
9	Temescal Cyn. Rd.	s/o Cajalco Rd.	Agriculture	71.5	66	143	308	
10	California Av.	w/o Masters Dr.	General Commercial	67.1	RW	47	102	
11	California Av.	e/o Masters Dr.	General Commercial	68.3	RW	56	121	
12	El Cerrito Rd.	w/o Bedford Cyn. Rd.	General Industry	71.4	55	118	253	
13	El Cerrito Rd.	e/o Bedford Cyn. Rd.	Residential	72.1	61	131	283	
14	El Cerrito Rd.	e/o I-15 SB Ramps	Freeway	71.0	52	111	239	
15	El Cerrito Rd.	e/o I-15 NB Ramps	Residential	69.1	RW	83	178	
16	Eagle Glen Pkwy.	e/o Masters Dr.	Residential	70.5	47	102	219	
17	Eagle Glen Pkwy.	e/o Bedford Cyn. Rd.	Open Space	71.8	86	185	399	
18	Cajalco Rd.	e/o I-15 SB Ramps	General Commercial	71.5	82	176	379	
19	Cajalco Rd.	e/o I-15 NB Ramps	General Commercial	71.3	80	172	370	
20	Cajalco Rd.	e/o Grand Oaks	General Commercial	69.4	RW	127	274	
21	Cajalco Rd.	e/o Temescal Cyn. Rd.	General Commercial	71.0	76	164	354	

TABLE 7-6: HORIZON YEAR 2035 WITH PROJECT CONDITIONS NOISE CONTOURS

<sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use



# 7.2 EXISTING CONDITIONS PROJECT TRAFFIC NOISE LEVEL CONTRIBUTIONS

An analysis of existing traffic noise levels plus traffic noise generated by the proposed Project has been included in this report for informational purposes and to fully analyze all the traffic conditions identified in the *Bedford Marketplace Traffic Study* prepared by Urban Crossroads, Inc. This condition is provided solely for analytical purposes and will not occur, since the Project will not be fully developed and occupied under Existing conditions.

Table 7-1 presents the Existing without Project conditions CNEL noise levels. The without Project exterior noise levels are expected to range from 64.3 to 70.9 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-2 shows the Existing with Project conditions will range from 64.5 to 71.4 dBA CNEL. As shown on Table 7-7 the Project will generate a noise level increase of up to 2.6 dBA CNEL on the study area roadway segments.

## 7.3 INTERIM YEAR 2021 PROJECT TRAFFIC NOISE LEVEL CONTRIBUTIONS

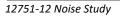
Table 7-3 presents the Interim Year 2021 without Project conditions CNEL noise levels which are expected to range from 64.8 to 71.6 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography.

Table 7-4 shows the Interim Year 2021 with Project conditions will range from 64.8 to 71.7 dBA CNEL. As shown on Table 7-8 the Project will generate a noise level increase of up to 0.2 dBA CNEL on the study area roadway segments. Based on the significance criteria in Section 4, the Project-related noise level increases are considered *less than significant* under Interim Year 2021 with Project conditions at the land uses adjacent to roadways conveying Project traffic.

## 7.4 HORIZON YEAR 2035 PROJECT TRAFFIC NOISE LEVEL CONTRIBUTIONS

Table 7-5 presents the Horizon Year 2035 without Project conditions CNEL noise levels are expected to range from 65.6 to 72.0 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography.

Table 7-6 shows the Horizon Year 2035 with Project conditions will range from 66.6 to 72.1 dBA CNEL. As shown on Table 7-9 the Project will generate a noise level increase of up to 2.6 dBA CNEL on the study area roadway segments. Based on the significance criteria in Section 4, the Project-related noise level increases are considered *less than significant* under Horizon Year 2035 with Project conditions at the land uses adjacent to roadways conveying Project traffic.





ID	Road Segment	Cognest	Adjacent	CNEL at Adjacent Land Use (dBA) <sup>1</sup>			Noise- Sensitive	Off-Site Traffic	Threshold
	Noau	Segment	Land Use	No Project	With Project	Project Addition	Land Use?	Noise Threshold <sup>2</sup>	Exceeded?
1	Masters Dr.	n/o California Av.	Residential	64.3	64.5	0.2	Yes	3.0	No
2	Masters Dr.	s/o California Av.	Residential	67.5	67.5	0.0	Yes	1.5	No
3	Masters Dr.	n/o Bennet Av.	Residential	65.6	66.3	0.7	Yes	1.5	No
4	Masters Dr.	n/o Eagle Glen Pkwy.	Residential	65.2	66.0	0.8	Yes	1.5	No
5	Bedford Cyn. Rd.	s/o El Cerrito Rd.	Residential	66.2	67.1	0.9	Yes	1.5	No
6	Bedford Cyn. Rd.	n/o Georgetown Dr.	Residential	66.8	66.8	0.0	Yes	1.5	No
7	Bedford Cyn. Rd.	n/o Eagle Glen Pkwy.	Residential	66.4	67.2	0.8	Yes	1.5	No
8	Temescal Cyn. Rd.	n/o Cajalco Rd.	General Commercial	68.8	68.9	0.1	No	n/a	No
9	Temescal Cyn. Rd.	s/o Cajalco Rd.	Agriculture	70.3	70.4	0.1	No	n/a	No
10	California Av.	w/o Masters Dr.	General Commercial	65.0	65.2	0.2	No	n/a	No
11	California Av.	e/o Masters Dr.	General Commercial	66.2	66.4	0.2	No	n/a	No
12	El Cerrito Rd.	w/o Bedford Cyn. Rd.	General Industry	70.4	70.6	0.2	No	n/a	No
13	El Cerrito Rd.	e/o Bedford Cyn. Rd.	Residential	70.7	70.8	0.1	Yes	1.5	No
14	El Cerrito Rd.	e/o I-15 SB Ramps	Freeway	68.7	68.9	0.2	No	n/a	No
15	El Cerrito Rd.	e/o I-15 NB Ramps	Residential	66.4	66.6	0.2	Yes	1.5	No
16	Eagle Glen Pkwy.	e/o Masters Dr.	Residential	67.7	69.6	1.9	Yes	1.5	Yes
17	Eagle Glen Pkwy.	e/o Bedford Cyn. Rd.	Open Space	68.8	71.4	2.6	No	n/a	No
18	Cajalco Rd.	e/o I-15 SB Ramps	General Commercial	69.2	70.7	1.5	No	n/a	No
19	Cajalco Rd.	e/o I-15 NB Ramps	General Commercial	70.9	71.2	0.3	No	n/a	No
20	Cajalco Rd.	e/o Grand Oaks	General Commercial	68.7	69.1	0.4	No	n/a	No
21	Cajalco Rd.	e/o Temescal Cyn. Rd.	General Commercial	69.1	69.4	0.3	No	n/a	No

#### TABLE 7-7: EXISTING OFF-SITE PROJECT-RELATED TRAFFIC NOISE IMPACTS

<sup>1</sup>The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use.

<sup>2</sup> Significance Criteria (Section 4). "n/a" not applicable, adjacent land use is not a noise sensitive.

ID	Road	Segment Adjacent		CNEL at Adjacent Land Use (dBA) <sup>1</sup>			Noise- Sensitive	Off-Site Traffic	Threshold
U	KOAU	Segment	Land Use	No Project	With Project	Project Addition	Land Use?	Noise Threshold <sup>2</sup>	Exceeded?
1	Masters Dr.	n/o California Av.	Residential	64.8	64.8	0.0	Yes	3.0	No
2	Masters Dr.	s/o California Av.	Residential	67.8	67.9	0.1	Yes	1.5	No
3	Masters Dr.	n/o Bennet Av.	Residential	66.6	66.7	0.1	Yes	1.5	No
4	Masters Dr.	n/o Eagle Glen Pkwy.	Residential	66.3	66.5	0.2	Yes	1.5	No
5	Bedford Cyn. Rd.	s/o El Cerrito Rd.	Residential	67.3	67.5	0.2	Yes	1.5	No
6	Bedford Cyn. Rd.	n/o Georgetown Dr.	Residential	67.1	67.2	0.1	Yes	1.5	No
7	Bedford Cyn. Rd.	n/o Eagle Glen Pkwy.	Residential	67.5	67.6	0.1	Yes	1.5	No
8	Temescal Cyn. Rd.	n/o Cajalco Rd.	General Commercial	69.3	69.3	0.0	No	n/a	No
9	Temescal Cyn. Rd.	s/o Cajalco Rd.	Agriculture	70.7	70.7	0.0	No	n/a	No
10	California Av.	w/o Masters Dr.	General Commercial	65.5	65.5	0.0	No	n/a	No
11	California Av.	e/o Masters Dr.	General Commercial	66.8	66.8	0.0	No	n/a	No
12	El Cerrito Rd.	w/o Bedford Cyn. Rd.	General Industry	70.9	71.0	0.1	No	n/a	No
13	El Cerrito Rd.	e/o Bedford Cyn. Rd.	Residential	71.1	71.1	0.0	Yes	1.5	No
14	El Cerrito Rd.	e/o I-15 SB Ramps	Freeway	69.2	69.2	0.0	No	n/a	No
15	El Cerrito Rd.	e/o I-15 NB Ramps	Residential	67.0	67.0	0.0	Yes	1.5	No
16	Eagle Glen Pkwy.	e/o Masters Dr.	Residential	69.8	69.8	0.0	Yes	1.5	No
17	Eagle Glen Pkwy.	e/o Bedford Cyn. Rd.	Open Space	71.6	71.7	0.1	No	n/a	No
18	Cajalco Rd.	e/o I-15 SB Ramps	General Commercial	71.0	71.1	0.1	No	n/a	No
19	Cajalco Rd.	e/o I-15 NB Ramps	General Commercial	71.6	71.6	0.0	No	n/a	No
20	Cajalco Rd.	e/o Grand Oaks	General Commercial	69.4	69.5	0.1	No	n/a	No
21	Cajalco Rd.	e/o Temescal Cyn. Rd.	General Commercial	69.7	69.7	0.0	No	n/a	No

### TABLE 7-8: INTERIM YEAR 2021 OFF-SITE PROJECT-RELATED TRAFFIC NOISE IMPACTS

<sup>1</sup>The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use.

<sup>2</sup> Significance Criteria (Section 4). "n/a" not applicable, adjacent land use is not a noise sensitive.

ID	Pood	Road Segment		Adjacent	CNEL at Adjacent Land Use (dBA) <sup>1</sup>			Noise- Sensitive	Off-Site Traffic	Threshold
U	KOAU	Segment	Land Use	No Project	With Project	Project Addition	Land Use?	Noise Threshold <sup>2</sup>	Exceeded?	
1	Masters Dr.	n/o California Av.	Residential	66.8	67.0	0.2	Yes	1.5	No	
2	Masters Dr.	s/o California Av.	Residential	67.2	67.7	0.5	Yes	1.5	No	
3	Masters Dr.	n/o Bennet Av.	Residential	65.9	66.7	0.8	Yes	1.5	No	
4	Masters Dr.	n/o Eagle Glen Pkwy.	Residential	65.6	66.6	1.0	Yes	1.5	No	
5	Bedford Cyn. Rd.	s/o El Cerrito Rd.	Residential	68.9	69.4	0.5	Yes	1.5	No	
6	Bedford Cyn. Rd.	n/o Georgetown Dr.	Residential	68.9	69.4	0.5	Yes	1.5	No	
7	Bedford Cyn. Rd.	n/o Eagle Glen Pkwy.	Residential	68.8	69.4	0.6	Yes	1.5	No	
8	Temescal Cyn. Rd.	n/o Cajalco Rd.	General Commercial	71.2	71.2	0.0	No	n/a	No	
9	Temescal Cyn. Rd.	s/o Cajalco Rd.	Agriculture	70.1	71.5	1.4	No	n/a	No	
10	California Av.	w/o Masters Dr.	General Commercial	67.0	67.1	0.1	No	n/a	No	
11	California Av.	e/o Masters Dr.	General Commercial	68.1	68.3	0.2	No	n/a	No	
12	El Cerrito Rd.	w/o Bedford Cyn. Rd.	General Industry	71.2	71.4	0.2	No	n/a	No	
13	El Cerrito Rd.	e/o Bedford Cyn. Rd.	Residential	72.0	72.1	0.1	Yes	1.5	No	
14	El Cerrito Rd.	e/o I-15 SB Ramps	Freeway	70.9	71.0	0.1	No	n/a	No	
15	El Cerrito Rd.	e/o I-15 NB Ramps	Residential	68.9	69.1	0.2	Yes	1.5	No	
16	Eagle Glen Pkwy.	e/o Masters Dr.	Residential	69.0	70.5	1.5	Yes	1.5	No	
17	Eagle Glen Pkwy.	e/o Bedford Cyn. Rd.	Open Space	69.2	71.8	2.6	No	n/a	No	
18	Cajalco Rd.	e/o I-15 SB Ramps	General Commercial	70.1	71.5	1.4	No	n/a	No	
19	Cajalco Rd.	e/o I-15 NB Ramps	General Commercial	71.0	71.3	0.3	No	n/a	No	
20	Cajalco Rd.	e/o Grand Oaks	General Commercial	68.9	69.4	0.5	No	n/a	No	
21	Cajalco Rd.	e/o Temescal Cyn. Rd.	General Commercial	70.9	71.0	0.1	No	n/a	No	

### TABLE 7-9: HORIZON YEAR 2035 OFF-SITE PROJECT-RELATED TRAFFIC NOISE IMPACTS

<sup>1</sup>The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use.

<sup>2</sup> Significance Criteria (Section 4). "n/a" not applicable, adjacent land use is not noise sensitive.



# 7.5 SOIL IMPORT/EXPORT HAUL TRUCK OFF-SITE TRAFFIC ANALYSIS

To bring the Modified Bedford Marketplace Project Site up to an elevation similar (within five feet) of the existing 10-acre commercial pad, import of approximately 440,000 cubic yards of dirt is required. The import operation is expected to include 250 full loads per night, assuming 15 cubic yards per load, for a total of 3,750 cubic yards per night. To import 440,000 cubic yards, approximately 118 nights of import would be required.

The Project proposes to import dirt during the hours (8:00 p.m. to 4:00 a.m.) and complete grading operations both during daytime and nighttime hours. A source of import has been identified from the FST Sand and Gravel Mine, located east of the I-15 Freeway as shown on Exhibit 7-A. The dirt would be hauled from the borrow site on Minnesota Road to Sherborn Street to Magnolia Avenue to the I-15 Freeway southbound on ramp at Magnolia Avenue, exit at Cajalco Road and enter the Modified Project Site by crossing Cajalco Road from the southbound off-ramp with traffic control. Trucks would return onto Cajalco Road, enter I-15 Freeway northbound to Magnolia Avenue to Sherborn Street and travel south to the borrow site.

The proposed soil import/export haul route was specially developed to avoid potentially significant impacts to potential noise sensitive residential land uses. A review of the haul route shows that the only adjacent noise sensitive residential land uses are located adjacent to the I-15 Freeway. Many of these noise sensitive residential land uses benefit from existing sound walls that have been developed to control traffic noise from the I-15 Freeway.

The following analysis describes the potential off-site Project haul trips traffic noise impacts if all truck haul trips occur during the evening and nighttime hours from 8:00 pm to 4:00 am. This analysis describes the Project's incremental traffic-related noise impacts at land uses adjacent to roadways conveying Project traffic. The predicted future exterior noise levels (included in Appendix 7.2) represent the distance from the center of the roadway to the nearest noise receiver locations. Table 7-10 presents the Existing without Project off-site traffic CNEL noise levels which are expected to range from 58.4 to 71.1 dBA CNEL. Table 7-10 shows that the With Project Haul Truck Trips off-site traffic noise conditions will range from 63.8 to 72.8 dBA CNEL.

As shown on Table 7-10, the Project haul truck trips will generate a noise level increase ranging from 0.2 dBA CNEL on the I-15 Freeway to 5.4 dBA CNEL on Sherborn Street. Based on the significance criteria outlined above, the Project soil import/export truck trip-related noise level increases are considered *less than significant* impacts at the land uses adjacent to roadways conveying Project haul truck traffic.





EXHIBIT 7-A: SOIL IMPORT/EXPORT HAUL TRUCK ROUTE



TABLE 7-10: EXISTING OFF-SITE PROJECT-RELATED TRAFFIC NOISE IMPACTS										
ID	Deed	Location	Adjacent	CNEL at Adjacent Land Use (dBA) <sup>1</sup>			Noise- Sensitive	Off-Site Traffic	Threshold	
	Road		Land Use	No Haul	With Haul	Haul Addition	Land Use?	Noise Threshold <sup>2</sup>	Exceeded?	
1	I-15 Freeway	20225 Bedford Canyon Rd.	Residential	69.8	70.0	0.2	Yes	1.5	No	
2	Magnolia Ave.	1295 Magnolia Ave.	Commercial	71.1	72.8	1.7	No	n/a	No	
3	Sherborn St.	1168 Sherborn St.	Commercial/Industrial	58.4	63.8	5.4	No	n/a	No	

### TABLE 7-10: EXISTING OFF-SITE PROJECT-RELATED TRAFFIC NOISE IMPACTS

<sup>1</sup>The CNEL is calculated at the nearest representative receiver of the nearest adjacent land use.

<sup>2</sup> Significance Criteria (Section 4). "n/a" not applicable, adjacent land use is not a noise sensitive.

# 8 ON-SITE NOISE IMPACTS

An on-site exterior noise impact analysis has been completed to determine the noise exposure levels that would result from adjacent traffic noise sources in the Project study area, and to identify potential noise mitigation measures that would achieve acceptable Project exterior and interior noise levels. The primary source of traffic noise affecting the Project site is anticipated to be from the I-15 Freeway. The Project will also experience some background traffic noise impacts from its internal streets and parking lots, however, due to the low traffic volume and low speeds of vehicles travelling on these roadways, traffic noise will not make a significant contribution to the noise environment beyond of the right-of-way of each road.

## 8.1 EXTERIOR NOISE ANALYSIS

Using the FHWA traffic noise prediction model and the parameters outlined in Section 6, the expected future exterior noise levels for the noise sensitive on-site building were calculated. For noise-sensitive uses, Table 5 *Interior and Exterior Noise Standards* of the Public Health and Safety Element indicates that the exterior noise levels shall not exceed 65 dBA CNEL for the planned hotel use.

## 8.1.1 OUTDOOR COMMON AREAS

The 65 dBA CNEL exterior noise standards typically apply to outdoor areas where people congregate. In relation to the proposed Bedford Marketplace, the 65 dBA CNEL exterior noise standards apply only to the hotel outdoor pool area. The City of Corona does not identify any exterior noise standards for any of the commercial land use activities such as the outdoor patio areas for proposed restaurant uses.

Table 8-1 presents a summary of future exterior noise level impacts at the outdoor pool area of the hotel use. To minimize the potential exterior noise level impacts, the outdoor pool area is located behind the 4-story hotel building that effectively blocks the noise sensitive area from the I-15 Freeway. The on-site traffic noise level impacts indicate that outdoor pool area will experience unmitigated exterior noise levels of 52.3 dBA CNEL. Since the unmitigated on-site traffic noise levels satisfy the City of Corona 65 dBA CNEL exterior noise level standards, the on-site exterior traffic noise levels are considered *less than significant* impacts.

Outdoor Common Area		Roadway	Exterior Noise Level (dBA CNEL) <sup>1</sup>	Threshold (dBA CNEL) <sup>2</sup>	Threshold Exceeded?
Hotel Pool	1	I-15 Freeway	52.3	65	No

<sup>1</sup> Unmitigated exterior noise level within the hotel outdoor pool area.

<sup>2</sup> Source: Public Health & Safety Element Interior and Exterior Noise Standards (Exhibit 3-B).



## 8.1.2 BUILDING FACADE

Table 8-2 presents a summary of future exterior noise levels at the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup>-floor hotel building facades. Exterior noise levels at the building façade are presented to estimate the interior noise levels. The on-site transportation analysis indicates that the unmitigated exterior noise levels will range from 66.3 to 71.5 dBA CNEL at the hotel building façades. The on-site traffic noise analysis calculations at are provided in Appendix 8.1.

		Exterior Noise Level at Façade (dBA CNEL)					
Receiver Location	Roadway	1st Floor	2nd Floor	3rd Floor	4th Floor		
Hotel	I-15 Fwy.	66.3	71.5	71.4	71.4		

## TABLE 8-2: EXTERIOR TRAFFIC NOISE LEVELS AT THE BUILDING FACADE

## 8.2 INTERIOR NOISE ANALYSIS

To ensure that the interior noise levels comply with the City of Corona interior noise level standards, future noise levels were calculated at the estimated building façade locations. For noise-sensitive uses, Table 5 *Interior and Exterior Noise Standards* of the Public Health and Safety Element indicates that Interior noise levels shall not exceed 45 dBA CNEL for hotel uses and 55 dBA CNEL for all other commercial uses consistent with the General Plan Public Health and Safety Element interior and exterior noise standards (See Exhibit 3-B).

## 8.2.1 NOISE REDUCTION METHODOLOGY

The interior noise level is the difference between the predicted exterior noise level at the building facade and the noise reduction of the structure. Typical building construction will provide a Noise Reduction (NR) of approximately 25 dBA noise reduction with "windows closed." (19; 20) However, sound leaks, cracks and openings within the window assembly can greatly diminish its effectiveness in reducing noise. Several methods are used to improve interior noise reduction, including: (1) weather-stripped solid core exterior doors; (2) upgraded dual glazed windows; (3) mechanical ventilation/air conditioning; and (4) exterior wall/roof assembles free of cut outs or openings.

## 8.2.2 INTERIOR NOISE LEVEL ASSESSMENT

Table 8-2 shows that the Project buildings will require a windows-closed condition and a means of mechanical ventilation (e.g. air conditioning). Table 8-2 shows that the future exterior noise levels at the hotel building façades are expected to range from 66.3 to 71.5 dBA CNEL. The interior noise level analysis shows that the City of Corona 55 dBA CNEL interior noise standards can be satisfied using typical building construction for all commercial buildings. The interior noise analysis for the noise sensitive hotel use shows that the City of Corona 45 dBA CNEL interior noise standards can be satisfied using typical building construction with a minimum STC ratings of 30



for windows facing the I-15 Freeway. With the STC ratings of 30 for windows facing the I-15 Freeway, the future on-site interior traffic noise impacts will be *less than significant*.

Receiver Location	Floor	Noise Level at Façade <sup>1</sup>	Required Interior NR <sup>2</sup>	Minimum Interior NR <sup>3</sup>	Upgraded Windows⁴	Interior Noise Level⁵	Threshold	Threshold Exceeded?
	1	66.3	21.3	30.0	Yes	36.3	45	No
Hotel	2	71.5	26.5	30.0	Yes	41.5	45	No
потег	3	71.4	26.4	30.0	Yes	41.4	45	No
	4	71.4	26.4	30.0	Yes	41.4	45	No

#### TABLE 8-3: INTERIOR NOISE LEVELS (CNEL)

<sup>1</sup> Exterior noise level at the facade with a windows closed condition requiring a means of mechanical ventilation (e.g. air conditioning).

<sup>2</sup> Noise reduction required to satisfy the City of Corona 45 dBA CNEL interior noise standard for noise sensitive uses.

<sup>3</sup> Estimated interior noise reduction with upgraded windows with an STC rating of 30.

<sup>4</sup> Does the required interior noise reduction trigger upgraded windows with a minimum STC rating of 30?

 $^{\rm 5}$  Estimated interior noise level with STC rating of for all windows facing the I-15 Freeway.

"NR" = Noise Reduction



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# 9 **RECEIVER LOCATIONS**

To assess the potential for long-term operational and short-term construction noise impacts, the following sensitive receiver locations, as shown on Exhibit 9-A, were identified as representative locations for analysis. Consistent with CEQA Guidelines Section 15125, the noise sensitive locations described below represent only those locations *as they exist at the time the notice of preparation (NOP) is published.* The Bedford Marketplace NOP was published on October 28, 2019 prior to the development and occupancy of the future residential community (Tentative Tract Map No. 37644) located west of Bedford Canyon Road. Therefore, no receivers have been identified for the planned Tentative Tract Map No. 37644 since the Bedford Marketplace will likely be developed prior to occupancy of the nearby residential community. However, noise sensitive receivers have been identified for existing Bedford South Corona community (Tentative Tract Map No. 37030).

Sensitive receivers are generally defined as locations where people reside or where the presence of unwanted sound could otherwise adversely affect the use of the land. Noise-sensitive land uses are generally considered to include schools, hospitals, single-family dwellings, mobile home parks, churches, libraries, and recreation areas. Moderately noise-sensitive land uses typically include multi-family dwellings, hotels, motels, dormitories, out-patient clinics, cemeteries, golf courses, country clubs, athletic/tennis clubs, and equestrian clubs. Land uses that are considered relatively insensitive to noise include business, commercial, and professional developments. Land uses that are typically not affected by noise include: industrial, manufacturing, utilities, agriculture, undeveloped land, parking lots, warehousing, liquid and solid waste facilities, salvage yards, and transit terminals.

Receiver locations are located in outdoor living areas (e.g., backyards) at 10 feet from any existing or proposed barriers or at the building façade, whichever is closer to the Project site, based on FHWA guidance, and consistent with additional guidance provided by Caltrans and the FTA, as previously described in Section 5.2. Sensitive receiver locations in the Project study area include residential uses and a church, as described below. Other sensitive land uses in the Project study area that are located at greater distances than those identified in this noise study will experience lower noise levels than those presented in this report due to the additional attenuation from distance and the shielding of intervening structures.

- R1: Located approximately 285 feet northwest of the Project site, R1 represents existing residential homes north of Eagle Glen Parkway. A 24-hour noise measurement was taken near this location, L1, to describe the existing ambient noise environment.
- R2: Location R2 represents the existing residential homes located west of the Project site at roughly 1,343 feet, on the west side of Glen Eagle Parkway. A 24-hour noise measurement was taken near this location, L1, to describe the existing ambient noise environment.
- R3: Location R3 represents the existing residential homes on the east side of North Weirick Road at approximately 1,276 feet from the Project site. A 24-hour noise measurement near this location, L3, is used to describe the existing ambient noise environment.



- R4: Location R4 represents the existing residential homes on the south side of Glen Road at approximately 1,137 feet from the Project site. A 24-hour noise measurement near this location, L4, is used to describe the existing ambient noise environment.
- R5: Location R5 represents the Hudson House outdoor community center recreation area for the Bedford South Corona community located approximately 1,502 feet from the Project site. A 24-hour noise measurement near this location, L2, is used to describe the existing ambient noise environment.





#### **EXHIBIT 9-A: SENSITIVE RECEIVER LOCATIONS**



Receiver Locations

**6'** Existing Barrier Height (in feet)

- Distance from receiver to Project site boundary (in feet) - Existing Barrier



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# **10 OPERATIONAL IMPACTS**

This section analyzes the potential operational noise impacts due to the Project's stationary noise sources on the off-site sensitive receiver locations identified in Section 9. Exhibit 10-A identifies the noise source locations used to assess the Project-related operational noise levels.

## **10.1** REFERENCE NOISE LEVELS

To estimate the Project operational noise impacts, reference noise level measurements were collected from similar types of activities to represent the noise levels expected with the development of the proposed Project. This section provides a detailed description of the reference noise level measurements shown on Table 10-1 used to estimate the Project operational noise impacts.

It is important to note that the following projected noise levels assume the worst-case noise environment with the roof-top air conditioning units, drive-thru speakerphones, trash enclosures, parking lots, gas station activity, car wash tunnel, car wash vacuums, and outdoor playground activity all operating simultaneously. These noise level impacts will vary throughout the day. All noise sources were modeled assuming peak operational activity with no periods of inactivity, and are assumed to operate simultaneously, to present a conservative analysis.

Noise Source	Measurement	Distance From	Noise Source	Reference Noise Levels (dBA L₅o)		
Noise Source	Duration (hh:mm:ss)	Source (Feet)	Height (Feet)	@ Ref. Dist.	@ 50 Feet	
Roof-Top Air Conditioning Units <sup>1</sup>	96:00:00	5'	5'	74.4	54.4	
Drive-Through Speakerphone <sup>2</sup>	00:03:00	15'	3'	60.9	50.4	
Trash Enclosure Activity <sup>3</sup>	00:00:32	5'	5'	69.0	49.0	
Commercial Parking Lot <sup>4</sup>	00:15:00	5'	5'	56.7	36.7	
Gas Station Activities <sup>5</sup>	01:00:00	5'	5'	65.6	45.6	
Car Wash Tunnel <sup>6</sup>	00:03:04	10'	8'	81.6	67.6	
Car Wash Vacuum <sup>7</sup>	00:01:02	5'	3'	74.2	54.2	
Outdoor Playground <sup>8</sup>	00:15:00	5'	5'	61.7	41.7	

 TABLE 10-1:
 REFERENCE NOISE LEVEL MEASUREMENTS

<sup>1</sup>As measured by Urban Crossroads, Inc. on 7/27/2015 at the Santee Walmart located at 170 Town Center Parkway.

<sup>2</sup> As measured by Urban Crossroads, Inc. on 12/19/2014 at a Panera Bread drive-thru in the City of Brea.

<sup>3</sup> As measured by Urban Crossroads, Inc. on 5/3/2018 at trash enclosure in a parking lot in the City of Costa Mesa.

<sup>4</sup>As measured by Urban Crossroads, Inc. on 5/30/2012 at the Laguna Niguel Walmart located at 27470 Alicia Parkway.

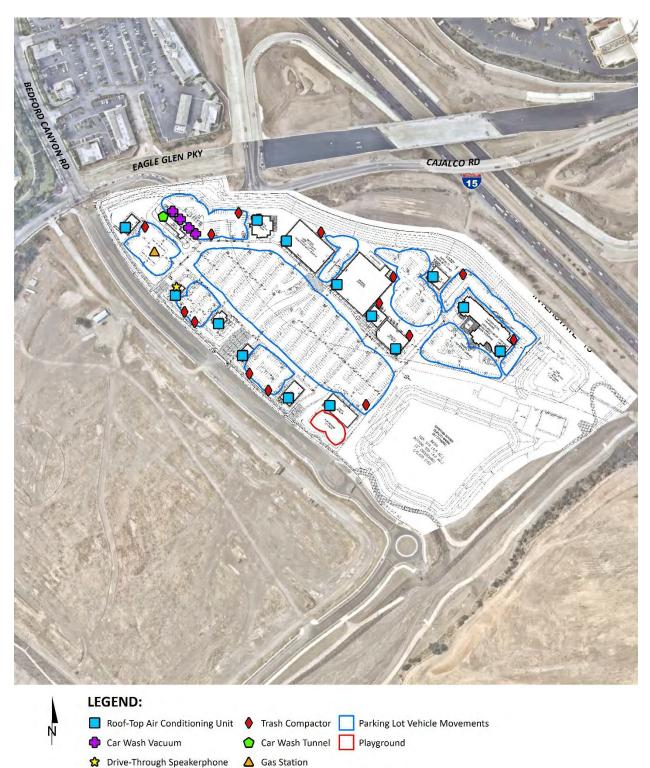
<sup>5</sup> As measured by Urban Crossroads, Inc. on 4/26/2016 at an ARCO gas station located at 6501 Quail Hill Parkway in the City of Irvine.

<sup>6</sup>As measured by Urban Crossroads, Inc. on 6/6/2016 at the Audi Mission Viejo Dealership located at 28451 Marguerite Parkway.

<sup>7</sup>As measured by Urban Crossroads, Inc. on 5/27/2011 at an express car wash located at 1195 Baker Street in Costa Mesa.

8 As measured by Urban Crossroads, Inc. on 10/8/2014 at an outdoor playground in Ladera Ranch.





**EXHIBIT 10-A: OPERATIONAL NOISE SOURCE LOCATIONS** 



## 10.1.1 ROOF-TOP AIR CONDITIONING UNITS

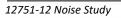
To assess the noise levels created by the roof-top air conditioning units at the Project site, reference noise levels measurements were taken at the Santee Walmart on July 27<sup>th</sup>, 2015. Located at 170 Town Center Parkway in the City of Santee, the noise level measurements describe a single mechanical roof-top air conditioning unit on the roof of an existing Walmart store with additional background units. The reference noise level represents a Lennox SCA120 series 10-ton model packaged air conditioning unit in addition to background units operating simultaneously. Using a uniform reference distance of 50 feet, the reference noise level measurement reflect peak summer cooling requirements with measured temperatures approaching 96 degrees Fahrenheit (°F) with average daytime temperatures of 82°F. The noise attenuation provided by a parapet wall is not reflected in this reference noise level measurement.

## **10.1.2 DRIVE-THROUGH SPEAKERPHONE**

To describe the potential noise level impacts associated with potential drive-through speakerphones and vehicle activities, a reference noise level measurement was collected on Friday, December 19<sup>th</sup>, 2014 at a Panera Bread restaurant located at 423 South Associated Road in the City of Brea. The reference noise levels collected at the Panera Bread restaurant are expected to reflect potential drive-through speakerphone noise level activities at the Project site, since the reference measurement includes both drive-through speakerphone and vehicle activity noise. The noise sources included in the reference noise level measurement consist of voices of the Panera Bread employees over the speakerphone, customers' voices ordering food, car engines idling, car radios playing music, and cars queuing in the drive-through lane. At 50 feet from the speakerphone, a reference noise level of 50.4 dBA L<sub>50</sub> was measured. This reference noise level measurement overstates the actual average noise levels since it represents the average of 28 speakerphone menu board ordering events observed over a two-hour period. In other words, the Panera Bread speakerphone menu board reference noise level describes continuous drive-through operations and does not include any periods of inactivity.

## 10.1.3 TRASH ENCLOSURE ACTIVITY

To describe the noise levels associated with a trash enclosure, Urban Crossroads collected a reference noise level measurement on May  $3^{rd}$ , 2018 at an existing commercial and office park trash enclosure within a parking lot on the northeast corner of Baker Street and Red Hill Avenue. The measured reference noise level at the uniform 50-foot reference distance is 49.0 dBA L<sub>50</sub> for the trash enclosure activity. The trash enclosure activity noise levels include two metal gates opening and closing, metal scraping against concrete floor sounds, dumpster movement on metal wheels, trash dropping into the metal dumpster, and background parking lot vehicle movements.





## **10.1.4 COMMERCIAL PARKING LOT**

To determine the noise levels associated with commercial parking lot vehicle movements, Urban Crossroads collected reference noise level measurements at the Laguna Niguel Walmart located at 27470 Alicia Parkway on May 30, 2012. The 15-minute noise level measurement indicates that the parking lot vehicle movements generates noise levels of 36.7 dBA L<sub>50</sub> at a normalized distance of 50 feet. The parking lot noise levels are mainly due to cars pulling in and out of spaces, car alarms sounding, and customers moving shopping carts.

## **10.1.5 GAS STATION ACTIVITIES**

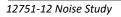
To describe the potential noise level impacts created by the gas station of the Project, a reference noise level measurement was collected on Tuesday, April 26<sup>th</sup>, 2016 at an ARCO gas station located at 6501 Quail Hill Parkway in the City of Irvine. The reference noise level measurement includes six cars fueling at once, car doors closing, engines starting, fuel pump TV sounds and background car pass-by events within a 3-minute period. At 50 feet from the gas station, a reference noise level of 45.6 dBA L<sub>50</sub> was measured.

## 10.1.6 CAR WASH TUNNEL AIR BLOWERS

On June 10<sup>th</sup>, 2016, a reference noise level measurement was taken by Urban Crossroads at the Audi Mission Viejo dealership to describe the air blowers used in a car wash tunnel. A reference noise level of 67.6 dBA L<sub>50</sub> was measured at the uniform distance of 50 feet. The reference noise level measurement includes an exposed five-unit air blower system with background pressure washer noise and is used to represent the proposed Project facilities. It is anticipated that the air dryers within the proposed car wash will operate continuously during the peak operating conditions. Further, this noise analysis does not include any additional attenuation or directional influence provided by locating the car wash air blower and dryer equipment inside the tunnel itself, but rather, models the tunnel exit activities as occurring at the building façade. As such, the analysis may conservatively overstate actual noise levels produced by the car wash tunnel air blower and dryer equipment.

## 10.1.7 CAR WASH VACUUM ACTIVITY

To represent the self-serve vacuums within the Project site, a reference noise level measurement was collected on May 27<sup>th</sup>, 2011 at an express car wash located at 1195 Baker Street in the City of Costa Mesa. The reference noise level measurement represents up to four vacuums operating simultaneously at the Costa Mesa express car wash. At a uniform reference distance of 50 feet, the vacuum reference noise level is 54.2 dBA L<sub>50</sub>. This reference car wash vacuum activity noise level is anticipated to conservatively overstate those of the Project, since this reference noise level includes more vacuums operating simultaneously (4 vacuums) than what will be possible at the Project site (2 vacuums).





# **10.1.8 OUTDOOR PLAYGROUND ACTIVITIES**

To describe the potential noise level impacts associated with the Project's playground activities ("tot-lot" and turf play areas), a reference noise level measurement was collected on Wednesday, October 8<sup>th</sup>, 2014 at the Founders Park in the City of Ladera Ranch. The reference noise levels collected at the Founders Park are expected to reflect the noise level activities at the tot-lot and turf play areas within Project site, since the reference noise level measurement includes tot-lot activities, girls youth soccer, coaches shouting instructions, parents speaking on cell phones, kids playing on swing sets, cheering and clapping. At a uniform reference distance of 50 feet, the outdoor playground activity reference noise level is 41.7 dBA L<sub>50</sub>.

# **10.2 PROJECT OPERATIONAL NOISE LEVELS**

Based upon the reference noise levels, it is possible to estimate the Project operational stationary-source noise levels at each of the sensitive receiver locations. The operational noise level calculations shown on Table 10-2 account for the distance attenuation provided due to geometric spreading, when sound from a localized stationary source (i.e., a point source) propagates uniformly outward in a spherical pattern. Hard site conditions are used in the operational noise analysis which result in noise levels that attenuate (or decrease) at a rate of 6 dBA for each doubling of distance from a point source. The basic noise attenuation equation shown below is used to calculate the distance attenuation based on a reference noise level (SPL<sub>1</sub>):

$$SPL_2 = SPL_1 - 20log(D_2/D_1)$$

Where  $SPL_2$  is the resulting noise level after attenuation,  $SPL_1$  is the source noise level,  $D_2$  is the distance to the reference sound pressure level ( $SPL_1$ ), and  $D_1$  is the distance to the receiver location.

Table 10-2 indicates that the unmitigated combined Project operational noise levels associated with the roof-top air conditioning units, drive-thru speakerphones, trash enclosures, parking lots, gas station activity, car wash tunnel, car wash vacuums, and outdoor playground activity are expected to range from 32.7 to 40.0 dBA  $L_{50}$  at the noise-sensitive off-site receiver locations. The unmitigated operational noise level calculation worksheets are included in Appendix 10.1.



Receiver	Noise	Distance (Feet)	<b>Operational Noise Levels (dBA)</b> <sup>3</sup>					
Location <sup>1</sup>	Sources <sup>2</sup>		L₅₀ (30 mins)	L <sub>25</sub> (15 mins)	L₃ (5 mins)	L₂ (1 min)	L <sub>max</sub> (Anytime)	
	Air Conditioning Unit (Roof-Top)	445'	28.5	30.2	31.5	31.8	32.3	
	Drive-Through Speakerphone	741'	20.3	21.5	23.0	24.7	25.8	
	Trash Enclosure	517'	16.6	22.6	29.6	34.6	36.1	
	Parking Lot	574'	8.5	12.5	15.5	18.9	31.3	
R1	Gas Station Activity	591'	17.1	18.4	21.0	25.9	33.9	
	Car Wash Tunnel	575'	39.4	49.8	50.4	51.1	51.6	
	Car Wash Vacuum Activity	608'	25.6	26.8	28.6	29.4	30.2	
	Outdoor Playground	741'	11.5	13.9	16.8	19.5	23.7	
	Combined N	oise Level:	40.0	49.9	50.5	51.3	51.9	
	Air Conditioning Unit (Roof-Top)	1,815'	23.2	24.9	26.2	26.5	27.0	
	Drive-Through Speakerphone	2,777'	15.6	16.8	18.3	20.0	21.1	
	Trash Enclosure	1,910'	12.6	18.6	25.6	30.6	32.1	
	Parking Lot	1,775'	5.7	9.7	12.7	16.1	28.5	
R2	Gas Station Activity	2,940'	10.2	11.5	14.1	19.0	27.0	
	Car Wash Tunnel	3,108'	31.8	42.2	42.8	43.5	44.0	
	Car Wash Vacuum Activity	2,878'	19.0	20.2	22.0	22.8	23.6	
	Outdoor Playground	1,877'	10.2	12.6	15.5	18.2	22.4	
	Combined N	oise Level:	32.7	42.3	43.0	43.9	44.6	
	Air Conditioning Unit (Roof-Top)	1,896'	22.8	24.5	25.8	26.1	26.6	
	Drive-Through Speakerphone	2,604'	16.1	17.3	18.8	20.5	21.6	
	Trash Enclosure	1,847'	12.9	18.9	25.9	30.9	32.4	
	Parking Lot	1,834'	5.4	9.4	12.4	15.8	28.2	
R3	Gas Station Activity	2,772'	10.7	12.0	14.6	19.5	27.5	
	Car Wash Tunnel	2,876'	32.4	42.8	43.4	44.1	44.6	
	Car Wash Vacuum Activity	2,752'	19.4	20.6	22.4	23.2	24.0	
	Outdoor Playground	1,743'	10.9	13.3	16.2	18.9	23.1	
	Combined No	oise Level:	33.2	42.9	43.6	44.5	45.2	

TABLE 10-2: UNMITIGATED PROJECT OPERATIONAL NOISE LEVELS



Receiver	Noise	Distance	Operational Noise Levels (dBA) <sup>3</sup>					
Location <sup>1</sup>	Sources <sup>2</sup>	(Feet)	L <sub>50</sub> (30 mins)	L <sub>25</sub> (15 mins)	L₃ (5 mins)	L₂ (1 min)	L <sub>max</sub> (Anytime)	
	Air Conditioning Unit (Roof-Top)	1,230'	20.3	22.0	23.3	23.6	24.1	
	Drive-Through Speakerphone	1,244'	16.0	17.2	18.7	20.4	21.5	
	Trash Enclosure	1,251'	9.7	15.7	22.7	27.7	29.2	
	Parking Lot	1,148'	2.8	6.8	9.8	13.2	25.6	
R4	Gas Station Activity	1,208'	11.4	12.7	15.3	20.2	28.2	
	Car Wash Tunnel	1,303'	32.9	43.3	43.9	44.6	45.1	
	Car Wash Vacuum Activity	1,358'	19.2	20.4	22.2	23.0	23.8	
	Outdoor Playground	1,744'	4.6	7.0	9.9	12.6	16.8	
	Combined N	33.4	43.4	44.0	44.8	45.4		
	Air Conditioning Unit (Roof-Top)	1,637'	24.1	25.8	27.1	27.4	27.9	
	Drive-Through Speakerphone	1,961'	18.6	19.8	21.3	23.0	24.1	
	Trash Enclosure	1,635'	13.9	19.9	26.9	31.9	33.4	
	Parking Lot	1,647'	6.3	10.3	13.3	16.7	29.1	
R5	Gas Station Activity	2,096'	13.2	14.5	17.1	22.0	30.0	
	Car Wash Tunnel	2,239'	34.6	45.0	45.6	46.3	46.8	
	Car Wash Vacuum Activity	2,181'	21.4	22.6	24.4	25.2	26.0	
	Outdoor Playground	1,561'	11.8	14.2	17.1	19.8	24.0	
	Combined N	oise Level:	35.3	45.1	45.8	46.6	47.3	

<sup>1</sup> See Exhibit 10-A for the noise source locations.

 $^{\rm 2}$  Reference noise sources as shown on Table 10-1.

<sup>3</sup> Stationary source noise level calculations are provided in Appendix 10.1.

# **10.3 PROJECT OPERATIONAL NOISE LEVEL COMPLIANCE**

Table 10-3 indicates that the noise levels associated with Project operational noise sources are expected to range from 32.7 to 40.0 dBA  $L_{50}$  at sensitive off-site sensitive receiver locations. Table 10-3 shows that the Project operational-source noise levels at potentially affected receivers satisfy the City of Corona daytime and nighttime exterior noise level standards without mitigation. Therefore, the unmitigated Project operational noise level impacts are considered *less than significant*.



		No	ise Level at	Receiver Lo	ocations (dl	BA) <sup>2</sup>	Threshold Exceeded? <sup>3</sup>	
Receiver Location <sup>1</sup>	Land Use	L <sub>50</sub> (30 mins)	L <sub>25</sub>	L <sub>8</sub> (5 mins)	L <sub>2</sub>	L <sub>max</sub> (Anytime)		
			(15 mins)		(1 min)		Daytime	Nighttime
Exterior Noise	Daytime Residential	55	60	65	70	75	-	-
Level Standards	Nighttime Residential	50	55	60	65	70	-	-
R1	Residential	40.0	49.9	50.5	51.3	51.9	No	No
R2	Residential	32.7	42.3	43.0	43.9	44.6	No	No
R3	Residential	33.2	42.9	43.6	44.5	45.2	No	No
R4	Residential	33.4	43.4	44.0	44.8	45.4	No	No
R5	Residential	35.3	45.1	45.8	46.6	47.3	No	No

TABLE 10-3: OPERATIONAL NOISE LEVEL COMPLIANCE

<sup>1</sup> See Exhibit 10-A for the noise source locations.

<sup>2</sup> Estimated Project operational noise levels as shown on Table 10-2.

<sup>3</sup> Do the Project operational noise levels satisfy the operational noise level standards?

"Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

# **10.4 PROJECT OPERATIONAL NOISE LEVEL CONTRIBUTIONS**

To describe the Project operational noise level contributions, the Project operational noise levels are combined with the existing ambient noise levels measurements for the nearby receiver locations potentially impacted by Project operational noise sources. Since the units used to measure noise, decibels (dB), are logarithmic units, the Project-operational and existing ambient noise levels cannot be combined using standard arithmetic equations. (3) Instead, they must be logarithmically added using the following base equation:

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

Where "SPL1," "SPL2," etc. are equal to the sound pressure levels being combined, or in this case, the Project-operational and existing ambient noise levels. The difference between the combined Project and ambient noise levels describe the Project noise level contributions to the existing ambient noise environment. Noise levels that would be experienced at receiver locations when Project-source noise is added to the daytime and nighttime ambient conditions are presented on Tables 10-4 and 10-5, respectively.

As indicated on Tables 10-4 and 10-5, the Project will generate daytime and nighttime operational noise level increases of up to 0.2 dBA L<sub>50</sub> at the nearby receiver locations. Since the Project-related operational noise level contributions with mitigation will satisfy the operational noise level increase significance criteria presented in Table 4-2, the increases at the sensitive receiver locations will be *less than significant*.



Receiver Location <sup>1</sup>	Unmitigated Project Operational Noise Level (dBA) <sup>2</sup>	Meas. Location <sup>3</sup>	Reference Ambient Noise Levels (dBA) <sup>4</sup>	Combined Project and Ambient (dBA) <sup>5</sup>	Project Increase (dBA) <sup>6</sup>	Threshold (dBA) <sup>7</sup>	Threshold Exceeded? <sup>7</sup>
R1	40.0	L1	60.2	60.2	0.0	3.0	No
R2	32.7	L1	60.2	60.2	0.0	3.0	No
R3	33.2	L3	52.0	52.1	0.1	5.0	No
R4	33.4	L4	47.7	47.9	0.2	5.0	No
R5	35.3	L2	54.4	54.5	0.1	5.0	No

TABLE 10-4: PROJECT DAYTIME OPERATIONAL NOISE CONTRIBUTIONS

<sup>1</sup> See Exhibit 9-A for the sensitive receiver locations.

<sup>2</sup> Total Project operational noise levels as shown on Table 10-2.

<sup>3</sup> Reference noise level measurement locations as shown on Exhibit 5-A.

<sup>4</sup> Observed daytime ambient noise levels as shown on Table 5-1.

<sup>5</sup> Represents the combined ambient conditions plus the Project activities.

<sup>6</sup> The noise level increase expected with the addition of the proposed Project activities.

<sup>7</sup> FICON significance criteria as defined in Section 4, Table 4-1, based on the ambient noise level without the Project.

#### TABLE 10-5: PROJECT NIGHTTIME OPERATIONAL NOISE CONTRIBUTIONS

Receiver Location <sup>1</sup>	Unmitigated Project Operational Noise Level (dBA) <sup>2</sup>	Meas. Location <sup>3</sup>	Reference Ambient Noise Levels (dBA) <sup>4</sup>	Combined Project and Ambient (dBA) <sup>5</sup>	Project Increase (dBA) <sup>6</sup>	Threshold (dBA) <sup>7</sup>	Threshold Exceeded? <sup>7</sup>
R1	40.0	L1	53.7	53.9	0.2	5.0	No
R2	32.7	L1	53.7	53.7	0.0	5.0	No
R3	33.2	L3	50.8	50.9	0.1	5.0	No
R4	33.4	L4	47.7	47.9	0.2	5.0	No
R5	35.3	L2	52.1	52.2	0.1	5.0	No

<sup>1</sup> See Exhibit 9-A for the sensitive receiver locations.

 $^{\rm 2}$  Total Project operational noise levels as shown on Table 10-2.

<sup>3</sup> Reference noise level measurement locations as shown on Exhibit 5-A.

<sup>4</sup> Observed daytime ambient noise levels as shown on Table 5-1.

<sup>5</sup> Represents the combined ambient conditions plus the Project activities.

<sup>6</sup> The noise level increase expected with the addition of the proposed Project activities.

<sup>7</sup> FICON significance criteria as defined in Section 4, Table 4-1, based on the ambient noise level without the Project.



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# **11 CONSTRUCTION IMPACTS**

This section analyzes potential impacts resulting from the short-term construction activities associated with the development of the Project. Exhibit 11-A shows the boundaries of the soil import/export activity area and the construction activity areas at the Project site in relation to the nearby sensitive receiver locations.

# **11.1 CONSTRUCTION NOISE LEVELS**

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

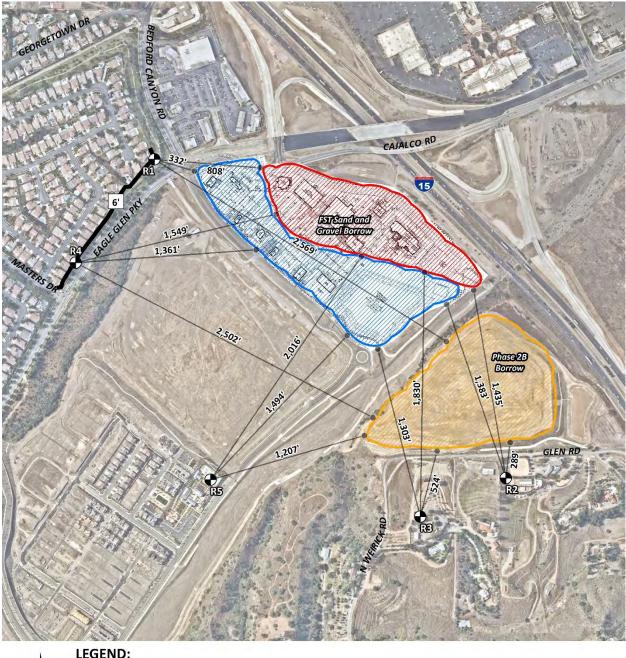
- Soil Import/Export
- Grading
- Building Construction
- Paving
- Architectural Coating

This construction noise analysis was prepared using reference noise level measurements taken by Urban Crossroads, Inc. to describe the typical construction activity noise levels for each stage of Project construction. The construction reference noise level measurements represent a list of typical construction activity noise levels. Noise levels generated by heavy construction equipment can range from approximately 68 dBA to in excess of 80 dBA when measured at 50 feet. Hard site conditions are used in the construction noise analysis which result in noise levels that attenuate (or decrease) at a rate of 6 dBA for each doubling of distance from a point source (i.e. construction equipment). For example, a noise level of 80 dBA measured at 50 feet from the noise source to the receiver would be reduced to 74 dBA at 100 feet from the source to the receiver and would be further reduced to 68 dBA at 200 feet from the source to the receiver. The construction stages used in this analysis are consistent with the data used to support the construction emissions in the *Bedford Marketplace Air Quality Impact Analysis* prepared by Urban Crossroads, Inc. (21)

# **11.2 CONSTRUCTION REFERENCE NOISE LEVELS**

To describe the Project construction noise levels, measurements were collected for similar activities at several construction sites. Table 11-1 provides a summary of the construction reference noise level measurements. Since the reference noise levels were collected at varying distances, all construction noise level measurements presented on Table 11-1 have been adjusted to describe a common reference distance of 50 feet.





**EXHIBIT 11-A: CONSTRUCTION NOISE SOURCE LOCATIONS** 

#### LEGEND:

Receiver Locations 6' Existing Barrier Height (in feet)

Existing Barrier

- Phase 2B Borrow 11
- FST Sand and Gravel Mine Borrow'
- Construction Area
  - Distance from receiver to construction activity (in feet)

N



ID	Noise Source	Duration (h:mm:ss)	Reference Distance From Source (Feet)	Reference Noise Levels @ Reference Distance (dBA L <sub>max</sub> )	Reference Noise Levels @ 50 Feet (dBA L <sub>max</sub> ) <sup>6</sup>
1	Truck Pass-Bys & Dozer Activity <sup>1</sup>	0:01:15	30'	68.1	63.7
2	Dozer Activity <sup>1</sup>	0:01:00	30'	76.4	72.0
3	Construction Vehicle Maintenance Activities <sup>2</sup>	0:01:00	30'	74.8	70.4
4	Foundation Trenching <sup>2</sup>	0:01:01	30'	74.9	70.5
5	Rough Grading Activities <sup>2</sup>	0:05:00	30'	84.8	80.4
6	Framing <sup>3</sup>	0:02:00	30'	76.7	72.3
7	Scraper, Water Truck, & Dozer Activity <sup>4</sup>	0:30:00	30'	87.7	83.3
8	Concrete Mixer Truck Movements <sup>5</sup>	0:01:00	50'	73.1	73.1
9	Concrete Paver Activities <sup>5</sup>	0:01:00	30'	75.7	71.3
10	Concrete Mixer Pour & Paving Activities <sup>5</sup>	0:01:00	30'	76.3	71.9
11	Concrete Mixer Backup Alarms & Air Brakes <sup>5</sup>	0:00:20	50'	78.8	78.8
12	Concrete Mixer Pour Activities <sup>5</sup>	1:00:00	50'	79.2	79.2

TABLE 11-1: CONSTRUCTION REFERENCE NOISE LEVELS

<sup>1</sup>As measured by Urban Crossroads, Inc. on 10/14/15 at a business park construction site located at the northwest corner of Barranca Parkway and Alton Parkway in the City of Irvine.

<sup>2</sup> As measured by Urban Crossroads, Inc. on 10/20/15 at a construction site located in Rancho Mission Viejo.

<sup>3</sup> As measured by Urban Crossroads, Inc. on 10/20/15 at a residential construction site located in Rancho Mission Viejo.

<sup>4</sup> As measured by Urban Crossroads, Inc. on 10/30/15 during grading operations at an industrial construction site in the City of Ontario.

<sup>5</sup> Reference noise level measurements were collected from a nighttime concrete pour at an industrial construction site, located at 27334 San Bernardino Avenue in the City of Redlands, between 1:00 a.m. to 2:00 a.m. on 7/1/15.

<sup>6</sup> Reference noise levels are calculated at 50 feet using a drop off rate of 6 dBA per doubling of distance (point source).

# **11.3** SOIL IMPORT/EXPORT CONSTRUCTION BORROW SITES

To bring the Modified Bedford Marketplace Project Site up to an elevation similar (within five feet) of the existing 10-acre commercial pad, import of approximately 440,000 cubic yards of dirt is required. The applicant has identified two potential borrow sites to provide the necessary fill dirt. The FST Sand and Gravel Mine, located east of the I-15 Freeway and the Arantine Hills Specific Plan Phase 2B site as shown on Exhibit 11-A.

### 11.3.1 FST SAND AND GRAVEL MINE BORROW SITE

The import operation is expected to include 250 full loads per night, assuming 15 cubic yards per load, for a total of 3,750 cubic yards per night. To import 440,000 cubic yards, approximately 118 nights of import would be required. The Project proposes to import dirt during the hours (8:00 p.m. to 4:00 a.m.) and complete grading operations both during daytime and nighttime hours.

During the nighttime hours, dirt would be imported to the Modified Project Site, dumped, and placed by grading equipment. Daytime grading activities would initially last for approximately two weeks and begin before import and overlap with initial import operations. The daytime activities include remedial grading, which requires the over-excavation of approximately four to six feet below existing ground surface. The over-excavated material would be stockpiled on site.

Additional daytime grading would occur after imported material has be placed in the overexcavated areas to bring the site closer to proposed grades. The stockpiled material would then be placed over the imported material to create the finished building pad, compacted to meet geotechnical specifications. According to the Project applicant, every effort will be made to limit on-site construction activities particularly during the noise sensitive nighttime hours. For this reason, the Applicant is proposing to limit nighttime operations to permit only the essential equipment needed to support the soil import/export haul truck operations. This focused on-site construction noise analysis is based on the following construction equipment profile:

<u>Daytime</u>: During the daytime hours from 7:00 a.m. to 7:00 p.m. the project will rely on the following equipment for the over-excavation activities:

- three (3) Caterpillar 651 scrapers
- one (1) tracked bulldozer (Caterpillar D-8)
- one (1) water truck

<u>Nighttime</u>: According the Project applicant nighttime (8:00 p.m. to 4:00 a.m.) construction activities will be limited to the following construction equipment:

- one (1) rubber tire bulldozer, such as a Caterpillar 834, would be used to move and compact the imported dirt. The site is large enough to avoid backing up and the use of warning signals. Additionally, the rubber tire equipment would be used to avoid the noise from tracked equipment.
- one (1) water truck (4,000 gallon)
- one (1) street sweeper would be used during the import operation.

# **11.3.2** Phase **2B** Borrow Site

As a potential borrow site, Phase 2B could provide the necessary source of dirt to support the planned Bedford Marketplace pad elevation increase. Preliminary estimates suggest that the existing Phase 2B site will be lowered by approximately 13 feet to provide the necessary supply of dirt for import. Due to the proximity to the Bedford Marketplace, import of dirt from Phase 2B will limited to the daytime hours from 7:00 a.m. to 7:00 p.m.

# 11.4 SOIL IMPORT/EXPORT CONSTRUCTION NOISE ANALYSIS

To describe the soil import/export construction noise impacts at nearby noise sensitive receiver locations, exterior noise levels have been calculated for the daytime and the potential nighttime activities.

# 11.4.1 SOIL IMPORT/EXPORT CONSTRUCTION NOISE ANALYSIS (DAYTIME)

Based on the daytime construction equipment profile, Table 11-2 provides a summary of the estimated daytime construction noise levels for each borrow site at each of the sensitive receiver locations nearest the soil import/export area identified on Exhibit 11-A. Table 11-2 shows that the daytime import/export construction noise levels will range from 51.2 to 59.1 dBA L<sub>max</sub> for the FST Sand and Gravel Mine borrow site. Since Phase 2B borrow site is closer to the nearby receiver



locations, the daytime import/export construction noise levels will range from 49.0 to 68.0 dBA  $L_{\text{max}}$ 

Reference Construction Activity <sup>1</sup>	Reference Noise Level @ 50 Feet (dBA L <sub>max</sub> )
Truck Pass-Bys & Dozer Activity	63.7
Dozer Activity	72.0
Rough Grading Activities	80.4
Scraper, Water Truck, & Dozer Activity	83.3
Highest Reference Noise Level at 50 Feet (dBA L <sub>eq</sub> ):	83.3

TABLE 11-2: SOIL IMPORT/EXPORT ACTIVITY NOISE LEVELS (DAYTIME)
----------------------------------------------------------------

Borrow Site	Receiver Location	Distance to Closest Fill Site Activity (Feet) <sup>2</sup>	Distance Attenuation (dBA L <sub>max</sub> ) <sup>3</sup>	Estimated Noise Barrier Attenuation (dBA L <sub>max</sub> ) <sup>4</sup>	Construction Noise Level (dBA L <sub>max</sub> )
	R1	808'	-24.2	0.0	59.1
FST Sand	R2	1,435'	-29.2	0.0	54.1
and Gravel	R3	1,830'	-31.3	0.0	52.0
Mine	R4	1,549'	-29.8	0.0	53.4
	R5	2,016'	-32.1	0.0	51.2
	R1	2,569'	-34.2	0.0	49.0
	R2	289'	-15.2	0.0	68.0
Phase 2B	R3	524'	-20.4	0.0	62.9
	R4	2,502'	-34.0	0.0	49.3
	R5	1,207'	-27.7	0.0	55.6

<sup>1</sup> Reference construction noise level measurements taken by Urban Crossroads, Inc.

<sup>2</sup> Distance from the nearest point of construction activity to the nearest receiver.

<sup>3</sup> Point (stationary) source drop off rate of 6.0 dBA per doubling of distance.

<sup>4</sup> Estimated barrier attenuation from existing barriers in the Project study area, if any.

### 11.4.2 SOIL IMPORT/EXPORT CONSTRUCTION NOISE ANALYSIS (NIGHTTIME)

Based on the nighttime construction equipment profile for the FST Sand and Gravel Mine construction activity, Table 11-3 provides a summary of the estimated nighttime construction noise levels at each of the sensitive receiver locations. No nighttime construction is needed to support the Phase 2B borrow site. As shown on Table 11-3 the Project-related daytime soil import/export construction noise levels when the highest reference noise level is operating will range from 39.9 to 47.8 dBA L<sub>max</sub>.

Reference Construction Activity <sup>1</sup>	Reference Noise Level @ 50 Feet (dBA L <sub>max</sub> )
Truck Pass-Bys & Dozer Activity	63.7
Dozer Activity	72.0
Highest Reference Noise Level at 50 Feet (dBA $L_{eq}$ ):	72.0

### TABLE 11-3: SOIL IMPORT/EXPORT ACTIVITY NOISE LEVELS (NIGHTTIME)

Borrow Site	Receiver Location	Distance to Closest Fill Site Activity (Feet) <sup>2</sup>	Distance Attenuation (dBA L <sub>max</sub> ) <sup>3</sup>	Estimated Noise Barrier Attenuation (dBA L <sub>max</sub> ) <sup>4</sup>	Construction Noise Level (dBA L <sub>max</sub> )
	R1	808'	-24.2	0.0	47.8
FST Sand	R2	1,435'	-29.2	0.0	42.8
and Gravel	R3	1,830'	-31.3	0.0	40.7
Mine	R4	1,549'	-29.8	0.0	42.1
	R5	2,016'	-32.1	0.0	39.9

<sup>1</sup> Reference construction noise level measurements taken by Urban Crossroads, Inc.

 $^{\rm 2}$  Distance from the nearest point of construction activity to the nearest receiver.

<sup>3</sup> Point (stationary) source drop off rate of 6.0 dBA per doubling of distance.

<sup>4</sup> Estimated barrier attenuation from existing barriers in the Project study area, if any.

# **11.5** SOIL IMPORT/EXPORT NOISE COMPLIANCE

To analyze noise impacts originating from the construction of the Bedford Marketplace, noise from construction activities are typically evaluated against standards established under a City's Municipal Code. The City of Corona Municipal Code, Section 17.84.040(D)(2) establishes the permitted hours during which construction within the City of Corona may take place, between 7:00 a.m. to 8:00 p.m. on Mondays through Saturdays, and 10:00 a.m. to 6:00 p.m. on Sundays and holidays. (11) Therefore, the planned nighttime Project soil import/export activity will require a noise variance consistent with the provisions outlined in the City of Corona Municipal Code Section 17.84.040(H)(1) to perform the evening and nighttime grading activities.

For daytime construction activities, this analysis relies on the City of Corona Municipal Code Section 17.84.040 permitted daytime operational noise standards for residential properties to establish the exterior construction noise level criteria. Based on these criteria, a daytime exterior noise level of 75 dBA L<sub>max</sub> is be used to describe the maximum acceptable threshold for determining the impacts due to Project construction for sensitive receivers. To account for the noise sensitive nighttime hours between 10:00 p.m. and 7:00 a.m., this analysis relies on a maximum exterior noise level of 50 dBA L<sub>max</sub>.



# 11.5.1 SOIL IMPORT/EXPORT NOISE COMPLIANCE (DAYTIME)

As shown on Table 11-4 the estimated Project daytime construction noise levels will approach 59.1 dBA L<sub>max</sub> for construction activity associated with the FST Sand and Gravel Mine and 68.0 dBA L<sub>max</sub> for Phase 2B construction activity. The analysis shows that either borrow site will satisfy the City of Corona maximum acceptable threshold for determining the impacts due to Project construction for sensitive receiver's daytime exterior noise level of 75 dBA L<sub>max</sub>. Therefore, based on the results of the analysis, all nearby receiver locations will experience *less than significant* impacts due to the daytime soil import/export noise construction noise levels at the Project site.

		Unmitigated	Daytime			
Borrow Site	Receiver Location <sup>1</sup>	Construction Noise Levels (dBA L <sub>max</sub> ) <sup>2</sup>	Threshold (dBA L <sub>max</sub> ) <sup>3</sup>	Threshold Exceeded? <sup>4</sup>		
	R1	59.1	75	No		
	R2	54.1	75	No		
FST Sand and Gravel Mine	R3	52.0	52.0 75			
Graver Wille	R4	53.4	75	No		
	R5	51.2	75	No		
	R1	49.0	75	No		
	R2	68.0	75	No		
Phase 2B	R3	62.9	75	No		
	R4	49.3	75	No		
	R5	55.6	75	No		

TABLE 11-4: SOIL IMPORT/EXPORT NOISE COMPLIANCE (DAYTIME)

<sup>1</sup>Noise receiver locations are shown on Exhibit 9-A

 $^{\rm 2}$  Estimated daytime construction noise levels, as shown on Table 11-2

<sup>3</sup> City of Corona Daytime Construction noise standard.

<sup>4</sup> Do the estimated Project construction noise levels satisfy the construction noise level threshold?



# 11.5.2 SOIL IMPORT/EXPORT NOISE COMPLIANCE (NIGHTTIME)

As shown on Table 11-5 the estimated Project nighttime construction noise levels from the import of dirt from the FST Sand and Gravel Mine will satisfy the City of Corona 50 dBA  $L_{max}$  stationary source nighttime noise level thresholds at all receiver locations. Therefore, based on the results of the analysis, all nearby receiver locations will experience *less than significant* impacts due to the nighttime soil import/export noise construction noise levels at the Project site. However, planned nighttime Project soil import/export activity will require a noise variance consistent with the provisions outlined in the City of Corona Municipal Code Section 17.84.040(H)(1) to perform the evening and nighttime grading activities.

		Unmitigated	Nighttime		
Borrow Site	Receiver Location <sup>1</sup>	Construction Noise Levels (dBA L <sub>max</sub> ) <sup>2</sup>	Threshold (dBA L <sub>max</sub> ) <sup>3</sup>	Threshold Exceeded? <sup>4</sup>	
	R1	47.8	50	No	
	R2	42.8	50	No	
FST Sand and Gravel Mine	R3	40.7	50	No	
Graver Wille	R4	42.1	50	No	
	R5	39.9	50	No	

### TABLE 11-5: SOIL IMPORT/EXPORT NOISE COMPLIANCE (NIGHTTIME)

<sup>1</sup>Noise receiver locations are shown on Exhibit 9-A

<sup>2</sup> Estimated nighttime construction noise levels, as shown on Table 11-3

<sup>3</sup> City of Corona Nighttime Construction noise standard.

<sup>4</sup> Do the estimated Project construction noise levels satisfy the construction noise level threshold?



# **11.6 CONSTRUCTION NOISE ANALYSIS**

Tables 11-6 to 11-9 show the Project construction stages and the reference construction noise levels used for each stage. Table 11-10 provides a summary of the noise levels from each stage of construction at each of the sensitive receiver locations. Based on the reference construction noise levels, the Project-related construction noise levels when the highest reference noise level is operating at the edge of primary construction activity nearest each sensitive receiver location will range from 50.9 to 63.9 dBA  $L_{max}$  at the noise-sensitive receiver locations, as shown on Table 11-10

Reference Construction Activity <sup>1</sup>	Reference Noise Level @ 50 Feet (dBA L <sub>max</sub> )
Truck Pass-Bys & Dozer Activity	63.7
Dozer Activity	72.0
Rough Grading Activities	80.4
Highest Reference Noise Level at 50 Feet (dBA Leq):	80.4

### TABLE 11-6: GRADING ACTIVITY NOISE LEVELS

Receiver Location	Distance to Project Site Construction Activity (Feet) <sup>2</sup>	Distance Attenuation (dBA L <sub>max</sub> ) <sup>3</sup>	Estimated Noise Barrier Attenuation (dBA L <sub>max</sub> ) <sup>4</sup>	Construction Noise Level (dBA L <sub>max</sub> )
R1	332'	-16.4	0.0	63.9
R2	1,383'	-28.8	0.0	51.5
R3	1,303'	-28.3	0.0	52.0
R4	1,361'	-28.7	0.0	51.7
R5	1,494'	-29.5	0.0	50.9

<sup>1</sup> Reference construction noise level measurements taken by Urban Crossroads, Inc.

 $^{\rm 2}$  Distance from the nearest point of construction activity to the nearest receiver.

<sup>3</sup> Point (stationary) source drop off rate of 6.0 dBA per doubling of distance.

<sup>4</sup> Estimated barrier attenuation from existing barriers in the Project study area, if any.



Reference Construction Activity <sup>1</sup>	Reference Noise Level @ 50 Feet (dBA L <sub>max</sub> )
Construction Vehicle Maintenance Activities	70.4
Foundation Trenching	70.5
Framing	72.3
Highest Reference Noise Level at 50 Feet (dBA $L_{eq}$ ):	72.3

### TABLE 11-7: BUILDING CONSTRUCTION ACTIVITY NOISE LEVELS

Receiver Location	Distance to Project Site Construction Activity (Feet) <sup>2</sup>	Distance Attenuation (dBA L <sub>max</sub> ) <sup>3</sup>	Estimated Noise Barrier Attenuation (dBA L <sub>max</sub> ) <sup>4</sup>	Construction Noise Level (dBA L <sub>max</sub> )
R1	332'	-16.4	0.0	55.8
R2	1,383'	-28.8	0.0	43.4
R3	1,303'	-28.3	0.0	43.9
R4	1,361'	-28.7	0.0	43.6
R5	1,494'	-29.5	0.0	42.8

<sup>1</sup> Reference construction noise level measurements taken by Urban Crossroads, Inc.

<sup>2</sup> Distance from the nearest point of construction activity to the nearest receiver.

<sup>3</sup> Point (stationary) source drop off rate of 6.0 dBA per doubling of distance.

<sup>4</sup> Estimated barrier attenuation from existing barriers in the Project study area, if any.



Reference Construction Activity <sup>1</sup>	Reference Noise Level @ 50 Feet (dBA L <sub>max</sub> )
Concrete Mixer Truck Movements	73.1
Concrete Paver Activities	71.3
Concrete Mixer Pour & Paving Activities	71.9
Concrete Mixer Backup Alarms & Air Brakes	78.8
Concrete Mixer Pour Activities	79.2
Highest Reference Noise Level at 50 Feet (dBA L <sub>eq</sub> ):	79.2

### TABLE 11-8: PAVING ACTIVITY NOISE LEVELS

Receiver Location	Distance to Project Site Construction Activity (Feet) <sup>2</sup>	Distance Attenuation (dBA L <sub>max</sub> ) <sup>3</sup>	Estimated Noise Barrier Attenuation (dBA L <sub>max</sub> ) <sup>4</sup>	Construction Noise Level (dBA L <sub>max</sub> )
R1	332'	-16.4	0.0	62.8
R2	1,383'	-28.8	0.0	50.4
R3	1,303'	-28.3	0.0	50.9
R4	1,361'	-28.7	0.0	50.5
R5	1,494'	-29.5	0.0	49.7

 $^{1}\,\mathrm{Reference}$  construction noise level measurements taken by Urban Crossroads, Inc.

 $^{\rm 2}$  Distance from the nearest point of construction activity to the nearest receiver.

 $^{\rm 3}$  Point (stationary) source drop off rate of 6.0 dBA per doubling of distance.

<sup>4</sup> Estimated barrier attenuation from existing barriers in the Project study area, if any.



Reference Construction Activity <sup>1</sup>	Reference Noise Level @ 50 Feet (dBA L <sub>max</sub> )
Construction Vehicle Maintenance Activities	70.4
Framing	72.3
Highest Reference Noise Level at 50 Feet (dBA $L_{eq}$ ):	72.3

### TABLE 11-9: ARCHITECTURAL COATING ACTIVITY NOISE LEVELS

Receiver Location	Distance to Project Site Construction Activity (Feet) <sup>2</sup>	Distance Attenuation (dBA L <sub>max</sub> ) <sup>3</sup>	Estimated Noise Barrier Attenuation (dBA L <sub>max</sub> ) <sup>4</sup>	Construction Noise Level (dBA L <sub>max</sub> )
R1	332'	-16.4	0.0	55.8
R2	1,383'	-28.8	0.0	43.4
R3	1,303'	-28.3	0.0	43.9
R4	1,361'	-28.7	0.0	43.6
R5	1,494'	-29.5	0.0	42.8

<sup>1</sup> Reference construction noise level measurements taken by Urban Crossroads, Inc.

<sup>2</sup> Distance from the nearest point of construction activity to the nearest receiver.

<sup>3</sup> Point (stationary) source drop off rate of 6.0 dBA per doubling of distance.

<sup>4</sup> Estimated barrier attenuation from existing barriers in the Project study area, if any.

#### TABLE 11-10: CONSTRUCTION EQUIPMENT NOISE LEVEL SUMMARY

	Construction Noise Levels by Stage (dBA L <sub>max</sub> )						
Receiver Location <sup>1</sup>	Grading	Building Construction	Paving	Architectural Coating	Highest Construction Noise Level <sup>2</sup>		
R1	63.9	55.8	62.8	55.8	63.9		
R2	51.5	43.4	50.4	43.4	51.5		
R3	52.0	43.9	50.9	43.9	52.0		
R4	51.7	43.6	50.5	43.6	51.7		
R5	50.9	42.8	49.7	42.8	50.9		

<sup>1</sup>Noise receiver locations are shown on Exhibit 9-A.

<sup>2</sup> Estimated construction noise levels based on the highest reference construction activity for each stage.



# 11.7 CONSTRUCTION NOISE LEVEL COMPLIANCE

The construction noise analysis shows that the highest construction noise levels will occur when construction activities take place at the closest point from primary Project construction activity to each of the nearby receiver locations. As shown on Table 11-11, the unmitigated construction noise levels are expected to range from 50.9 to 63.9 dBA L<sub>max</sub> at the nearby receiver locations.

To evaluate whether the Project will generate potentially significant short-term noise levels at off-site sensitive receiver locations a construction-related noise level threshold of 75 dBA  $L_{max}$  is used as acceptable thresholds for construction noise at the nearby sensitive receiver locations. Table 11-11 shows the highest construction noise levels at the potentially impacted receiver locations are expected to approach 63.9 dBA  $L_{max}$  and will satisfy the 75 dBA  $L_{max}$  daytime significance threshold during temporary Project construction activities. The noise impact due to unmitigated Project construction noise levels is, therefore, considered a *less than significant* impact at all nearby sensitive receiver locations.

	Unmitigated	Daytime		
Receiver Location <sup>1</sup>	Construction Noise Levels (dBA L <sub>max</sub> ) <sup>2</sup>	Threshold (dBA L <sub>max</sub> ) <sup>3</sup>	Threshold Exceeded? <sup>4</sup>	
R1	63.9	75	No	
R2	51.5	75	No	
R3	52.0	75	No	
R4	51.7	75	No	
R5	50.9	75	No	

TABLE 11-11: CONSTRUCTION EQUIPMENT NOISE LEVEL COMPLIANCE

<sup>1</sup>Noise receiver locations are shown on Exhibit 11-A

<sup>2</sup> Estimated daytime construction noise levels, as shown on Table 11-2

<sup>3</sup> City of Corona Daytime Construction noise standard.

<sup>4</sup> Do the estimated Project construction noise levels satisfy the construction noise level threshold?

# **11.8 CONSTRUCTION VIBRATION IMPACTS**

Construction activity can result in varying degrees of ground vibration, depending on the equipment and methods used, distance to the affected structures and soil type. It is expected that ground-borne vibration from Project construction activities would cause only intermittent, localized intrusion. The proposed Project's construction activities most likely to cause vibration impacts are:

- Heavy Construction Equipment: Although all heavy mobile construction equipment has the potential of causing at least some perceptible vibration while operating close to buildings, the vibration is usually short-term and is not of sufficient magnitude to cause building damage.
- Trucks: Trucks hauling building materials to construction sites can be sources of vibration intrusion if the haul routes pass through residential neighborhoods on streets with bumps or potholes. Repairing the bumps and potholes generally eliminates the problem.



Ground-borne vibration levels resulting from construction activities occurring within the Project site were estimated by data published by the Federal Transit Administration (FTA). Construction activities that would have the potential to generate low levels of ground-borne vibration within the Project site include mobile equipment activities and pile driving, among others. Using the vibration source level of construction equipment provided on Table 6-9 and the construction vibration assessment methodology published by the FTA, it is possible to estimate the Project vibration impacts. The construction vibration analysis is based on the shortest distance to either Project site construction or Excess Fill Dirt Site soil import/export activities. Based on the reference vibration levels provided by the FTA, a large bulldozer represents the peak source of vibration with a reference level of 0.089 in/sec PPV at a distance of 25 feet. At distances ranging from 332 to 1,494 feet from the Project site, construction vibration levels are expected to range from 0.000 to 0.002 in/sec PPV. In order to assess the human perception of vibration levels in PPV, as previously discussed in Section 3.6.2, the velocities are converted to RMS vibration levels based on the Caltrans Transportation and Construction Vibration Guidance Manual conversion factor of 0.71. Table 11-9 shows the construction vibration levels in RMS are expected to range from 0.000 to 0.001 in/sec (RMS) at the five receiver locations. Based on the City of Corona vibration standards, the proposed Project site will not include or require equipment, facilities, or activities that would result in a human response (annoyance).

The Project construction is not expected to generate vibration levels exceeding the City of Corona maximum acceptable vibration standard of 0.05 in/sec (RMS). Further, impacts at the site of the closest sensitive receiver are unlikely to be sustained during the entire construction period, but will occur rather only during the times that heavy construction equipment is operating proximate to the Project site perimeter. Moreover, construction at the Project site will be restricted to daytime hours consistent with City requirements thereby eliminating potential vibration impact during the sensitive nighttime hours. On this basis the potential for the Project to result in exposure of persons to, or generation of, excessive ground-borne vibration is determined to be *less than significant*.

Distance			Receiver PPV Levels (in/sec) <sup>2</sup>					_
Receiver Location <sup>1</sup>	To Property Line (In Feet)	Small Bulldozer	Jack- hammer	Loaded Trucks	Large Bulldozer	Peak Vibration	Velocity Levels <sup>3</sup> (in/sec)	Potential Significant Impact? <sup>4</sup>
R1	332'	0.0001	0.0007	0.0016	0.0018	0.002	0.001	No
R2	1,383'	0.0000	0.0001	0.0002	0.0002	0.000	0.000	No
R3	1,303'	0.0000	0.0001	0.0002	0.0002	0.000	0.000	No
R4	1,361'	0.0000	0.0001	0.0002	0.0002	0.000	0.000	No
R5	1,494'	0.0000	0.0001	0.0002	0.0002	0.000	0.000	No

TABLE 11-12: CONSTRUCTION EQUIPMENT VIBRATION LEVELS

<sup>1</sup>Noise receiver locations are shown on Exhibit 11-A.

<sup>2</sup> Based on the Vibration Source Levels of Construction Equipment included on Table 6-9.

<sup>3</sup> Vibration levels in PPV are converted to RMS velocity using a 0.71 conversion factor identified in the Caltrans Transportation and Construction Vibration Guidance Manual, September 2013.

<sup>4</sup> Does the Peak Vibration exceed the City of Corona maximum acceptable vibration standard of 0.05 in/sec?



# **12 REFERENCES**

- 1. Urban Crossroads, Inc. Bedford Marketplace Traffic Study. September 2019.
- 2. **State of California.** *California Environmental Quality Act, Appendix G.* 2018.
- 3. California Department of Transportation Environmental Program. *Technical Noise Supplement A Technical Supplement to the Traffic Noise Analysis Protocol.* Sacramento, CA : s.n., September 2013.
- 4. Environmental Protection Agency Office of Noise Abatement and Control. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. March 1974. EPA/ONAC 550/9/74-004.
- 5. U.S. Department of Transportation, Federal Highway Administration, Office of Environment and Planning, Noise and Air Quality Branch. *Highway Traffic Noise Analysis and Abatement Policy and Guidance.* December 2011.
- 6. U.S. Department of Transportation, Federal Highway Administration. *Highway Traffic Noise in the United States, Problem and Response.* April 2000. p. 3.
- 7. U.S. Environmental Protection Agency Office of Noise Abatement and Control. *Noise Effects Handbook-A Desk Reference to Health and Welfare Effects of Noise.* October 1979 (revised July 1981). EPA 550/9/82/106.
- 8. Office of Planning and Research. State of California General Plan Guidelines. 2018.
- 9. State of California. California Green Building Standards Code. 2019.
- 10. City of Corona. General Plan Public Health and Safety Element Noise. March 2004.
- 11. —. Municipal Code, Section 17.84.040 Noise.
- 12. California Court of Appeal. *Gray v. County of Madera, F053661.* 167 Cal.App.4th 1099; Cal.Rptr.3d, October 2008.
- 13. Federal Interagency Committee on Noise. Federal Agency Review of Selected Airport Noise Analysis Issues. August 1992.
- 14. American National Standards Institute (ANSI). Specification for Sound Level Meters ANSI S1.4-2014/IEC 61672-1:2013.
- 15. U.S. Department of Transportation, Federal Transit Administration. *Transit Noise and Vibration Impact Assessment.* May 2006. FTA-VA-90-1003-06.
- 16. U.S. Department of Transportation, Federal Highway Administration. FHWA Highway Traffic Noise Prediction Model. December 1978. FHWA-RD-77-108.
- 17. California Department of Transportation Environmental Program, Office of Environmental Engineering. Use of California Vehicle Noise Reference Energy Mean Emission Levels (Calveno REMELs) in FHWA Highway Traffic Noise Prediction. September 1995. TAN 95-03.
- 18. California Department of Transportation. *Traffic Noise Attenuation as a Function of Ground and Vegetation Final Report.* June 1995. FHWA/CA/TL-95/23.
- 19. U.S. Department of Transportation, Federal Highway Administration, Office of Environment and Planning, Noise and Air Quality Branch. *Highway Traffic Noise Analysis and Abatement Policy and Guidance*. June, 1995.
- 20. California Department of Transportation. Traffic Noise Analysis Protocol. May 2011.
- 21. Urban Crossroads, Inc. Bedford Marketplace Air Quality Impact Analysis. November 2019.





# **13 CERTIFICATION**

The contents of this noise study report represent an accurate depiction of the noise environment and impacts associated with the proposed Bedford Marketplace Project. The information contained in this noise study report is based on the best available data at the time of preparation. If you have any questions, please contact me directly at (949) 336-5979.

Bill Lawson, P.E., INCE Principal URBAN CROSSROADS, INC. 260 E. Baker Street, Suite 200 Costa Mesa, CA 92626 (949) 336-5979 blawson@urbanxroads.com



# EDUCATION

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

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

# **PROFESSIONAL REGISTRATIONS**

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

# **PROFESSIONAL AFFILIATIONS**

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

# **PROFESSIONAL CERTIFICATIONS**

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



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APPENDIX 3.1:

CITY OF CORONA MUNICIPAL CODE



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Corona Municipal Code

# CHAPTER 17.84 PERFORMANCE STANDARDS

### Sections

17.84.010	Compliance required.
17.84.020	Fire and explosion hazards.
17.84.030	Radio-frequency energy or electrical disturbance
17.84.040	Noise.
17.84.050	Vibration.
17.84.060	Dust, smoke, glare – Emission.
17.84.070	Glare.
17.84.080	Underground storage tanks.

### 17.84.010 Compliance required.

All uses established or placed into operation after the effective date of the ordinance codified in this title shall comply at all times hereafter with the following limitations or performance standards. All uses actually established and in operation on the effective date of the ordinance codified in this title shall be made to comply with the limitations or performance standards set forth in this chapter on or before January 3, 1967 and shall comply at all times thereafter.

(`78 Code, § 17.84.010.) (Ord. 2161 § 1 (part), 1993.)

### 17.84.020 Fire and explosion hazards.

The storage and handling of flammable liquids, liquified petroleum, gases and explosives shall comply with the state rules and regulations and ordinances of the city.

(`78 Code, § 17.84.020.) (Ord. 2161 § 1 (part), 1993.)

### 17.84.030 Radio-frequency energy or electrical disturbance.

Devices which radiate radio-frequency energy shall be so operated as not to cause interference with any activity carried on beyond the boundary line of the property upon which the device is located. Radio-frequency energy is electromagnetic energy at any frequency in the radio spectrum between ten kilocycles and three million megacycles.

(`78 Code, § 17.84.030.) (Ord. 2161 § 1 (part), 1993.)

### 17.84.040 Noise.

### (A) **Purpose and intent**.

(1) The purpose of this section is to regulate noise and vibration in the interest of the public health, safety and general welfare. The city finds that certain noise levels and vibrations are detrimental to the public health, safety and general welfare and that the primary sources of noise in the city are freeways, highways, manufacturing uses, railroads, the airport and construction noise. The noise element of the General Plan contains the city's policies regarding noise and identifies noise contours for existing and future roadways and the Corona Municipal Airport, which are implemented by this chapter. The General Plan noise element shall govern all noise standards and policies.

(2) In order to control unnecessary, excessive and annoying noise and vibration in the city, it is hereby declared to be the policy of the city to prohibit such noise and vibration generated from or by all sources as specified in this chapter. It shall be the policy of the city to maintain quiet in those areas which exhibit low noise levels and to implement programs to reduce noise in those areas within the city where noise levels are above acceptable values. It is the intent of the city to minimize noise impacts to adjacent land uses pursuant to the standards identified herein.

(B) **Definitions**. Terms found in this chapter shall be defined as follows. Additional definitions are found in the noise element of the General Plan.

(1) **"A-weighted sound level**." The sound pressure level in decibels as measured on a sound level meter using the A-weighted filter network. The A-weighted filter network is designed to simulate the response of the human ear. The A-weighted sound level is expressed by the symbol dBA.

(2) **"Ambient noise**." The composite of noise from all existing sources near and far. The ambient noise level constitutes the normal or existing level of environmental noise at a given location, excluding any alleged offensive noise.

(3) **"Cumulative period**." An additive period of time composed of individual time segments which may be continuous or interrupted.

(4) "**Community noise equivalent level (CNEL)**." The average equivalent A-weighted sound level during a 24 hour day, obtained after addition of five decibels to sound levels between 7:00 p.m. and 10:00 p.m. and the addition of ten decibels to sound levels between 10:00 p.m. and 7:00 a.m.

(5) "**Decibel (dB)**." A unit for measuring the amplitude of a sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals.

(6) "**Impulsive noise**." A noise of short duration, usually less than one second, and of high intensity, with an abrupt onset and rapid decay.

(7) "**Noise study**." An acoustical analysis performed by a qualified noise engineer which determines the potential noise impacts of a roadway, land use or operation of equipment. The noise study will generate noise contours and recommend mitigation for noise impacts which exceed the city's noise standards.

(8) **"Sensitive land uses**." Those specific land uses which have associated human activities that may be subject to stress or significant interference from noise. Sensitive land uses include single family residential, multiple family residential, churches, hospitals and similar health care institutions, convalescent homes, libraries and school classroom areas.

(9) "**Simple tone noise**." A noise characterized by a predominant frequency or frequencies so that other frequencies cannot be readily distinguished. When measured, a simple tone noise shall exist if the one-third octave band sound pressure levels in the band with the tone exceeds the arithmetic average of the sound pressure levels of the two continuous one-third octave bands as follows: 5 dB for frequencies of 500 hertz or above or by 15 dB for frequencies less than or equal to 125 hertz.

(10) **"Sound attenuation device**." An enclosure, blanket, vault, box, wall, fence, panel, baffle, coating, material, silencer, or other appurtenance, mechanism, or device intended to reduce the noise level of mechanical equipment.

### (C) Noise standards.

(1) The noise ordinance identifies two separate types of noise sources: transportation and stationary. Transportation related noise sources, such as freeways, airports and railroads, are identified within this chapter and are mainly for the planning stages of project development. The noise metrics used for this noise type is the Community Noise Equivalent Level (CNEL) which is a 24 hour time weighted average noise level. The other type of noise standard is for stationary noise sources, such as industrial or construction noise, that may be intrusive to a neighboring private property. The noise metric used for stationary sources is defined as noise levels that cannot be exceeded for certain percentages of time. The noise standards shown in Table 1 are for regulating the impact of stationary noise sources to a neighboring private property. Standards for transportation related noise are found in Table 2.

TABLE 1 STATIONARY NOISE SOURCE STANDARDS						
TYPE OF LAND USE	MAXIMUM ALLOWABLE NOISE LEVELS					
	Exterior Noise Level		Interior Noise Level			
	7 a.m. to 10 p.m.	10 p.m. to 7 a.m.	7 a.m. to 10 p.m.	10 p.m. to 7 a.m.		
Single-, Double- and Multi- Family Residential	55 dBA	50 dBA	45 dBA	35 dBA		
Other Sensitive Land Uses	55 dBA	50 dBA	45 dBA	35 dBA		
Commercial Uses	65 dBA	60 dBA	Not applicable	Not applicable		
Industrial, Manufacturing or Agricultural	75 dBA	70 dBA	Not applicable	Not applicable		

(2) Stationary noise sources.

(a) Each of the noise limits specified here shall be reduced by 5 dBA for impulse or simple tone noises; provided, however, that if the ambient noise level exceeds the resulting standards, the ambient shall be the standard.

(b) If the measurement location is on the boundary between two different zones, the lower noise level standard applicable to the zone shall apply.

(c) If the intruding noise is continuous and cannot be reasonably discontinued or stopped for a time period whereby the ambient noise level can be determined, the measured noise level

obtained while the source is in operation shall be compared directly to the allowable noise level standards as specified respective to the measurement location's designated land use and for the time of the day the noise level is measured. The reasonableness of temporarily discontinuing the noise generation by an intruding noise source shall be determined by the Code Enforcement Officer for the purpose of establishing the existing ambient noise level at the measurement location.

(d) Exterior noise:

1. It shall be unlawful for any person, entity or operation at any location within the incorporated area of the city to create any noise, or to allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person, which causes the noise level when measured on any other property to exceed:

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

b. The noise standard plus 5 dB for a cumulative period of more than 15 minutes in any hour;

c. The noise standard plus 10 dB for a cumulative period of more than five minutes in any hour;

d. The noise standard plus 15 dB for a cumulative period of more than one minute in any hour; or

e. The noise standard plus 20 dB for any period of time.

2. In the event the ambient noise level exceeds any of the first four noise limit categories above, the cumulative period applicable to the category shall be increased to reflect the ambient noise level. In the event the ambient noise level exceeds the fifth noise category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

(e) Interior noise. It shall be unlawful for any person at any location within the incorporated area of the city to create any noise or to allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such a person which causes the noise level when measured within any other residential dwelling unit or sensitive land use to exceed:

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

2. The noise standard plus 5 dB for a cumulative period of more than one minute in any hour; or

3. The noise standard plus 10 dB, or the maximum measured ambient, for any period of time.

(3) Transportation noise sources.

TABLE 2 TRANSPORTATION NOISE SOURCE STANDARDS					
TYPE OF LAND USE	EXTERIOR NOISE LEVEL	INTERIOR NOISE LEVEL			
	(Private Outdoor Living Areas)				
Residential (Roadway)	65 CNEL	45 CNEL			
Residential (Airport)	65 CNEL	45 CNEL			
Other sensitive land uses	65 CNEL 94	45 CNEL			

(Roadway)		
Other sensitive land uses (Airport)	65 CNEL	45 CNEL
Hotels/Motels (Roadway)	65 CNEL	45 CNEL
Hotels/Motels (Airport)	65 CNEL	45 CNEL

(a) **Roadway noise**. A noise study shall be performed prior to the construction of new master planned roads, roadway improvements, rail lines and/or prior to the construction of residential or sensitive land uses adjacent to existing or master planned roads or railways. The noise study shall identify the existing and future noise contours for the roadway and propose mitigation measures to reduce the noise impacts to a maximum of 65 dBA CNEL in the private outdoor living area of residences and to a maximum interior noise level of 45 dBA CNEL for residential and sensitive land uses, as shown in Table 2.

(b) **Airport noise**. Sensitive land uses, site-built homes and institutional uses are prohibited in airport noise contours above 65 dBA CNEL. All subdivisions within two miles of the Corona Municipal Airport or within the 65 dBA CNEL contour shall show and record an avigation easement for the benefit of the airport. The avigation easement shall provide notification to potential buyers and occupants of the presence of the easement and the potential for over flights and aircraft noise.

# (D) Special provisions.

(1) **Mechanical equipment in residential zones.** Upon application for a building permit to install mechanical equipment, such as air conditioner and pool equipment, in a residential zone, the equipment shall be setback at least ten feet from an adjoining property line except where a five foot high block sound wall is maintained extending a distance of two feet on each side of such equipment and situated either between such equipment and the property line or on said property line. Exception: Mechanical equipment in residential zones shall be permitted closer than ten feet from an adjoining property line without a five foot high block sound wall when sound attenuation devices approved by the Building Official are installed. The noise level with sound attenuation devices installed shall comply with the limits and conditions specified in § 17.84.040(C)(2) when measured from any adjoining property. The approved sound attenuation devices shall be maintained and any approvals shall not be construed to permit violations of this code.

(2) **Construction noise**. Construction noise is prohibited between the hours of 8:00 p.m. to 7:00 a.m., Monday through Saturday and 6:00 p.m. to 10:00 a.m. on Sundays and federal holidays. Construction noise is defined as noise which is disturbing, excessive or offensive and constitutes a nuisance involving discomfort or annoyance to persons of normal sensitivity residing in the area, which is generated by the use of any tools, machinery or equipment used in connection with construction operations.

(3) **Noise devices**. In accordance with Chapter 9.24, no loudspeaker, bells, gongs, buzzers, mechanical equipment or other sounds, attention-attracting or communication device associated with any use adjacent to residential or sensitive land uses shall be discernible beyond the boundary line of the parcel, except fire protection devices, burglar alarms and church bells. Noise generated by these sources shall be enforced by the Police Department.

(4) **Noisy animals**. Noise generated by animals shall be regulated by the Police Department in accordance with Chapter 6.11.

(E) **Exemptions**. The following activities shall be exempt from these noise standards:

(1) Special events pursuant to an approved special use permit. Noise impacts shall be evaluated and conditioned as part of the special use permit;

(2) Filming pursuant to a film permit. Noise impacts shall be evaluated and conditioned as part of the film permit;

(3) Activities conducted on public parks, public playgrounds and public or private school grounds, including school athletic and entertainment events that are conducted under the sanction of the school or which a license or permit has been duly issued pursuant to any provision of city code;

(4) Noise sources associated with the maintenance of real property, provided the activities take place between the hours of 7:00 a.m. to 8:00 p.m. on any day except Sunday or between the hours of 9:00 a.m. to 8:00 p.m. on Sunday;

(5) Any activity too the extent regulation thereof has been preempted by state or federal law;

(6) Repairs to and replacement of mechanical equipment in residential zones installed by permit prior to May 20, 1993 shall be exempt from the requirements in division (D) of this section;

(7) Noise variances granted pursuant to subsection (H)(1) below;

(8) Short-term, non-continuous operations associated with government and public utility facilities that are necessary to maintain the delivery of services for the benefit of public health and safety.

(F) **Noise level measurements**. All noise shall be measured in accordance with the following standards. Measurements shall be taken of the ambient noise level and any alleged offensive noise. If the measurement location is on the boundary of two different noise zones, the lower noise level standard shall apply.

(1) **Sound level meter**. A sound level meter shall mean an instrument meeting the American National Standards Institute's S1.4 - 1971 for Type 1 sound level meters or an instrument and the associated recording and analyzing equipment which will provide equivalent data.

(2) **Ambient noise**. A measurement of the ambient noise level shall be taken according to the procedures in this chapter. If the ambient noise level exceeds the standard, the ambient level shall be the standard. If an alleged intruding noise source is continuous and cannot be reasonably discontinued or stopped for a time period whereby the ambient noise level can be determined, the measured noise level obtained while the alleged intruding noise source is in operation shall be compared directly to the applicable noise level standard.

(G) **Noise studies required**. As referenced in division (C) of this section, there are essentially two different types of noise sources that have been identified in Corona and each has its own noise metrics as well as its own required noise studies. The noise metrics used for transportation related noise sources is the CNEL which is a 24 hour time weighted average noise level. The noise metrics used for stationary sources are defined as noise levels that cannot be exceeded for certain percentages of time.

(1) **Predevelopment noise studies**. A predevelopment noise study is performed prior to development and is designed to project future noise levels and recommend mitigation measures to be implemented in project development. All noise studies shall be prepared by a registered noise engineer as approved by the city. Noise studies will be required for the construction of master planned roadways, for development adjacent to master planned roadways, when a noise generating use, such as a factory, is proposed in proximity to residential uses and when residential uses are proposed in proximity to an existing noise source. The need for a noise study will be determined at development plan review. Predevelopment noise studies shall project future noise levels based on proposed uses, traffic volumes and other relevant future conditions. Existing and projected noise shall be evaluated pursuant to the noise standards within this chapter and the noise element of the General Plan. Mitigation measures shall be proposed to bring noise levels into compliance with these standards. Mitigation measures may consist of

walls, berms, setbacks, landscaping, building materials, construction methods and any other means whereby noise can be reduced to the maximum amounts within this chapter.

(2) **Studies of existing stationary noise**. At times it will be necessary to study the noise generated by an existing source, either due to alleged violations of the noise ordinance or for monitoring purposes. These noise studies shall be prepared by a registered noise engineer as approved by the city in accordance with the standards in Table 1.

### (H) Noise variance.

(1) The owner or operator of a noise or vibration source which violates any of the provisions of this chapter may file an application with the Community Development Department for a variance from the provisions thereof wherein said owner or operator shall set forth all actions taken to comply with the provisions, the reasons why immediate compliance cannot be achieved, a proposed method of achieving compliance and a proposed time schedule for its accomplishment. The application shall be accompanied by a fee as determined by City Council resolution. A separate application shall be filed for each noise source; provided, however, that several fixed sources on a single property may be combined into one application. An application for a variance shall remain subject to prosecution under the terms of this chapter until a variance is granted.

(2) The Board of Zoning Adjustment shall evaluate all applications for variance from the requirements of this chapter and may grant the variances with respect to time for compliance, subject to such terms, conditions and requirements as it may deem reasonable to achieve maximum compliance with the provisions of this chapter. The terms, conditions and requirements may include, but shall not be limited to, limitations on noise levels and operating hours. Each such variance shall set forth in detail the approved method of achieving maximum compliance and a time schedule for its accomplishment. In its determinations, the Board shall consider the following:

- (a) The magnitude of the nuisance caused by the offensive noise;
- (b) The uses of property within the area of impingement by the noise;
- (c) The time factors related to study, design, financing and construction of remedial work;
- (d) The economic factors related to age and useful life of the equipment;
- (e) The general public interest, welfare and safety.

(3) Any variance granted by the Board shall be by resolution and shall be transmitted to the Code Enforcement Officer for enforcement. Any violation of the terms of the variance shall be unlawful and enforced pursuant to division (I) of this section.

# (I) Enforcement.

(1) It shall be unlawful for any person at any location within the City of Corona to create any exterior noise or to allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person, which causes the noise level when measured according to this chapter to exceed the maximum allowable noise levels in Table 1 of § 17.84.040(C).

(2) No person shall interfere with, oppose or resist any authorized person charged with the enforcement of this chapter while such person is engaged in the performance of his or her duty.

(3) Any person violating any provision of this chapter shall be deemed guilty of a misdemeanor.

(4) The operation or maintenance of any device, instrument, vehicle or machinery in violation of any noise standard identified in this chapter is declared to be a public nuisance and may be

abated pursuant to the nuisance abatement procedure in Chapter 8.32 of this code.

(5) Pursuant to § 1.08.020(A) of this code, each person shall be deemed guilty of a separate offense for each and every day during any portion of which any violation of any provision of this chapter is committed, continued or permitted by such person and shall be punished accordingly.

(`78 Code, § 17.84.040.) (Ord. 3277 §§ 4, 5, 2018; Ord. 3188 § 3, 2015; Ord. 2372 § 2, 1999; Ord. 2161 § 1 (part), 1993.)

### 17.84.050 Vibration.

It shall be unlawful for any person to create, maintain or cause any ground vibration which is perceptible without instruments at any point on any affected property adjoining the property on which the vibration source is located. For the purposes of this section, the perception threshold shall be presumed to be more than 0.05 inches per second RMS vertical velocity.

(`78 Code, § 17.84.050.) (Ord. 2161 § 1 (part), 1993.)

### 17.84.060 Dust, smoke, glare – Emission.

The emission of dust, odor, smoke and glare shall conform to the standards established by the South Coast Air Quality Management District. Every use shall be so operated that it does not emit dust, odor, heat or glare in such quantities or degree as to be readily detectable on any boundary line of the lot on which the use is located.

(`78 Code, § 17.84.060.) (Ord. 2161 § 1 (part), 1993.)

### 17.84.070 Glare.

Glare from arc welding, acetylene torch cutting or similar processes shall be performed so as not to be seen from any point beyond the boundary line of the property. All areas of exterior lighting shall be designed to direct light downward with minimal spillover onto adjacent residences, sensitive land uses and open space.

(`78 Code, § 17.84.070.) (Ord. 2161 § 1 (part), 1993.)

### 17.84.080 Underground storage tanks.

Notwithstanding any provision of this code to the contrary, no underground tank for the storage of any type of chemical, gasoline, fuel, oil or other petroleum product shall be constructed within 500 feet of a well owned or operated by the City of Corona which supplies drinking water. Reconstruction or replacement of any underground storage tank, basin, or skimming pond existing within 500 feet of a well supplying drinking water as of the effective date of this chapter shall be subject to the review and approval of the General Manager of the Department of Water and Power, or his or her designee. The General Manager shall require:

(A) Testing of the tank site to ascertain whether contamination exists, and at what depth;

(B) That all testing and analysis be performed in accordance with California Environmental Protection Agency and U.S. Environment Protection Agency standards and methods by a qualified person, with laboratory certification of the test results; and

(C) That the removal or reconstruction of the existing tank and installation of any new tank be undertaken in strict compliance with all applicable federal, state, and local statutes, regulations, standards, and requirements.

(Ord. 2971 § 1 (part), 2009.)

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APPENDIX 5.1:

**STUDY AREA PHOTOS** 



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## JN: 12751 Study Area Photos



,



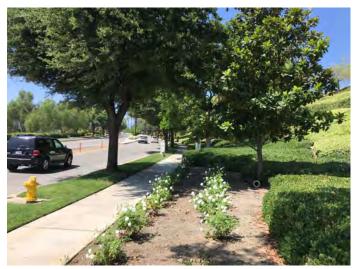
L1\_E 33, 49' 14.440000", 117, 31' 24.540000"



33, 49' 14.210000", 117, 31' 25.420000"



33, 49' 14.330000", 117, 31' 25.720000"



L1\_W 33, 49' 14.360000", 117, 31' 25.360000"



L2 33, 49' 10.790000", 117, 31' 22.320000"

104

L3 33, 48' 53.010000", 117, 31' 6.990000"

L3\_E 33, 48' 53.070000", 117, 31' 6.990000"





L2\_S 33, 49' 10.910000", 117, 31' 22.400000"



33, 49' 10.760000", 117, 31' 22.320000"



L2\_E 33, 49' 10.910000", 117, 31' 22.260000"



L2\_N 33, 49' 10.800000", 117, 31' 22.180000"

JN: 12751 Study Area Photos

## JN: 12751 Study Area Photos



L3\_N 33, 48' 53.010000", 117, 31' 6.990000"



L3\_S 33, 48' 52.950000", 117, 31' 7.210000"



L3\_W 33, 48' 53.060000", 117, 31' 7.540000"



33, 48' 52.900000", 117, 30' 59.160000"



L4\_E 33, 48' 53.030000", 117, 30' 58.940000"



L4\_N 33, 48' 52.430000", 117, 30' 54.330000"

## JN: 12751 Study Area Photos



L4\_S 33, 48' 52.940000", 117, 30' 59.000000"



L4\_W 33, 48' 52.950000", 117, 30' 59.130000"

APPENDIX 5.2:

**NOISE LEVEL MEASUREMENT WORKSHEETS** 



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						24-Ho	ur Noise Le	evel Measu	urement S	ummary						
	Friday, Aug Bedford Ma	-			Location:			of Project site ad near exist	•		Meter:	Piccolo I			JN: Analyst:	12751 P. Mara
							Hourly L <sub>eq</sub> (	dBA Readings	(unadjusted)							
85.0	0															
(V gp) 65.0 65.0 60.0 60.0																
<b>5</b> 70.0						N 0			o	•						
60.0 <b>°۔</b> 55.0 <b>ح</b>	و ال		62.9	65.0	67.7	68.2 67.0	65.5	66.9	66.7	<mark>68</mark>	66.1 67.2		66.5	67.2	66.6	4
<b>A</b> 55.0 <b>J</b> 50.0 <b>O</b> 45.0 40.0	Ď <b>- 1</b>	56.5		61												03
± 40.0																
55.0	0	1 2	3	4 5	6	7 8	9 1	10 11	12 1	3 14	15 16	17	18 19	20	21 22	23
								Hour Be	ginning							
Timeframe	Hour	L <sub>eq</sub>	L max	L min	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L <sub>eq</sub>	Adj.	Adj. L <sub>eq</sub>
	0	61.6 56.5	84.8 81.4	42.1 40.7	73.0 68.0	70.0 65.0	67.0 60.0	64.0 57.0	56.0 50.0	50.0 47.0	45.0 43.0	44.0 42.0	43.0 41.0	61.6 56.5	10.0 10.0	71.6 66.5
	2	59.6	83.5	40.7	69.0	67.0	66.0	65.0	52.0	47.0	45.0 46.0	42.0	41.0	59.6	10.0	69.6
Night	3	62.9	92.5	46.8	72.0	69.0	64.0	60.0	55.0	52.0	49.0	49.0	47.0	62.9	10.0	72.9
	4	61.3	77.2	49.9	72.0	70.0	67.0	66.0	58.0	55.0	52.0	52.0	51.0	61.3	10.0	71.3
	5	65.0	86.2	50.3	76.0	73.0	70.0	69.0	63.0	58.0	54.0	53.0	51.0	65.0	10.0	75.0
	6 7	67.7 68.2	89.1 94.0	52.3 50.7	78.0 78.0	76.0 76.0	72.0 72.0	71.0 71.0	67.0 65.0	61.0 61.0	57.0 56.0	56.0 55.0	55.0 54.0	67.7 68.2	10.0 0.0	77.7 68.2
	8	67.0	86.9	50.1	78.0	75.0	71.0	70.0	65.0	61.0	55.0	54.0	52.0	67.0	0.0	67.0
	9	65.5	81.8	49.8	76.0	73.0	70.0	69.0	64.0	60.0	55.0	54.0	52.0	65.5	0.0	65.5
	10	66.9	89.1	50.3	77.0	75.0	71.0	69.0	65.0	60.0	55.0	54.0	52.0	66.9	0.0	66.9
	11	65.8	86.3	50.3	76.0	74.0	70.0	69.0	64.0	60.0	55.0	55.0	53.0	65.8	0.0	65.8
Day	12 13	66.7 69.8	88.9 97.2	49.8 50.0	78.0 79.0	75.0 75.0	71.0 71.0	69.0 69.0	65.0 65.0	61.0 60.0	55.0 54.0	54.0 53.0	52.0 51.0	66.7 69.8	0.0 0.0	66.7 69.8
	14	68.1	91.4	50.8	78.0	75.0	71.0	69.0	65.0	60.0	55.0	55.0	53.0	68.1	0.0	68.1
	15	66.1	89.2	52.0	74.0	72.0	70.0	69.0	65.0	61.0	56.0	56.0	54.0	66.1	0.0	66.1
	16	67.2	89.2	53.6	79.0	75.0	71.0	69.0	64.0	61.0	57.0	56.0	55.0	67.2	0.0	67.2
	17	66.0	89.5	52.6	76.0	72.0	69.0	68.0	64.0	60.0	56.0	55.0	54.0	66.0	0.0	66.0
	18 19	68.5 66.5	95.5 91.0	51.3 47.4	74.0 77.0	72.0 74.0	69.0 70.0	68.0 68.0	64.0 64.0	60.0 59.0	55.0 54.0	54.0 53.0	52.0 49.0	68.5 66.5	0.0	68.5 71.5
Evening	20	67.2	90.5	49.9	77.0	74.0	70.0	69.0	65.0	59.0	54.0	53.0	49.0 51.0	67.2	5.0	72.2
Ŭ	21	67.4	92.5	48.3	77.0	74.0	71.0	70.0	66.0	60.0	53.0	51.0	50.0	67.4	5.0	72.4
Night	22	66.6	91.4	46.0	76.0	73.0	70.0	69.0	63.0	57.0	51.0	49.0	48.0	66.6	10.0	76.6
_	23	63.4	86.6	45.0	74.0 <b>L1%</b>	72.0	69.0 <b>L5%</b>	67.0 <b>L8%</b>	60.0 <b>L25%</b>	54.0 <b>L50%</b>	48.0 <b>L90%</b>	47.0 <b>L95%</b>	46.0	63.4	10.0 L <sub>eq</sub> (dBA)	73.4
Timeframe	Hour Min	L <sub>eq</sub> 65.5	L <sub>max</sub> 81.8	L <sub>min</sub> 49.8	74.0	72.0	69.0	<b>L8%</b> 68.0	64.0	60.0	<b>190%</b> 54.0	53.0	<i>L99%</i> 51.0			
Day	Max	69.8	97.2	53.6	79.0	76.0	72.0	71.0	65.0	61.0	57.0	56.0	55.0	24-Hour	Daytime	Nighttime
Energy	Average	67.3		rage:	76.9	74.1	70.5	69.1	64.6	60.4	55.3	54.6	52.8	66.3	67.3	63.9
Evening	Min	66.5	90.5	47.4	77.0	74.0	70.0	68.0	64.0	59.0	53.0	51.0	49.0			
Energy	Max Average	67.4 67.1	92.5 Ave	49.9 rage:	77.0 77.0	74.0 74.0	71.0 70.3	70.0 69.0	66.0 65.0	60.0 59.3	54.0 53.7	53.0 52.3	51.0 50.0	24-	Hour CNEL (d	ІВА)
Night	Min	56.5	77.2	40.7	68.0	65.0	60.0	57.0	50.0	47.0	43.0	42.0	41.0		71.4	
	Max	67.7	92.5	52.3	78.0	76.0	72.0	71.0	67.0	61.0	57.0	56.0	55.0		/ 1.4	
Energy	Average	63.9	Ave	rage:	73.1	70.6	67.2	65.3	58.2	53.7	49.4	48.6	47.3			



	24-Hour Noise Level Measurement Summary L2 - Located west of the Project site near existing vacant dirt															
Date:	Friday, Augu	ust 02, 2019			Location	L2 - Located	l west of the	Project site	near existing	vacant dirt	Meter:	Piccolo I				12751
Project:	Bedford Ma	irketplace				101.									Analyst:	P. Mara
							Hourly L <sub>eq</sub>	dBA Readings	(unadjusted)							
05.0	<b>`</b>															
85.0																
<b>8</b> 75.0																
(80.0 75.0 70.0 65.0 65.0 1																
ال 60.0 <b>ح</b>					-					? <u>.</u>			- rù			- u
Δ 55.0 Δ 55.0 50.0 45.0 45.0 40.0	<b>52.1</b>	55.1	55.6	56.5	56.2	57.0 55.8		<mark>55.9</mark> 56.5	56.8	20.2 57.7	<mark>- 29</mark> -	57.2	60.5 55.8	24.3	<mark>54.7</mark> 52.4	58.5
± 40.0 35.0		<u> </u>					<u> </u>	"",						ů.	2 <u>0</u>	
55.0	0	1 2	3	4 5	6	7 8	9 :	10 11	12 1	3 14	15 16	17	18 19	20	21 22	23
									eginning							
Timeframe	Hour	L <sub>eq</sub>	L max	L <sub>min</sub>	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L <sub>eq</sub>	Adj.	Adj. L <sub>eq</sub>
	0	52.1	75.5	43.3	60.0	57.0	54.0	52.0	50.0	48.0	46.0	45.0	44.0	52.1	10.0	62.1
	1	55.1	62.1	44.9	57.0	57.0	56.0	56.0	55.0	55.0	53.0	52.0	46.0	55.1	10.0	65.1
Night	2	56.6 55.6	72.1 67.0	46.2 49.2	70.0 59.0	69.0 58.0	55.0 57.0	53.0 57.0	51.0 56.0	50.0 55.0	48.0 52.0	48.0 51.0	47.0 50.0	56.6 55.6	10.0 10.0	66.6 65.6
MgHt	4	55.0	64.7	49.2 51.3	60.0	59.0	58.0	58.0	56.0	55.0	53.0	53.0	52.0	56.1	10.0	66.1
	5	56.5	63.9	51.4	61.0	60.0	59.0	59.0	57.0	55.0	53.0	52.0	52.0	56.5	10.0	66.5
	6	56.2	66.2	53.1	59.0	59.0	58.0	57.0	56.0	55.0	54.0	54.0	53.0	56.2	10.0	66.2
	7	57.0	70.7	49.1	66.0	64.0	62.0	60.0	56.0	54.0	52.0	51.0	50.0	57.0	0.0	57.0
	8 9	55.8	73.7	49.2	64.0	61.0	59.0 59.0	58.0	55.0	54.0	52.0	51.0 50.0	50.0 49.0	55.8	0.0	55.8
	9 10	55.6 55.9	68.2 65.7	48.0 50.0	63.0 62.0	61.0 61.0	59.0	58.0 57.0	55.0 56.0	54.0 55.0	51.0 53.0	50.0	49.0 51.0	55.6 55.9	0.0 0.0	55.6 55.9
	10	56.5	70.8	52.0	62.0	61.0	60.0	58.0	56.0	55.0	53.0	53.0	53.0	56.5	0.0	56.5
Day	12	56.8	66.7	51.3	63.0	62.0	59.0	58.0	57.0	55.0	54.0	53.0	52.0	56.8	0.0	56.8
Duy	13	58.5	81.8	52.2	64.0	62.0	59.0	58.0	57.0	55.0	54.0	53.0	53.0	58.5	0.0	58.5
	14	57.7	74.4	52.2	65.0	63.0	60.0	59.0	57.0	56.0	54.0	54.0	53.0	57.7	0.0	57.7
	15 16	59.1 58.5	78.4 77.2	52.5 52.6	68.0 65.0	65.0 63.0	62.0 61.0	60.0 60.0	58.0 57.0	56.0 56.0	55.0 55.0	54.0 54.0	53.0 53.0	59.1 58.5	0.0 0.0	59.1 58.5
	17	57.2	77.9	51.5	63.0	61.0	59.0	58.0	56.0	55.0	54.0	53.0	53.0	57.2	0.0	57.2
	18	60.5	86.1	51.3	63.0	61.0	59.0	58.0	56.0	55.0	54.0	53.0	52.0	60.5	0.0	60.5
	19	55.8	71.4	49.8	64.0	63.0	60.0	58.0	55.0	53.0	51.0	51.0	50.0	55.8	5.0	60.8
Evening	20 21	54.3 54.7	72.3 79.2	48.7	61.0 61.0	58.0 59.0	57.0 56.0	56.0 55.0	54.0 53.0	52.0 51.0	51.0 49.0	50.0 49.0	49.0 47.0	54.3 54.7	5.0 5.0	59.3
	21	52.4	79.2	46.2 44.2	62.0	59.0	56.0	54.0	52.0	49.0	49.0	49.0	47.0	52.4	10.0	59.7 62.4
Night	23	58.5	83.0	43.1	72.0	59.0	53.0	52.0	49.0	47.0	45.0	45.0	44.0	58.5	10.0	68.5
Timeframe	Hour	L <sub>eq</sub>	L max	L <sub>min</sub>	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%		L <sub>eq</sub> (dBA)	
Day	Min	55.6	65.7	48.0	62.0	61.0	58.0	57.0	55.0	54.0	51.0	50.0	49.0	24-Hour	Daytime	Nighttime
Energy	Max Average	60.5 57.7	86.1 Ave	52.6 erage:	68.0 64.0	65.0 62.1	62.0 59.8	60.0 58.5	58.0 56.3	56.0 55.0	55.0 53.4	54.0 52.6	53.0 51.8			
	Min	54.3	71.4	46.2	61.0	58.0	56.0	55.0	53.0	51.0	49.0	49.0	47.0	56.8	57.3	55.8
Evening	Max	55.8	79.2	49.8	64.0	63.0	60.0	58.0	55.0	53.0	51.0	51.0	50.0	24	Hour CNEL (	(BA)
Energy	Average	55.0		erage:	62.0	60.0	57.7	56.3	54.0	52.0	50.3	50.0	48.7			
Night	Min Max	52.1 58.5	62.1 83.0	43.1 53.1	57.0 72.0	57.0 69.0	53.0 59.0	52.0 59.0	49.0 57.0	47.0 55.0	45.0 54.0	45.0 54.0	44.0 53.0		62.7	
Energy	Average	55.8		erage:	62.2	59.7	56.2	55.3	53.6	52.1	50.1	49.6	48.1			



Date:	Friday, Aug	ust 02, 2019			Location	L3 - Located	d South of the	e project site	urement S e on Glen Roa xisting reside	ad and North	Meter:	Piccolo I				12751
Project:	Bedford Ma	arketplace				homes.			U						Analyst:	P. Mara
							Hourly L <sub>eq</sub> o	dBA Readings	(unadjusted)							
85.0	3													_		
(Vap) (65.0 (55.0 (65.0 (65.0 (65.0 (60.0)																
65.0 <b>ب</b> 60.0 <b>ت</b>																
<u>ר</u> 55.0 גר 50.0				10 N		<b>4</b> . 0	- oj		6	n	- <u>-</u> ,	4 m	8 4			~
λ 55.0 50.0 45.0 45.0 40.0 35.0	50.9	48.7	53.2	51.6 53.2	53.8	54. 53.		<u>23</u> 53		23.0	2 <mark>3.</mark>	52.	23 <sup>°</sup>	50.7	53.8 53.8	51.2
55.0	0	1 2	3	4 5	6	7 8	9 1	10 11	12 1	3 14	15 10	5 17	18 19	20	21 22	23
									eginning							
Timeframe	Hour 0	<b>L</b> <sub>eq</sub> 50.9	L <sub>max</sub> 66.2	<b>L</b> <sub>min</sub> 45.0	<b>L1%</b> 56.0	<b>L2%</b> 55.0	<b>L5%</b> 54.0	<b>L8%</b> 53.0	<b>L25%</b> 51.0	<b>L50%</b> 50.0	<b>L90%</b> 47.0	<b>L95%</b> 47.0	<b>L99%</b> 46.0	<b>L</b> <sub>eq</sub> 50.9	<b>Adj.</b> 10.0	<b>Adj. L</b> <sub>eq</sub> 60.9
	1	48.7	60.0	45.0	58.0	55.0	54.0	53.0	49.0	48.0	47.0	47.0	46.0	48.7	10.0	58.7
	2	50.2	58.4	45.2	54.0	53.0	52.0	52.0	50.0	49.0	47.0	47.0	46.0	50.2	10.0	60.2
Night	3	53.2	61.7	47.5	59.0	58.0	56.0	55.0	53.0	52.0	50.0	50.0	49.0	53.2	10.0	63.2
	4	51.6	63.5	47.1	56.0	55.0	54.0	53.0	52.0	51.0	49.0	48.0	48.0	51.6	10.0	61.6
	5	53.2 53.8	60.7 69.8	49.0 49.9	56.0 57.0	56.0 56.0	55.0 55.0	54.0 55.0	53.0 54.0	52.0 53.0	51.0 52.0	50.0 51.0	50.0 50.0	53.2 53.8	10.0 10.0	63.2 63.8
	7	54.4	71.7	49.9	62.0	60.0	57.0	56.0	54.0	53.0	51.0	51.0	50.0	54.4	0.0	54.4
	8	53.6	63.4	48.6	60.0	58.0	56.0	55.0	53.0	52.0	51.0	50.0	50.0	53.6	0.0	53.6
	9	53.9	73.1	48.5	60.0	58.0	56.0	56.0	53.0	52.0	50.0	50.0	49.0	53.9	0.0	53.9
	10	53.1	62.2	48.9	57.0	56.0	55.0	54.0	53.0	52.0	51.0	50.0	50.0	53.1	0.0	53.1
	11	53.7	62.3	49.3	58.0	57.0	56.0	55.0	54.0	53.0	51.0	51.0	50.0	53.7	0.0	53.7
Day	12 13	53.9 52.9	63.5 69.8	49.3 48.3	59.0 57.0	58.0 56.0	56.0 55.0	56.0 54.0	54.0 53.0	53.0 52.0	51.0 50.0	51.0 50.0	50.0 49.0	53.9 52.9	0.0 0.0	53.9 52.9
	15	52.9	69.8	48.5	62.0	58.0	55.0	54.0 54.0	52.0	52.0	49.0	49.0	49.0	52.9	0.0	53.0
	15	53.7	67.0	48.6	61.0	58.0	56.0	55.0	53.0	52.0	50.0	50.0	49.0	53.7	0.0	53.7
	16	53.2	62.9	48.4	58.0	57.0	56.0	55.0	53.0	52.0	50.0	50.0	49.0	53.2	0.0	53.2
	17	52.3	63.0	48.2	56.0	55.0	54.0	54.0	52.0	51.0	50.0	50.0	49.0	52.3	0.0	52.3
	18	53.8	63.3	50.4	59.0	57.0	56.0	55.0	54.0	53.0	51.0	51.0	51.0	53.8	0.0	53.8
Evening	19 20	53.4 50.7	64.9 57.7	48.6 47.2	60.0 54.0	58.0 53.0	56.0 52.0	55.0 52.0	53.0 51.0	52.0 50.0	50.0 48.0	50.0 48.0	49.0 47.0	53.4 50.7	5.0 5.0	58.4 55.7
8	20	53.0	65.8	47.0	58.0	57.0	55.0	55.0	53.0	52.0	50.0	49.0	48.0	53.0	5.0	58.0
Night	22	53.8	70.4	48.0	61.0	59.0	56.0	55.0	53.0	52.0	50.0	50.0	49.0	53.8	10.0	63.8
, in the second se	23	51.2	64.5	46.5	56.0	55.0	54.0	53.0	51.0	50.0	48.0	48.0	47.0	51.2	10.0	61.2
Timeframe	Hour Min	L <sub>eq</sub> 52.3	L <sub>max</sub> 62.2	L <sub>min</sub> 47.5	L1% 56.0	<b>L2%</b> 55.0	<b>L5%</b> 54.0	<i>L8%</i> 54.0	L25% 52.0	<i>L50%</i> 51.0	<b>L90%</b> 49.0	<b>L95%</b> 49.0	<b>L99%</b> 48.0		L <sub>eq</sub> (dBA)	
Day	Max	54.4	73.1	50.4	62.0	60.0	57.0	56.0	54.0	53.0	49.0 51.0	49.0 51.0	48.0 51.0	24-Hour	Daytime	Nighttime
Energy	Average	53.5	Ave	erage:	59.1	57.3	55.7	54.9	53.2	52.2	50.4	50.3	49.5	52.9	53.3	52.1
Evening	Min	50.7	57.7	47.0	54.0	53.0	52.0	52.0	51.0	50.0	48.0	48.0	47.0			
Ŭ	Max	53.4	65.8	48.6	60.0	58.0	56.0	55.0	53.0	52.0	50.0	50.0	49.0	24-	-Hour CNEL (d	dBA)
Energy	Average Min	52.5 48.7	58.4	erage: 43.5	57.3 53.0	56.0 52.0	54.3 51.0	54.0 50.0	52.3 49.0	51.3 48.0	49.3 46.0	49.0 46.0	48.0 45.0			
Night	Max	53.8	70.4	49.9	61.0	59.0	56.0	55.0	49.0 54.0	53.0	52.0	51.0	50.0		59.0	
Energy	Average	52.1		erage:	56.4	55.4	54.1	53.3	51.8	50.8	48.9	48.6	47.8			



	Friday, Aug Bedford Ma				Location	, L4 -Located	ur Noise Lo I southeast o idential hom	f the Project es and vacar	site on Glen	'	Meter:	Piccolo I				12751 P. Mara
95.0	2						Houriy L <sub>eq</sub>	ива кейитуs	(unaajustea)							
85.0 80.0 75.0 70.0 65.0 - - - - - - - - - - - - - - - - - - -																
► 55.0 50.0 0 45.0 40.0	<b>48.6</b>	46.0 47.7	50.2	50.2 50.7	50.2	49.0 47.6	47.7	48.0 49.5	49.7	<b>50.2</b>	50.6 51.1		52.0 50.3	47.7	<mark>49.6</mark> 49.4	47.1
35.0	+ + C 0	1 2	3	4 5	6	7 8	9 :	10 11	12 1	3 14	15 16	5 17	18 19	20	21 22	23
	0		Ū		Ū	. 0	<u> </u>		eginning		10 10		10 15			
Timeframe	Hour	L <sub>eq</sub>	L max	L <sub>min</sub>	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L <sub>eq</sub>	Adj.	Adj. L <sub>eq</sub>
	01	48.6 46.0	55.6 55.6	43.2 41.9	53.0 50.0	53.0 49.0	52.0 48.0	51.0 48.0	49.0 46.0	47.0 45.0	45.0 43.0	45.0 43.0	44.0 42.0	48.6 46.0	10.0 10.0	58.6 56.0
	2	40.0	57.6	43.5	51.0	51.0	50.0	49.0	48.0	43.0	45.0	45.0	44.0	40.0	10.0	57.7
Night	3	50.2	63.4	45.5	54.0	53.0	52.0	52.0	50.0	49.0	47.0	47.0	46.0	50.2	10.0	60.2
	4	50.2	65.0	44.8	55.0	54.0	53.0	53.0	50.0	48.0	47.0	46.0	45.0	50.2	10.0	60.2
	5 6	50.7 50.2	68.9 63.0	46.8 43.7	54.0 55.0	53.0 53.0	52.0 52.0	52.0 52.0	51.0 51.0	50.0 49.0	48.0 46.0	48.0 46.0	47.0 44.0	50.7 50.2	10.0 10.0	60.7 60.2
	7	49.0	65.2	43.7	55.0	56.0	53.0	52.0	48.0	49.0	48.0	40.0	44.0	49.0	0.0	49.0
	8	47.6	64.0	41.8	58.0	55.0	50.0	49.0	46.0	44.0	43.0	43.0	42.0	47.6	0.0	47.6
	9	47.7	68.4	40.7	57.0	55.0	52.0	50.0	46.0	44.0	42.0	42.0	42.0	47.7	0.0	47.7
	10	48.0	62.4	43.0	55.0	52.0	50.0	49.0	48.0	47.0	45.0	45.0	43.0	48.0	0.0	48.0
	11	49.5	64.5	44.4	57.0	55.0	53.0	52.0	49.0	47.0	46.0	45.0	45.0	49.5	0.0	49.5
Day	12 13	49.7 48.9	66.3 66.5	44.3 44.2	57.0 54.0	56.0 52.0	53.0 51.0	51.0 50.0	49.0 49.0	48.0 48.0	46.0 46.0	45.0 45.0	45.0 45.0	49.7 48.9	0.0 0.0	49.7 48.9
	13	50.2	69.7	44.3	59.0	56.0	52.0	51.0	49.0	48.0	46.0	45.0	45.0	50.2	0.0	50.2
	15	50.6	64.2	44.9	58.0	55.0	53.0	52.0	50.0	49.0	47.0	47.0	46.0	50.6	0.0	50.6
	16	51.1	64.4	46.6	57.0	56.0	54.0	53.0	51.0	50.0	48.0	48.0	47.0	51.1	0.0	51.1
	17	49.8	62.2	45.6	54.0	53.0	51.0	51.0	50.0	49.0	48.0	47.0	47.0	49.8	0.0	49.8
	18 19	52.0 50.3	72.1 62.8	47.4 45.8	58.0 57.0	56.0 55.0	54.0 53.0	53.0 52.0	51.0 50.0	50.0 49.0	49.0 47.0	48.0 47.0	48.0 46.0	52.0 50.3	0.0	52.0 55.3
Evening	20	47.7	58.4	45.8 42.1	57.0	55.0	53.0	49.0	48.0	49.0 47.0	47.0	47.0	46.0	50.3 47.7	5.0	55.3
- 0	21	49.6	58.4	43.5	53.0	52.0	51.0	51.0	50.0	49.0	47.0	46.0	45.0	49.6	5.0	54.6
Night	22	49.4	60.3	45.3	53.0	52.0	51.0	51.0	50.0	48.0	47.0	46.0	46.0	49.4	10.0	59.4
, in the second se	23	47.1	53.6	41.1	51.0	51.0	50.0	49.0	47.0	46.0	44.0	44.0	43.0	47.1	10.0	57.1
Timeframe	Hour Min	L <sub>eq</sub> 47.6	L <sub>max</sub> 62.2	L <sub>min</sub> 40.7	<b>L1%</b> 54.0	<b>L2%</b> 52.0	<b>L5%</b> 50.0	<b>L8%</b>	<b>L25%</b> 46.0	<b>L50%</b> 44.0	<b>L90%</b> 42.0	<b>L95%</b> 42.0	<b>L99%</b> 42.0		L <sub>eq</sub> (dBA)	
Day	Max	52.0	72.1	40.7	54.0 59.0	52.0	50.0	49.0 53.0	46.0 51.0	44.0 50.0	42.0	42.0	42.0	24-Hour	Daytime	Nighttime
Energy	Average	49.7		erage:	56.8	54.8	52.2	51.0	48.8	47.5	45.8	45.3	44.8	49.5	10 C	10 2
Evening	Min	47.7	58.4	42.1	52.0	51.0	50.0	49.0	48.0	47.0	45.0	44.0	43.0		49.6	49.2
	Max	50.3	62.8	45.8	57.0	55.0	53.0	52.0	50.0	49.0	47.0	47.0	46.0	24-	Hour CNEL (d	dBA)
Energy	Average Min	49.3 46.0	Av 53.6	erage: 41.1	54.0 50.0	52.7 49.0	51.3 48.0	50.7 48.0	49.3 46.0	48.3 45.0	46.3 43.0	45.7 43.0	44.7 42.0	4		
Night	Max	46.0 50.7	53.6 68.9	41.1 46.8	50.0 55.0	49.0 54.0	48.0 53.0	48.0 53.0	46.0 51.0	45.0 50.0	43.0 48.0	43.0 48.0	42.0		55.9	
Energy	Average	49.2		erage:	52.9	52.1	51.1	50.8	49.1	47.7	45.8	45.6	44.6	<u> </u>		



APPENDIX 7.1:

**OFF-SITE TRAFFIC NOISE LEVEL CONTOURS** 



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	FHW	/A-RD-77-108 HI	GHWAY I	NOISE PF	REDICTIO	N MODEL		
Road Nam	io: Existing e: Masters Dr. ηt: n/o Californi	a Av.				ame: Bedfo nber: 1275	ord Marketpla 1	ce
SITE	SPECIFIC IN	PUT DATA			NO	ISE MOD	EL INPUTS	
Highway Data				Site Con	ditions (H	lard = 10, S	Goft = 15)	
	Traffic (Adt): Percentage: our Volume:	4,452 vehicles 10% 445 vehicles				Autos ks (2 Axles) s (3+ Axles)	: 15	
Vel	hicle Speed:	40 mph	ŀ	Vehicle	Mix			
Near/Far Lar	ne Distance:	14 feet	ŀ		icleType	Dav	Evening	Night Dailv
Site Data				1011		tos: 77.5	•	9.6% 97.42%
Par	rier Heiaht:	0.0 feet		Me	edium Truc	cks: 84.8	% 4.9%	10.3% 1.84%
Barrier Type (0-W		0.0		ŀ	leavy Truc	cks: 86.59	% 2.7%	10.8% 0.74%
Centerline Dis	t. to Barrier:	34.0 feet	ľ	Noise So	ource Elev	ations (in	feet)	
Centerline Dist. t	to Observer:	34.0 feet			Autos:	0.000		
Barrier Distance t		0.0 feet		Mediu	m Trucks:	2.297		
Observer Height (/	Above Pad): ad Elevation:	5.0 feet 0.0 feet		Heav	y Trucks:	8.006	Grade Adju	stment: 0.0
	d Elevation:	0.0 feet	-	Lane Ea	uivalent D	istance (in	feet)	
	Road Grade:	0.0%			Autos:	33.645		
	Left View:	-90.0 degrees		Mediu	m Trucks:	33.381		
	Right View:	90.0 degrees		Heav	y Trucks:	33.407		
FHWA Noise Mode	el Calculations	;						
VehicleType	REMEL	Traffic Flow	Distance	Finite	Road	Fresnel	Barrier Atte	n Berm Atten
Autos:	66.51	-4.95	2.4	8	-1.20	-4.53	0.00	0.000
Medium Trucks:	77.72	-22.19	2.5	-	-1.20	-4.86		
Heavy Trucks:	82.99	-26.15	2.5	-	-1.20	-5.67	0.00	0.000
Unmitigated Noise						1		
	Leq Peak Hour			vening	Leq Ni	5	Ldn	CNEL
Autos:	62.			59.2		53.1	61.7	62.3
Medium Trucks:	56.			49.0		47.4	55.9	56.1
Heavy Trucks: Vehicle Noise:	58. 64			47.7 59.8		49.0 55.3	57.3 63.8	57.4
Centerline Distand	01.	0 00		59.0		55.5	03.0	04.0
Centernile Distant	e to Noise Co	ntour (in feet)	70	dBA	65 dE	A	60 dBA	55 dBA
		I d		13	28	· ·	61	132
		CNE		14	30		66	141
		0.112		••	50			

FHWA-RD-77-108	HIGHW	AY NOI	SE PREDICT	ION MOD	EL		_	
Scenario: Existing			Projec	t Name: B	edford	d Marketpla	ace	
Road Name: Masters Dr.			Job I	lumber: 1	2751			
Road Segment: s/o California Av.								
SITE SPECIFIC INPUT DATA							5	
Highway Data		Site	e Conditions	: (Hard = 1	10, So	ft = 15)		
Average Daily Traffic (Adt): 9,364 vehicles	6			A	utos:	15		
Peak Hour Percentage: 10%			Medium Tr	ucks (2 A	des):	15		
Peak Hour Volume: 936 vehicles	6		Heavy Tru	cks (3+ A)	kles):	15		
Vehicle Speed: 40 mph		Vol	nicle Mix					
Near/Far Lane Distance: 14 feet		ver	VehicleTyp	- /	Dav	Evening	Night	Daily
Site Data			,,		7.5%	12.9%	9.6%	
Barrier Height: 0.0 feet			Medium T	rucks: 8	4.8%	4.9%	10.3%	1.849
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0			Heavy 1	rucks: 8	6.5%	2.7%	10.8%	0.749
Centerline Dist. to Barrier: 34.0 feet								
Centerline Dist. to Observer: 34.0 feet		Noi	ise Source E	levations	(in fe	et)		
Barrier Distance to Observer: 0.0 feet			Auto					
Observer Height (Above Pad): 5.0 feet		٨	Aedium Truck	(s: 2.2	97			
Pad Elevation: 0.0 feet			Heavy Truck	(s: 8.0	06	Grade Adj	ustment	0.0
Road Elevation: 0.0 feet		Lar	ne Equivaler	t Distanc	o (in f	oot)		
Road Grade: 0.0%		Lai	Auto					
Left View: -90.0 degree			Auto Nedium Truck					
		~	Heavy Truck					
Right View: 90.0 degree	s		neavy nuci	.3. 33.4	07			
FHWA Noise Model Calculations								
VehicleType REMEL Traffic Flow	Distar		Finite Road	Fresne		Barrier Atte		m Atten
Autos: 66.51 -1.72		2.48	-1.20		4.53	0.0		0.00
Medium Trucks: 77.72 -18.96		2.53	-1.20		4.86	0.0		0.00
Heavy Trucks: 82.99 -22.92		2.52	-1.20	-	5.67	0.0	00	0.00
Unmitigated Noise Levels (without Topo and								
VehicleType Leq Peak Hour Leq Day		eq Even		Night		Ldn		NEL
	64.2		62.4	56.3		65.0		65.
	58.6		52.2	50.7		59.1		59.4
	60.0		50.9	52.2		60.5		60.
Vehicle Noise: 68.1	66.4		63.1	58.5		67.1		67.
Centerline Distance to Noise Contour (in feet	)							
		70 dBA		dBA	6	0 dBA		dBA
	I dn:	22		47		101	2	17
	VFL:	23		50		108	-	32

		VA-RD-77-108 H	A IIIIA							
	o: Existing							d Marketpla	ace	
	e: Masters Dr				Job N	umber: 1	2751			
Road Segmer	nt: n/o Bennet	Av.								
	SPECIFIC IN	IPUT DATA						L INPUTS	5	
Highway Data				Site Cor	nditions	(Hard = 1	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	6,000 vehicles				A	utos:	15		
Peak Hour	Percentage:	10%		Me	edium Tru	icks (2 A)	des):	15		
Peak H	our Volume:	600 vehicles		He	avy Truc	:ks (3+ A)	des):	15		
Vei	hicle Speed:	40 mph		Vehicle	Mix					
Near/Far Lai	ne Distance:	14 feet			nicleType	1	Day	Evening	Night	Daily
Site Data							7.5%	~		97.429
Bai	rier Height:	0.0 feet		М	ledium Ti	rucks: 8	4.8%	4.9%	10.3%	1.849
Barrier Type (0-W	•	0.0			Heavy T	rucks: 8	6.5%	2.7%	10.8%	0.74%
Centerline Dis		34.0 feet		Noise S	ource F	evations	(in fe	pet)		
Centerline Dist.	to Observer:	34.0 feet			Auto					
Barrier Distance	to Observer:	0.0 feet		Modiu	m Truck					
Observer Height (J	Above Pad):	5.0 feet			vv Truck			Grade Adj	ustment	· 0.0
Pa	ad Elevation:	0.0 feet		nea	vy much	3. 0.0	00	orado riaji	aounom	0.0
Roa	ad Elevation:	0.0 feet		Lane Eq	uivalen	Distanc	e (in i	feet)		
I	Road Grade:	0.0%			Auto					
	Left View:	-90.0 degrees	5		m Truck					
	Right View:	90.0 degrees	5	Hea	vy Truck	s: 33.4	07			
FHWA Noise Mod	el Calculation	s								
VahialaTuns	REMEL	Traffic Flow	Distance	e Finite	Road	Fresne	*	Barrier Atte	en Bei	m Atten
VehicleType							1 50	0.0	00	0.00
Venicle i ype Autos:	66.51	-3.66	2	2.48	-1.20	-	4.53	0.0	00	
	66.51 77.72	-3.66 -20.90		2.48 2.53	-1.20 -1.20		4.53 4.86	0.0		0.00
Autos:			2			-			00	
Autos: Medium Trucks:	77.72 82.99	-20.90 -24.85	2	2.53 2.52	-1.20	-	4.86	0.0	00	
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise	77.72 82.99	-20.90 -24.85 out Topo and b	2 2 arrier att	2.53 2.52	-1.20 -1.20	-	4.86	0.0	00	
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise	77.72 82.99 A Levels (with	-20.90 -24.85 out Topo and b r Leq Day	2 2 arrier att	2.53 2.52 <b>enuation)</b>	-1.20 -1.20 Leq	-	4.86	0.0	00 00 C	0.00
Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Noise</b> VehicleType	77.72 82.99 E Levels (with Leg Peak Hou	-20.90 -24.85 out Topo and b r Leq Day .1 6:	2 2 arrier att Leq	2.53 2.52 enuation) Evening	-1.20 -1.20 <i>Leq</i>	Night	4.86	0.0 0.0 Ldn	00 00 C	0.00 NEL 63.
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos:	77.72 82.99 E Levels (with Leq Peak Hou 64	-20.90 -24.85 out Topo and b r Leq Day .1 6: .1 5	2 2 arrier att Leq 2.2	2.53 2.52 Eenuation) Evening 60.5	-1.20 -1.20 Leq	- Night 54.4	4.86	0.0 0.0 <i>Ldn</i> 63.0	00 00 C	0.00 NEL 63. 57.
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks:	77.72 82.99 2 Levels (with Leg Peak Hou 64 58	-20.90 -24.85 <b>out Topo and b</b> rr Leq Day .1 6: .1 50 .5 50	2 2 arrier att Leq 2.2 6.6	2.53 2.52 Evening 60.5 50.3	-1.20 -1.20 Leq		4.86	0.0 0.0 <i>Ldn</i> 63.0 57.2	00 00 C	0.00 NEL 63. 57. 58.
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noiss VehicleType Autos: Medium Trucks: Heavy Trucks:	77.72 82.99 2 Levels (with Leg Peak Hou 64 58 59 66	-20.90 -24.85 <b>Dut Topo and b</b> rr Leq Day .1 65 .5 56 .2 6	2 2 arrier att Leq 2.2 6.6 8.0	2.53 2.52 Evening 60.5 50.3 49.0	-1.20 -1.20 Leq	Night 54.4 48.7 50.3	4.86	0.0 0.0 0.0 57.2 58.6	00 00 C	0.00 NEL 63. 57. 58.
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	77.72 82.99 2 Levels (with Leg Peak Hou 64 58 59 66	-20.90 -24.85 <b>Dut Topo and b</b> rr Leq Day .1 65 .5 56 .2 6	2 arrier att Leq 2.2 6.6 8.0 4.4	2.53 2.52 Evening 60.5 50.3 49.0	-1.20 -1.20 Leq	Night 54.4 48.7 50.3	4.86	0.0 0.0 0.0 57.2 58.6	00 00 C.	0.00 NEL 63. 57. 58.
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	77.72 82.99 2 Levels (with Leg Peak Hou 64 58 59 66	-20.90 -24.85 <b>Dut Topo and b</b> rr Leq Day 1. 6: 5.5 5.5 2.6 <b>Contour (in feet)</b>	2 arrier att Leq 2.2 6.6 8.0 4.4	2.53 2.52 Evening 60.5 50.3 49.0 61.1	-1.20 -1.20 Leq 65	Night 54.4 48.7 50.3 56.6	4.86	0.0 0.0 <u>Ldn</u> 63.0 57.2 58.6 65.1	00 00 00 C.	63.0 57.4 58.0 65.0

	FRV	VA-RD-77-108	HIGHV	NAY N	IOISE PF	REDICTI	ON MODE	iL.			
Road Nan	rio: Existing ne: Masters Dr ent: n/o Eagle C						Name: Be umber: 12		l Marketpl	ace	
SITE	SPECIFIC IN	IPUT DATA				N	IOISE MO	DEL		5	
Highway Data					Site Con	ditions	(Hard = 10	), Soi	ft = 15)		
Average Daily	Traffic (Adt):	5,466 vehicle	s				AL	tos:	15		
Peak Hour	Percentage:	10%			Me	dium Tru	icks (2 Axi	es):	15		
Peak H	our Volume:	547 vehicle	s		He	avy Truc	ks (3+ Ax	es):	15		
Ve	hicle Speed:	40 mph		H	Vehicle I	Mix					
Near/Far La	ne Distance:	14 feet		-		icleType		aγ	Evening	Night	Daily
Site Data					Ven			_y 1.5%	12.9%		97.42%
					Me	, edium Ti		.8%	4.9%	10.3%	
	rrier Height:	0.0 feet				leavy Ti		6.5%	2.7%	10.8%	
Barrier Type (0-W Centerline Di		0.0				,				10.070	0.117.
Centerline Dist.		34.0 feet 34.0 feet		1	Noise So	ource El	evations (	'in fe	et)		
Barrier Distance		0.0 feet				Auto	s: 0.00	0			
Observer Height		5.0 feet			Mediur	n Truck	s: 2.29	7			
	ad Flevation:	0.0 feet			Heav	y Truck	s: 8.00	6 (	Grade Adj	ustment	: 0.0
	ad Elevation: ad Elevation:	0.0 feet		E.	l ane Fo	uivalen	Distance	(in fi	eet)		
	Road Grade:	0.0%		H	Lano Lq	Auto			001)		
	Left View:	-90.0 degree	20		Modiu	n Truck					
	Right View:	90.0 degree				v Truck					
	rugin rion.	00.0 00910				,					
FHWA Noise Mod	lel Calculation	s									
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite		Fresnel		Barrier Atte		rm Atten
VehicleType Autos:	REMEL 66.51	Traffic Flow -4.06		2.4	8	-1.20	-4	.53	0.0	00	0.000
VehicleType Autos: Medium Trucks:	REMEL 66.51 77.72	Traffic Flow -4.06 -21.30		2.4 2.5	8	-1.20 -1.20	-4 -4	.53 .86	0.0 0.0	100 100	0.000
VehicleType Autos:	REMEL 66.51 77.72	Traffic Flow -4.06		2.4	8	-1.20	-4 -4	.53	0.0	100 100	0.000
VehicleType Autos: Medium Trucks: Heavy Trucks:	REMEL 66.51 77.72 82.99	Traffic Flow -4.06 -21.30 -25.26		2.4 2.5 2.5	8 3 2	-1.20 -1.20	-4 -4	.53 .86	0.0 0.0	100 100	0.000
VehicleType Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Nois</b> VehicleType	REMEL 66.51 77.72 82.99 <b>e Levels (with</b> Leq Peak Hou	Traffic Flow           -4.06           -21.30           -25.26           out Topo and           Ir         Leq Day	barriei	2.4 2.5 2.5 <b>r atten</b>	8 3 2 nuation) ivening	-1.20 -1.20 -1.20	-4 -4 -5 Night	.53 .86 .67	0.0 0.0 0.0 Ldn	00 00 00 <i>C</i>	0.000 0.000 0.000 NEL
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos:	REMEL 66.51 77.72 82.99 e Levels (with Leg Peak Hou 63	Traffic Flow           -4.06           -21.30           -25.26           out Topo and           ir         Leq Day           .7	<i>barrier</i> / 61.8	2.4 2.5 2.5 <b>r atten</b>	8 3 2 <i>nuation)</i> <i>vening</i> 60.1	-1.20 -1.20 -1.20	-4 -4 -5 Night 54.0	.53 .86 .67	0.0 0.0 0.0 <i>Ldn</i> 62.6	00 00 00 C	0.000 0.000 0.000 NEL 63.2
VehicleType Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Nois</b> VehicleType	REMEL 66.51 77.72 82.99 e Levels (with Leg Peak Hou 63 57	Traffic Flow           -4.06           -21.30           -25.26           out Topo and           Ir         Leq Day           .7           .7	<i>barriei</i> / 61.8 56.2	2.4 2.5 2.5 <b>r atten</b>	8 3 2 <i>nuation)</i> <i>ivening</i> 60.1 49.9	-1.20 -1.20 -1.20	-4 -4 -5 Night 54.0 48.3	.53 .86 .67	0.0 0.0 0.0 Ldn 62.6 56.8	00 00 00 C	0.000 0.000 0.000 NEL 63.2 57.0
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos:	REMEL 66.51 77.72 82.99 e Levels (with Leg Peak Hou 63 57	Traffic Flow           -4.06           -21.30           -25.26           out Topo and           Ir         Leq Day           .7           .7	<i>barrier</i> / 61.8	2.4 2.5 2.5 <b>r atten</b>	8 3 2 <i>nuation)</i> <i>vening</i> 60.1	-1.20 -1.20 -1.20	-4 -4 -5 Night 54.0	.53 .86 .67	0.0 0.0 0.0 <i>Ldn</i> 62.6	00 00 00 C	0.000 0.000 0.000 NEL 63.2 57.0
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks:	REMEL 66.51 77.72 82.99 e Levels (with Leg Peak Hou 63 57 59	Traffic Flow           -4.06           -21.30           -25.26           out Topo and           rr         Leq Day           .7           .7           .1	<i>barriei</i> / 61.8 56.2	2.4 2.5 2.5 <b>r atten</b>	8 3 2 <i>nuation)</i> <i>ivening</i> 60.1 49.9	-1.20 -1.20 -1.20	-4 -4 -5 Night 54.0 48.3	.53 .86 .67	0.0 0.0 0.0 Ldn 62.6 56.8		0.000 0.000 0.000 NEL 63.2 57.0 58.3
VehicleType Autos: Medium Trucks: Heavy Trucks: Unnitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	REMEL 66.51 77.72 82.99 e Levels (with Leq Peak Hou 63 57 59 65	Traffic Flow           -4.06           -21.30           -25.26           Out Topo and           rr           Leq Day           .7           .7           .8	barrier 61.8 56.2 57.6 64.0	2.4 2.5 2.5 r atten Leq E	8 3 2 <i>ivening</i> 60.1 49.9 48.6 60.7	-1.20 -1.20 -1.20 <i>Leq</i>	-4 -4 -5 Night 54.0 48.3 49.9 56.2	.53 .86 .67	0.0 0.0 0.0 <u>Ldn</u> 62.6 56.8 58.2 64.7	000 000 000 000 C	0.000 0.000 0.000 NEL 63.2 57.0 58.3 65.2
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noiss VehicleType Autos: Medium Trucks: Heavy Trucks:	REMEL 66.51 77.72 82.99 e Levels (with Leq Peak Hou 63 57 59 65	Traffic Flow           -4.06           -21.30           -25.26           Out Topo and           Ir         Leq Day           .7           .1           .8           ontour (in feet)	barrier 61.8 56.2 57.6 64.0	2.4 2.5 2.5 r atten Leq E	8 3 2 2 <u>vening</u> 60.1 49.9 48.6 60.7 dBA	-1.20 -1.20 -1.20 Leq	-4 -4 -5 -5 -5 -5 -5 -5 -5 -5 -5 -2 	.53 .86 .67	0.0 0.0 0.0 62.6 56.8 58.2 64.7 0 dBA	000 000 000 C 3 3 5 5 5 5 5	0.000 0.000 0.000 NEL 63.2 57.0 58.3 65.2
VehicleType Autos: Medium Trucks: Heavy Trucks: Unnitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	REMEL 66.51 77.72 82.99 e Levels (with Leq Peak Hou 63 57 59 65	Traffic Flow           -4.06           -21.30           -25.26           out Topo and           r           L           .7           .7           .8           Dontour (in feet)	barrier 61.8 56.2 57.6 64.0	2.4 2.5 2.5 r atten Leq E	8 3 2 <i>ivening</i> 60.1 49.9 48.6 60.7	-1.20 -1.20 -1.20 <i>Leq</i> 65	-4 -4 -5 Night 54.0 48.3 49.9 56.2	.53 .86 .67	0.0 0.0 0.0 <u>Ldn</u> 62.6 56.8 58.2 64.7	000 000 000 000 000 000 000	0.000 0.000 0.000 NEL 63.2 57.0 58.3 65.2

Friday, November 22, 2019

Friday, November 22, 2019

FH\	WA-RD-77-108	HIGHWA	Y NO	DISE PR	EDICTI	ON MO	DEL			
Scenario: Existing Road Name: Bedford C Road Segment: s/o El Cerr	,					Name: E Imber: 1		d Marketpl	ace	
SITE SPECIFIC I	NPUT DATA							L INPUT	s	
Highway Data			S	ite Con	ditions (	'Hard =	10, So	oft = 15)		
Average Daily Traffic (Adt): Peak Hour Percentage: Peak Hour Volume:	7,800 vehicles 10% 780 vehicles				dium Tru avy Truc	cks (2 A	/	15 15 15		
Vehicle Speed:	40 mph		V	ehicle I	Niv					
Near/Far Lane Distance:	24 feet		-		cleType		Dav	Evening	Night	Daily
Site Data				1011			77.5%	•	9.6%	
Barrier Height:	0.0 feet			Me	dium Tr	ucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm):	0.0			ŀ	leavy Tr	ucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier:	38.0 feet		N	oise So	urce Ele	evations	s (in fe	et)		
Centerline Dist. to Observer:	38.0 feet				Autos	: 0.0	000	,		
Barrier Distance to Observer:	0.0 feet			Mediur	n Trucks	: 2.2	297			
Observer Height (Above Pad): Pad Elevation:	5.0 feet 0.0 feet			Heav	y Trucks	: 8.0	006	Grade Adj	iustment	: 0.0
Road Elevation:	0.0 feet		L	ane Ea	uivalent	Distand	e (in t	feet)		
Road Grade:	0.0%				Autos			,		
Left View:	-90.0 degree	e.		Mediur	n Trucks					
Right View:	90.0 degree			Heav	y Trucks					
FHWA Noise Model Calculation	IS									
VehicleType REMEL	Traffic Flow	Distan	ce	Finite	Road	Fresn	el .	Barrier Att	en Be	rm Atten
Autos: 66.51	-2.52		1.96		-1.20		-4.57	0.0	000	0.000
Medium Trucks: 77.72			2.01		-1.20		-4.87		000	0.000
Heavy Trucks: 82.99	-		2.00		-1.20		-5.59	0.0	000	0.000
Unmitigated Noise Levels (with										
VehicleType Leq Peak Ho			q Eve	~	Leq I			Ldn		NEL
		62.9		61.1		55.0		63.7		64.3
		57.3		50.9		49.4		57.8	-	58.0
		58.7		49.6		50.9		59.2	-	59.4
		65.0		61.8		57.2		65.8	3	66.2
Centerline Distance to Noise C	ontour (in feet,	)	70 dl	за	65 0	IBA	6	0 dBA	55	dBA
		Ldn:	20		4			92		198
		VEL:	21		4	-		98		212

	FHW	/A-RD-77-108	HIGH	WAY NO	DISE PREDI	CTION M	ODEL			
	o: Existing e: Bedford Cyr	a Rd				ect Name Numbe		rd Marketpl	ace	
	nt: n/o George				50	TNUITIDEI	. 1275			
	SPECIFIC IN	PUT DATA						EL INPUT	s	
Highway Data				S	ite Conditio	ns (Hard	= 10, S	oft = 15)		
Average Daily	Traffic (Adt):	8,926 vehicles	\$				Autos	: 15		
Peak Hour	Percentage:	10%			Medium	Trucks (2	Axles)	: 15		
Peak H	our Volume:	893 vehicles	3		Heavy	rucks (3-	Axles)	: 15		
Ve	hicle Speed:	40 mph		V	ehicle Mix					
Near/Far Lai	ne Distance:	24 feet			VehicleT	me	Dav	Evening	Night	Daily
Site Data					10110101	Autos:		•	9.6%	
	rier Heiaht:	0.0 feet			Mediur	Trucks:	84.89		10.3%	
Barrier Type (0-W		0.0 reet 0.0				Trucks:			10.8%	
Centerline Dis	. ,	38.0 feet		L						
Centerline Dist.		38.0 feet		N	loise Source			feet)		
Barrier Distance		0.0 feet					0.000			
Observer Height (		5.0 feet			Medium Tri		2.297			
0,1	d Flevation:	0.0 feet			Heavy Tri	icks:	8.006	Grade Adj	ustment	: 0.0
	d Elevation:	0.0 feet		L	ane Equiva	ent Dista	nce (in	feet)		
	Road Grade:	0.0%		-			6.401	,		
,	Left View:	-90.0 degree			Medium Tri		6.157			
	Right View:	90.0 degree			Heavy Tr		6.181			
FHWA Noise Mod	el Calculation									
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite Roa		snel	Barrier Att		m Atten
Autos:	66.51	-1.93		1.96	-1.	20	-4.57	0.0	000	0.00
Medium Trucks:	77.72	-19.17		2.01			-4.87		000	0.00
Heavy Trucks:	82.99	-23.13		2.00	-1.	20	-5.59	0.0	000	0.00
Unmitigated Noise	e Levels (with	out Topo and	barrie	er attenu	uation)					
VehicleType	Leq Peak Hou			Leq Eve	0	eq Night		Ldn		NEL
Autos:	65		63.4		61.7		5.6	64.2	-	64.
Medium Trucks:	59		57.8		51.5		9.9	58.4		58.
Heavy Trucks:	60.		59.2		50.2		1.5	59.8		59.
Vehicle Noise:	67.		65.6		62.3	5	7.8	66.3	3	66.
Centerline Distand	e to Noise Co	ntour (in feet	)							
			L	70 dł		65 dBA		60 dBA		dBA
			Ldn:	22		47		101	2	17
		-	VFI :	23		50		108		32

Friday, November 22, 2019

	FHV	VA-RD-77-108	HIGHW	AY N	OISE PR	EDICTIC	N MOI	DEL			
Scenar	io: Existing					Project N	lame: I	Bedfor	d Marketpla	ace	
Road Nam	e: Bedford Cy	n. Rd.				Job Nu	mber:	12751			
Road Segme	nt: n/o Eagle C	Blen Pkwy.									
	SPECIFIC IN	IPUT DATA							L INPUTS	;	
Highway Data				1	Site Con	ditions (l	lard =	10, Se	oft = 15)		
Average Daily	Traffic (Adt):	8,088 vehicle	s					Autos:			
Peak Hour	Percentage:	10%				dium Truc					
Peak H	our Volume:	809 vehicle	s		Hea	avy Truck	's (3+ A	xles):	15		
Ve	hicle Speed:	40 mph			Vehicle N	Nix					
Near/Far La	ne Distance:	24 feet		F	Vehi	cleType		Day	Evening	Night	Daily
Site Data						A	itos:	77.5%	12.9%	9.6%	97.42%
Ba	rrier Height:	0.0 feet			Ме	edium Tru	cks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-W	•	0.0			H	leavy Tru	cks:	86.5%	2.7%	10.8%	0.74%
Centerline Dis		38.0 feet			Noise So	urce Ele	vation	s (in f	eet)		
Centerline Dist.		38.0 feet				Autos		000	,		
Barrier Distance		0.0 feet			Mediur	n Trucks:					
Observer Height (	,	5.0 feet			Heav	y Trucks:	8.0	006	Grade Adju	istment.	: 0.0
	ad Elevation:	0.0 feet		H							
	ad Elevation:	0.0 feet		4	Lane Equ	uivalent			feet)		
	Road Grade:	0.0%				Autos:					
	Left View:	-90.0 degree				n Trucks:					
	Right View:	90.0 degree	es		Heav	y Trucks:	36.	181			
FHWA Noise Mod	el Calculation	-									
VehicleType	REMEL	Traffic Flow	Distai		Finite		Fresn	-	Barrier Atte		rm Atten
Autos:	66.51	-2.36		1.96	-	-1.20		-4.57	0.0		0.000
Medium Trucks:	77.72	-19.60		2.01		-1.20		-4.87	0.0		0.000
Heavy Trucks:	82.99	-23.56		2.00	0	-1.20		-5.59	0.0	00	0.000
Unmitigated Nois											
VehicleType	Leq Peak Hou			eq Ev	/ening	Leq N	<u> </u>		Ldn	C	NEL
Autos:	64		63.0		61.2		55.2		63.8		64.4
Medium Trucks:	58		57.4		51.1		49.5		58.0		58.2
		.2	58.8		49.8		51.0		59.4		59.5
Heavy Trucks:					61.9		57.4		65.9		66.4
	60	.9	65.2								
Heavy Trucks:	66										
Heavy Trucks: Vehicle Noise:	66	ontour (in feet	)	70 c		65 d		(	60 dBA		dBA
Heavy Trucks: Vehicle Noise:	66	ontour (in feet		70 c 21	0	65 d 44 47		(	60 dBA 94 101	2	dBA 203 217

	FHW	A-RD-77-108 HI	GHWAY	NOISE PI	REDICTIO		EL	_	_
Road Nam	io: Existing ne: Temescal Cy nt: n/o Cajalco F					Name: Be Imber: 12	edford Marketp ?751	lace	
SITE	SPECIFIC INF	UT DATA					DDEL INPUT	s	
Highway Data				Site Cor	nditions (	Hard = 1	0, Soft = 15)		
Average Daily	Traffic (Adt): 15	599 vehicles				AL	itos: 15		
Peak Hour	Percentage:	10%		Me	edium Tru	cks (2 Ax	les): 15		
Peak H	lour Volume: 1	,560 vehicles		He	avy Truc	ks (3+ Ax	les): 15		
Ve	hicle Speed:	45 mph		Vehicle	Mise				
Near/Far La	ne Distance:	51 feet			nicleType	0	ou Evening	Night	Daily
Site Data				ven			ay Evening		97.42%
					A Iedium Tri		7.5% 12.9% 4.8% 4.9%	9.6%	-
	rrier Height:	0.0 feet			Heavy Tr		4.9% 6.5% 2.7%	10.3%	
Barrier Type (0-W		0.0			neavy m	JUKS. O	0.070 Z.170	10.0%	0.74%
Centerline Dis		53.0 feet		Noise S	ource Ele	evations	(in feet)		
Centerline Dist.		53.0 feet			Autos	: 0.00	0		
Barrier Distance		0.0 feet		Mediu	m Trucks	: 2.29	7		
Observer Height (	,	5.0 feet		Hear	vy Trucks	: 8.00	6 Grade Ad	ljustment	: 0.0
	ad Elevation:	0.0 feet							
	ad Elevation:	0.0 feet		Lane Eq		Distance	, ,		
1	Road Grade:	0.0%			Autos				
	Left View:	-90.0 degrees			m Trucks				
	Right View:	90.0 degrees		Hear	vy Trucks	: 46.55	9		
FHWA Noise Mod	el Calculations			1					
VehicleType	REMEL	Traffic Flow	Distance	Finite	Road	Fresnel	Barrier Att	ten Bei	rm Atten
Autos:	68.46	-0.02	0.3	34	-1.20	-4	.66 0.0	000	0.000
Medium Trucks:	79.45	-17.26	0.3	36	-1.20	-4	.87 0.0	000	0.000
Heavy Trucks:	84.25	-21.21	0.3	36	-1.20	-5	5.40 0.0	000	0.000
Unmitigated Noise			rrier atte	nuation)					
VehicleType	Leq Peak Hour			Evening	Leq I	~	Ldn		NEL
Autos:	67.6			63.9		57.9	66.		67.1
Medium Trucks:	61.4		-	53.5		51.9	60.4		60.6
Heavy Trucks:	62.2	60	.8	51.7	,	53.0	61.3	3	61.5
Vehicle Noise:	69.4	67	.7	64.5		59.9	68.4	4	68.8
Centerline Distan	ce to Noise Cor	tour (in feet)							
				dBA	65 c		60 dBA		dBA
		Ld		41	89		192		114
		CNE	L: ·	44	96	6	206	4	144

Friday, November 22, 2019

	FH\	WA-RD-77-108	HIGH	NAY NC	ISE PF	REDICTIO	N MODEL					
Road Nam	io: Existing ne: Temescal nt: s/o Cajalco				Project Name: Bedford Marketplace Job Number: 12751							
SITE	SPECIFIC IN	NPUT DATA			NOISE MODEL INPUTS							
Highway Data				S	Site Conditions (Hard = 10, Soft = 15)							
	Traffic (Adt): Percentage: lour Volume:	21,684 vehicle 10% 2.168 vehicle			Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15							
Ve	hicle Speed:	45 mph										
Near/Far La	ne Distance:	51 feet		V	ehicle Veh	icleType	Da	/ Evening	Night Daily			
Site Data					1011		tos: 77.		9.6% 97.42%			
Ba	rrier Heiaht:	0.0 feet			М	edium Truc	cks: 84.	3% 4.9%	10.3% 1.84%			
Barrier Type (0-W		0.0			I	Heavy True	cks: 86.	5% 2.7%	10.8% 0.74%			
Centerline Dis		53.0 feet		N	oise Se	ource Elev	vations (ii	1 feet)				
Centerline Dist.	Centerline Dist. to Observer: 53.0 feet					Autos:						
Barrier Distance	Barrier Distance to Observer: 0.0 feet			Mediu	m Trucks:	2.297						
	Observer Height (Above Pad): 5.0 feet				y Trucks:	8.006	Grade Adj	ustment: 0.0				
	Pad Elevation: 0.0 feet			nno Fo	uivelent F	Viotoneo (	in fact)					
	ad Elevation:	0.0 feet		L	ane Eq	uivalent E Autos:		in leet)				
	Road Grade:	0.0%			Mar aller		46.731					
	Left View: Right View:	-90.0 degre 90.0 degre				m Trucks: /y Trucks:	46.541 46.559					
FHWA Noise Mod	el Calculation	15										
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresnel	Barrier Att	en Berm Atten			
Autos:	68.46	1.41		0.34		-1.20	-4.6	6 0.0	000.00			
Medium Trucks:	79.45	-15.83		0.36		-1.20	-4.8	87 0.0	000.00			
Heavy Trucks:	84.25	-19.78		0.36		-1.20	-5.4	40 0.0	000.0			
Unmitigated Nois	e Levels (with	out Topo and	barrie	r attenu	ation)							
VehicleType	Leq Peak Hou	ur Leq Day	1	Leq Eve	ening	Leq Ni	ight	Ldn	CNEL			
Autos:			67.1		65.3		59.3	67.9				
Medium Trucks:	62		61.3		54.9		53.4	61.8				
Heavy Trucks:			62.2		53.2		54.4	62.8				
Vehicle Noise:			69.1		66.0		61.3	69.8	3 70.3			
Centerline Distan	ce to Noise C	ontour (in feet	)									
			L	70 dE	BA	65 dE		60 dBA	55 dBA			
		-	Ldn:	52		111		239	516			
		C	NEL:	55		119		257	553			

	FHW	A-RD-77-108 HI	GHWAY	NOISE PR	EDICTION	N MODEL					
Scenari	o: Existing			Project Name: Bedford Marketplace							
Road Nam	e: California Av	ι.			Job Num	nber: 1275	1				
Road Segmer	it: w/o Masters	Dr.									
	SPECIFIC IN	PUT DATA					EL INPUTS	5			
Highway Data				Site Con	ditions (H	ard = 10, S	oft = 15)				
Average Daily	Traffic (Adt):	5,244 vehicles				Autos	: 15				
Peak Hour	Percentage:	10%		Med	lium Truck	s (2 Axles)	: 15				
Peak H	our Volume:	524 vehicles		Hea	avy Trucks	(3+ Axles)	: 15				
Vel	nicle Speed:	40 mph		Vehicle N	Niv						
Near/Far Lar	e Distance:	14 feet			cleType	Dav	Evening	Night Daily			
Site Data				verm				9.6% 97.42%			
				Autos: 77.5% 12.9% 9.6% 97.4 Medium Trucks: 84.8% 4.9% 10.3% 1.8							
	rier Height:	0.0 feet		Heavy Trucks: 86.5% 2.7% 10.8% 0.7							
Barrier Type (0-Wa	. ,	0.0			eavy muc	KS. 00.01	/0 Z.170	10.0% 0.74%			
Centerline Dis		34.0 feet		Noise So	urce Elev	ations (in	feet)				
Centerline Dist. t		34.0 feet			Autos:	0.000					
Barrier Distance to Observer: 0.0 feet				Mediun	n Trucks:	2.297					
Observer Height (Above Pad): 5.0 feet				Heav	Trucks:	8.006	Grade Adj	ustment: 0.0			
Pad Elevation: 0.0 feet											
	d Elevation:	0.0 feet		Lane Equ		istance (in	feet)				
F	Road Grade:	0.0%			Autos:	33.645					
	Left View:	-90.0 degrees			n Trucks:	33.381					
	Right View:	90.0 degrees		Heav	Y Trucks:	33.407					
FHWA Noise Mode	el Calculations			1							
VehicleType	REMEL	Traffic Flow	Distance	Finite	Road	Fresnel	Barrier Atte	en Berm Atten			
Autos:	66.51	-4.24	2	.48	-1.20	-4.53	0.0	0.00			
Medium Trucks:	77.72	-21.48	2	.53	-1.20 -		0.0	0.00			
Heavy Trucks:	82.99	-25.44	2	.52	-1.20	-5.67	0.0	00 0.00			
Unmitigated Noise				,				r			
<i>,</i> ,	Leq Peak Hour		,	Evening	Leq Nig	,	Ldn	CNEL			
Autos:	63.			59.9		53.8	62.4				
Medium Trucks:	57.0			49.7		48.1	56.6				
Heavy Trucks:	58.9			48.4		49.7	58.0				
Vehicle Noise:	65.6		.8	60.6		56.0	64.5	65.			
Centerline Distance	e to Noise Co	ntour (in feet)	-					55 ID (			
				) dBA	65 dB	A	60 dBA	55 dBA			
		Ld	n:	15	32		68	147			
		CNF		16	34		73	158			

	FHV	VA-RD-77-108	HIGHWA	AY NO	DISE PR	EDICTIO	ON MOL	DEL			
Scenar	io: Existing					Project I	Vame: E	Bedfo	rd Marketpl	ace	
Road Nam	ne: California A	w.				Job NL	mber: *	12751			
Road Segme	nt: e/o Master	s Dr.									
	SPECIFIC IN	IPUT DATA							L INPUTS	S	
Highway Data				S	ite Con	ditions (	Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt):	7,000 vehicles	3					Autos:			
Peak Hour	Percentage:	10%				dium Tru					
Peak H	lour Volume:	700 vehicles	6		Hea	avy Truci	ks (3+ A	xles):	15		
Ve	hicle Speed:	40 mph		v	ehicle l	Nix					
Near/Far La	ne Distance:	14 feet		-	Vehi	cleType		Day	Evening	Night	Daily
Site Data						A	utos:	77.5%	12.9%	9.6%	6 97.42%
Ba	rrier Height:	0.0 feet			Me	edium Tri	icks:	84.8%	4.9%	10.3%	5 1.84%
Barrier Type (0-W	•	0.0			ŀ	leavy Tri	icks:	86.5%	2.7%	10.8%	6 0.74%
Centerline Dis		34.0 feet		Ν	loise So	urce Ele	vations	s (in f	eet)		
Centerline Dist.	to Observer:	34.0 feet				Autos			,		
Barrier Distance	0.0 feet			Mediur	n Trucks		297				
Observer Height (	5.0 feet				y Trucks		006	Grade Adj	ustmen	t: 0.0	
Pa	ad Elevation:	0.0 feet									
Roa	ad Elevation:	0.0 feet		L	ane Equ	uivalent			feet)		
	Road Grade:	0.0%				Autos	: 33.6	645			
	Left View:	-90.0 degree	es		Mediur	n Trucks	: 33.3	381			
	Right View:	90.0 degree	es		Heav	y Trucks	: 33.4	107			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distar	ice	Finite	Road	Fresn	el	Barrier Atte	en Be	rm Atten
Autos:	66.51	-2.99		2.48		-1.20		-4.53	0.0	00	0.000
Medium Trucks:	77.72	-20.23		2.53		-1.20		-4.86	0.0	00	0.000
Heavy Trucks:	82.99	-24.18		2.52		-1.20		-5.67	0.0	00	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier a	ttenu	uation)						
VehicleType	Leq Peak Hou			eq Ev	ening	Leq I	·		Ldn	-	NEL
Autos:	64		62.9		61.1		55.1		63.7		64.3
Medium Trucks:	58		57.3		50.9		49.4		57.9		58.1
Heavy Trucks:	60	.1	58.7		49.7		50.9		59.3	1	59.4
Vehicle Noise:	66	.8	65.1		61.8		57.3		65.8	5	66.2
		ontour (in feet	)								
Centerline Distan	ce to Noise C						0.4		00 10 4	54	5 dBA
Centerline Distan	ce to Noise C			70 di		65 c			60 dBA		
Centerline Distan	ce to Noise C		Ldn: JFI :	70 di 18 19	;	65 c 38 4	3		83 89		179 191

	HWAY I	Y NOISE PREDICTION MODEL										
Road Name	o: Existing e: El Cerrito Re at: w/o Bedford					Vame: E Imber: 1		Marketpl	ace			
SITE S	SPECIFIC IN	PUT DATA		NOISE MODEL INPUTS								
Highway Data				Site Conditions (Hard = 10, Soft = 15)								
Average Daily	( )						utos:	15				
Peak Hour I		10%			dium True			15				
		2,404 vehicles		He	avy Truck	ks (3+ A.	xles):	15				
	nicle Speed:	40 mph	F	Vehicle	Mix							
Near/Far Lan	e Distance:	36 feet	F	Veh	icleType	1	Day	Evening	Night	Daily		
Site Data					A	utos:	7.5%	12.9%	9.6%	97.42%		
Bar	rier Height:	0.0 feet			edium Tru		34.8%	4.9%	10.3%	1.84%		
Barrier Type (0-Wa	all, 1-Berm):	0.0		ŀ	Heavy Tru	ucks: 8	36.5%	2.7%	10.8%	0.74%		
Centerline Dis		44.0 feet	ŀ	Noise So	ource Ele	vations	(in fee	et)				
Centerline Dist. t		44.0 feet	ŀ		Autos	: 0.0	00	,				
Barrier Distance to Observer: 0.0 feet				Mediu	m Trucks							
Observer Height (Above Pad): 5.0 feet					v Trucks.		06 0	Grade Adj	ustment:	0.0		
Pad Elevation: 0.0 feet												
Roa	Road Elevation: 0.0 feet			Lane Eq	uivalent			et)				
F	Road Grade:	0.0%			Autos							
	Left View:	-90.0 degrees			m Trucks.							
	Right View:	90.0 degrees		Heav	ry Trucks.	: 40.2	62					
FHWA Noise Mode	el Calculations	5										
VehicleType	REMEL	Traffic Flow Di	istance		Road	Fresne	el E	Barrier Atte	en Ber	m Atten		
Autos:	66.51	2.37	1.2	-	-1.20		4.61	0.0		0.000		
Medium Trucks:	77.72	-14.87	1.3	1	-1.20	-	4.87	0.0	00	0.000		
Heavy Trucks:	82.99	-18.82	1.3	1	-1.20	-	5.50	0.0	00	0.000		
Unmitigated Noise			ier atter	nuation)								
	Leq Peak Hou		Leq E	vening	Leq N	•	1	Ldn		VEL		
Autos:	69.			65.3		59.2		67.9		68.5		
Medium Trucks:	63.			55.1		53.5		62.0		62.2		
Heavy Trucks:	64.			53.8		55.1		63.4		63.6		
Vehicle Noise:	71.	0 69.2		66.0		61.4		70.0		70.4		
Centerline Distance	e to Noise Co	ntour (in feet)										
				dBA	65 d			) dBA		dBA		
		Ldn:		14	94			203		37		
		CNEL:	4	17	10	1	2	217	4	68		

Friday, November 22, 2019

Friday, November 22, 2019

	FH\	NA-RD-77-108	HIGHV	VAY NO	ISE PR	EDICTIO	N MOD	EL				
Road Nam	io: Existing ne: El Cerrito F nt: e/o Bedfore				Project Name: Bedford Marketplace Job Number: 12751							
SITE	SPECIFIC IN	NPUT DATA			NOISE MODEL INPUTS							
Highway Data				Si	Site Conditions (Hard = 10, Soft = 15)							
	Traffic (Adt): Percentage: lour Volume:	25,534 vehicle 10% 2,553 vehicle			Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15							
	hicle Speed:	40 mph		-			- 1 -	,	-			
Near/Far La		36 feet		Ve	hicle N							
					Vehi	cleType			•	Night	Daily	
Site Data									12.9%	9.6%		
Ba	rrier Height:	0.0 feet				dium Tru		4.8%	4.9%	10.3%	1.84%	
Barrier Type (0-W	'all, 1-Berm):	0.0			H	leavy Tru	cks: 8	6.5%	2.7%	10.8%	0.74%	
Centerline Dis	st. to Barrier:	44.0 feet		N	oise So	urce Elev	vations	(in feet)				
Centerline Dist.	to Observer:	44.0 feet				Autos:		. /				
Barrier Distance to Observer: 0.0 feet				Modium	n Trucks:	2.29						
Observer Height (Above Pad): 5.0 feet				v Trucks:	8.00		ade Adju	stment	0.0			
Pa	Pad Elevation: 0.0 feet								ournorn.	0.0		
Roa	ad Elevation:	0.0 feet		Lá	ne Equ	ivalent E	Distance	e (in fee	)			
	Road Grade:	0.0%				Autos:	40.46	50				
	Left View:	-90.0 degree	es			n Trucks:	40.24					
	Right View:	90.0 degree	es		Heav	y Trucks:	40.26	62				
FHWA Noise Mod	el Calculation	IS										
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresne	l Bai	rier Atte	n Ber	m Atten	
Autos:	66.51	2.63		1.28		-1.20	-4	4.61	0.00	0	0.000	
Medium Trucks:	77.72	-14.61		1.31		-1.20	-4	4.87	0.00	0	0.000	
Heavy Trucks:	82.99	-18.56		1.31		-1.20	-	5.50	0.00	0	0.000	
Unmitigated Nois	e Levels (with	out Topo and	barriei	r attenu	ation)							
VehicleType	Leq Peak Hou	ur Leq Day	· .	Leq Eve	ning	Leq N	ight	La	n	CI	VEL	
Autos:	69	9.2	67.3		65.6		59.5		68.1		68.7	
Medium Trucks:	63	3.2	61.7		55.4		53.8		62.3		62.5	
Heavy Trucks:	64	1.5	63.1		54.1		55.3		63.7		63.8	
Vehicle Noise:	71	.2	69.5		66.2		61.7		70.2		70.7	
Centerline Distan	ce to Noise C	ontour (in feet	)									
			L	70 dE	A	65 dE	3A	60 a			dBA	
			Ldn:	45		98		21			55	
		Ci	VEL:	49		105	•	22	6	4	87	

FHWA	-RD-77-108 HIGI	HWAY N									
Scenario: Existing Road Name: El Cerrito Rd. Road Segment: e/o I-15 SB Ra	amps		Project Name: Bedford Marketplace Job Number: 12751								
SITE SPECIFIC INPU			NOISE MODEL INPUTS								
Highway Data			Site Conditions (Hard = 10, Soft = 15)								
Average Daily Traffic (Adt): 16, Peak Hour Percentage: Peak Hour Volume: 1,	374 vehicles 10% 637 vehicles		Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15								
Vehicle Speed:	40 mph	H		, ,							
Near/Far Lane Distance:	36 feet	H	Vehicle Mix			Vight Daily					
<b>A</b>											
Site Data											
Barrier Height:	0.0 feet										
Barrier Type (0-Wall, 1-Berm):	0.0		Heavy I	rucks: 86.5	% 2.7%	10.8% 0.74%					
	44.0 feet	1	Noise Source E	levations (in	feet)						
	44.0 feet		Auto	os: 0.000	,						
Barrier Distance to Observer:	0.0 feet		Medium Truck	(s: 2.297							
Observer Height (Above Pad):	5.0 feet		Heavy Truck	(s: 8.006	Grade Adjus	stment: 0.0					
Pad Elevation:	0.0 feet		Lane Equivaler								
	Road Elevation: 0.0 feet										
Road Grade:	0.0%		Auto								
Left View: -	90.0 degrees		Medium Truck								
Right View:	90.0 degrees		Heavy Truck	(s: 40.262							
FHWA Noise Model Calculations											
	raffic Flow Di	istance	Finite Road	Fresnel	Barrier Atter	Berm Atten					
Autos: 66.51	0.70	1.2	8 -1.20	-4.61	0.00	0.00					
Medium Trucks: 77.72	-16.54	1.3		-4.87							
Heavy Trucks: 82.99	-20.49	1.3	1 -1.20	-5.50	0.00	0.00					
Unmitigated Noise Levels (without											
VehicleType Leq Peak Hour	Leq Day	Leq E		Night	Ldn	CNEL					
Autos: 67.3	65.4		63.6	57.6	66.2	66.					
Medium Trucks: 61.3	59.8		53.4	51.9	60.3	60.					
Heavy Trucks: 62.6	61.2		52.2	53.4	61.8	61.					
Vehicle Noise: 69.3	67.6		64.3	59.8	68.3	68.					
Centerline Distance to Noise Cont	our (in feet)										
		70 0		dBA	60 dBA	55 dBA					
	Ldn:	3	4	73	157	338					
	CNFL:										

FHWA-RD-77-108 H	IGHWA	Y NOISE P	REDICTION	NODEL			
Scenario: Existing Road Name: El Cerrito Rd. Road Segment: e/o I-15 NB Ramps			Project Nam Job Numbe			lace	
SITE SPECIFIC INPUT DATA			NOIS	e mode	L INPUT	s	
Highway Data		Site Col	nditions (Har	d = 10, S	oft = 15)		
Average Daily Traffic (Adt): 9,519 vehicles				Autos	15		
Peak Hour Percentage: 10%		Me	dium Trucks	2 Axles).	15		
Peak Hour Volume: 952 vehicles		He	avy Trucks (3	+ Axles)	15		
Vehicle Speed: 40 mph		Vehicle	Mix				
Near/Far Lane Distance: 36 feet			nicleType	Day	Evening	Night	Daily
Site Data			Autos	: 77.59	6 12.9%	9.6%	97.42
Barrier Height: 0.0 feet		N	ledium Trucks	: 84.8%	6 4.9%	10.3%	1.84
Barrier Type (0-Wall, 1-Berm): 0.0			Heavy Trucks	: 86.5%	6 2.7%	10.8%	0.74
Centerline Dist. to Barrier: 44.0 feet		Noise S	ource Elevat	ons (in t	eet)		
Centerline Dist. to Observer: 44.0 feet			Autos:	0.000	000		
Barrier Distance to Observer: 0.0 feet		Mediu	m Trucks:	2.297			
Observer Height (Above Pad): 5.0 feet			vy Trucks:	8.006	Grade Ad	justment.	0.0
Pad Elevation: 0.0 feet			,				
Road Elevation: 0.0 feet		Lane Ec	uivalent Dis		feet)		
Road Grade: 0.0%				40.460			
Left View: -90.0 degrees				40.241 40.262			
Right View: 90.0 degrees		пеа	vy Trucks:	40.202			
FHWA Noise Model Calculations							
VehicleType REMEL Traffic Flow	Distanc			esnel	Barrier Att		m Atter
Autos: 66.51 -1.65		1.28	-1.20	-4.61		000	0.00
Medium Trucks: 77.72 -18.89		1.31	-1.20	-4.87		000	0.00
Heavy Trucks: 82.99 -22.85		1.31	-1.20	-5.50	0.0	000	0.00
Unmitigated Noise Levels (without Topo and b	arrier at	tenuation)					
VehicleType Leq Peak Hour Leq Day		q Evening	Leq Night		Ldn	-	NEL
	3.0	61.3		5.2	63.	-	64
		51.1		9.5	58.0	-	58
Medium Trucks: 58.9 5				51.0	59.4		59
Medium Trucks:         58.9         57           Heavy Trucks:         60.3         58	3.8	49.8					66
Medium Trucks: 58.9 57 Heavy Trucks: 60.3 58		49.8 61.9		57.4	65.9	9	00
Medium Trucks:         58.9         57           Heavy Trucks:         60.3         56           Vehicle Noise:         67.0         68	5.2	61.9				-	
Medium Trucks:         58.9         57           Heavy Trucks:         60.3         58           Vehicle Noise:         67.0         68           Centerline Distance to Noise Contour (in feet)         69         69	5.2	61.9 70 dBA	65 dBA		60 dBA	- 55	dBA
Medium Trucks:         58.9         57           Heavy Trucks:         60.3         58           Vehicle Noise:         67.0         68           Centerline Distance to Noise Contour (in feet)         69         69	3.8 5.2 dn:	61.9				55	

Barrier Type (IV-Wall, 1-Bern; 1): 0.0         Heavy Trucks:         86.5%         2.7%         10.8%         0.74           Centerline Dist. to Doserver:         44.0 feet         Noise Source Elevations (in feet)         Autos:         0.00           Barrier Type (IV-Wall, 1-Bern; 0.0)         0 feet         Autos:         0.00         Autos:         0.00           Barrier Type (IV-Wall, 1-Bern; 0.0)         0 feet         Autos:         0.00         Autos:         0.00           Barrier Type (IV-Wall, 1-Bern; 0.0)         0 feet         Autos:         0.00         Grade Adjustment:         0.0           Road Elevation:         0.0 feet         Autos:         40.460         Heavy Trucks:         40.460           Left View:         90.0 degrees         Medium Trucks:         40.241         Heavy Trucks:         40.262           FHWA Noise Model Calculations         VenicleType         REIMEL Traffic Flow Distance         Finite Road         Fresnel         Barrier Atten         Berm Atten           Autos:         66.51         -0.32         1.28         -1.20         -4.67         0.000         0.00           Medium Trucks:         82.99         -21.51         1.31         -1.20         -5.50         0.000         0.00           Heavy Trucks:	FHWA-RD-77-108 HIGHWAY	NOISE PREDICTION MODEL							
Highway Data         Site Conditions (Hard = 10, Soft = 15)           Average Daily Traffic (Adt): 12,944 vehicles         Autos: 15           Peak Hour Percentage: 10%         Autos: 15           Peak Hour Volume: 1,294 vehicles         Medium Trucks (2 Akes): 15           Vehicle Speed: 40 mph         Medium Trucks (2 Akes): 15           Site Data         Vehicle Mix           Barrier Height: 0.0 feet         Day Evening Night Daily 6,6% 97.42           Barrier Jost to Barrier: 44.0 feet         Autos: 77.5% 12.9% 9,6% 97.42           Centerline Dist. to Barrier: 44.0 feet         Heavy Trucks: 86.5% 2.7% 10.8% 0.74           Dase very Fleight (Above Pad): 5.0 feet         Autos: 0.000           Pad Elevation: 0.0 feet         Autos: 40.06           Road Grade: 0.0%         Left View: 90.0 degrees           Right View: 90.0 degrees         Finite Road Freenel           Right View: 90.0 degrees         Finite Road Freenel           WehicleType         REMEL           Traffic Flow         Distance           VehicleType         Leq Day           VehicleType         Leq Evening           Motise Levels (without Topo and barrier attenuation)           VehicleType         Leq Day           VehicleType         Leq Day           VehicleType         Leq Day	Road Name: Eagle Glen Pkwy.								
Average Daily Traffic (Adt): 12,944 vehicles         Autos:         15           Peak Hour Percentage:         10%         Medium Trucks (2 Axles):         15           Peak Hour Volume:         1,294 vehicles         Medium Trucks (2 Axles):         15           Vehicle Speed:         40 mph         Heavy Trucks (3 + Axles):         15           Site Data         Autos:         75%         12,39%         9.6% 97.42           Barrier Height:         0.0 feet         Medium Trucks:         84.8%         4.9%         10.3%         1.84           Barrier Type (0-Wall, 1-Berm):         0.0         Centerline Dist. to Barrier:         4.0 feet         Medium Trucks:         84.8%         4.9%         10.3%         1.84           Barrier Distance to Observer:         0.0 feet         Autos:         0.00         Medium Trucks:         8.006         Grade Adjustment:         0.0           Centerline Dist. to Deserver:         0.0 feet         Autos:         0.00         Medium Trucks:         8.006         Grade Adjustment:         0.0           Deserver Height (Move Pad):         5.0 feet         Autos:         0.00         Medium Trucks:         40.400           Left View:         90.0 degrees         Right View:         90.0 degrees         Right View:         90.0 degre									
Barrier Height:         0.0         Medium Trucks (2 Axles):         15           Vehicle Speed:         40 mph         Vehicle Mix         12.94 vehicles         Heavy Trucks (3+ Axles):         15           Site Data         40 mph         Vehicle Mix         Vehicle Mix         Day         Evening         Night         Daily           Site Data         40 mph         40 mph         Autos:         77.5%         12.9%         9.6%         97.42           Barrier Height:         0.0 feet         Autos:         77.5%         12.9%         9.6%         97.42           Barrier Dist to Diserver:         4.0 feet         Medium Trucks:         84.8%         4.9%         10.3%         1.84           Barrier Distance to Observer:         4.0 feet         Moise Source Elevations (in feet)         10.0%         74           Centerine Dist. to Barrier Ateio         0.0 feet         Muss:         8.006         Grade Adjustment:         0.0           Pad Elevation:         0.0 feet         Lane Equivalent Distance (in feet)         12.8%         12.8%         12.8%           Right View:         -90.0 degrees         Finite Road         Fresnet         Barrier Atten         Berrier Atten           VehicleType         REMEL         Traffic Flow	Highway Data	Site Conditions (Hard = 10, Soft = 15)							
Peak Hour Volume:         1,294 vehicles           Vehicle Speed:         40 mph           Near/Far Lane Distance:         36 feet           Vehicle Mix         Vehicle Mix           Site Data         Vehicle Mix           Barrier Height:         0.0 feet           Barrier Type (0-Wall, 1-Berm):         0.0           Centerline Dist. to Barrier:         44.0 feet           Centerline Dist. to Barrier:         44.0 feet           Barrier Distance to Observer:         44.0 feet           Barrier Distance to Observer:         0.0 feet           Barrier Distance to Observer:         44.0 feet           Road Grade:         0.0%           Autos:         7.75           Pad Elevation:         0.0 feet           Road Grade:         0.0%           Autos:         66.51           Pad Elevation:         0.0 feet           Right View:         90.0 degrees           Right View:         90.0 degrees           Right View:         90.0 degrees           Right View:         90.0 degrees           Heavy Trucks:         40.261           Medium Trucks:         40.262           FHMA Noise Model Calculations           VehicleType         Remiter Atten <td>Average Daily Traffic (Adt): 12,944 vehicles</td> <td>Autos: 15</td>	Average Daily Traffic (Adt): 12,944 vehicles	Autos: 15							
Vehicle Speed: Near/Far Lane Distance:         40 mph 36 feet         Vehicle Mx         Day         Evening         Night         Day           Site Data         Autos:         77.5%         12.9%         9.6%         97.42           Barrier Height:         0.0 feet         Autos:         77.5%         12.9%         9.6%         97.42           Barrier Type (0-Wall, 1-Berm):         0.0         Centerline Dist. to Barrier:         44.0 feet         Medium Trucks:         84.8%         4.9%         10.3%         1.84           Barrier Distance to Observer:         0.0 feet         Autos:         0.000         Medium Trucks:         84.8%         4.9%         10.3%         0.74           Pad Elevation:         0.0 feet         Autos:         0.000         Medium Trucks:         80.06         Grade Adjustment:         0.0           Road Grade:         0.0%         Autos:         40.460         Heavy Trucks:         40.261         Heavy Trucks:         40.261           Kite/Kite/Type         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Bern Atten           Autos:         66.51         -0.32         1.28         -1.20         -4.61         0.000         0.00	Peak Hour Percentage: 10%	Medium Trucks (2 Axles): 15							
Near/Far Lane Distance:         36 feet         Vehicle Max         Day         Evening         Night         Daily           Site Data         Autos:         77.5%         12.9%         9.6%         97.42           Barrier Height:         0.0 feet         Autos:         77.5%         12.9%         9.6%         97.42           Barrier Height:         0.0         feet         Medium Trucks:         84.8%         4.9%         10.3%         1.84           Barrier Type (0-Wall, 1-Berm):         0.0         feet         Medium Trucks:         86.5%         2.7%         10.8%         0.74           Centerine Dist. to Barrier:         44.0 feet         Autos:         0.00         feet         Multice:         0.00 <td>Peak Hour Volume: 1,294 vehicles</td> <td>Heavy Trucks (3+ Axles): 15</td>	Peak Hour Volume: 1,294 vehicles	Heavy Trucks (3+ Axles): 15							
Near/Far Lane Distance:         36 feet         VehicleType         Day         Evening         Night         Daily           Site Data         Autos:         77.5%         12.9%         9.6%         97.42           Barrier Height:         0.0         feet         Medium Trucks:         84.8%         4.9%         10.3%         1.84           Barrier Type (0-Wall, 1-Berm):         0.0         Centerline Dist. to Barrier:         44.0 feet         Medium Trucks:         86.5%         2.7%         10.8%         0.74           Centerline Dist. to Desrever:         0.0 feet         Autos:         0.00         Medium Trucks:         80.06         Grade Adjustment:         0.0           Barrier Distance to Observer:         0.0 feet         Autos:         0.00         Medium Trucks:         8.006         Grade Adjustment:         0.0           Pad Elevation:         0.0 feet         Autos:         40.460         Image: Advection and trucks:         0.0           Road Grade:         0.0%         Autos:         40.460         Image: Advection and trucks:         40.460           Autos:         66.51         -0.32         1.28         -1.20         -4.61         0.000         0.00           Medium Trucks:         82.99         -21.51         <	Vehicle Speed: 40 mph	Vahiala Mix							
Site Data         Autos:         77.5%         12.9%         6.6%         97.42           Barrier Height:         0.0 feet         Medium Trucks:         84.8%         4.9%         10.3%         1.84           Barrier Type (0-Wall, 1-Berm):         0.0         0.0         Medium Trucks:         84.8%         4.9%         10.3%         1.84           Centerine Dist. to Barrier:         44.0 feet         Moise Source Elevations (in feet)         Noise Source Elevations (in feet)         Noise Source Elevations (in feet)         Noise Source Elevations (in feet)         Medium Trucks:         2.297           Observer:         40.0 feet         Moise Grade:         0.0%         Lare Equivalent Distance (in feet)         Noise Grade Adjustment:         0.0           Road Elevation:         0.0 feet         Mutos:         40.460         Medium Trucks:         40.241           Heavy Trucks:         40.060         Medium Trucks:         40.241         Heavy Trucks:         40.262           FHWA Noise Model Calculations         VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berrier Atten           Autos:         66.5         -0.32         1.28         -1.20         -4.61         0.000         0.00      <	Near/Far Lane Distance: 36 feet								
Barrier Height:         0.0 feet           Barrier Type (0-Wail, 1-Berm):         0.0           Centerline Dist. to Barrier:         44.0 feet           Barrier Type (0-Wail, 1-Berm):         0.0           Centerline Dist. to Barrier:         44.0 feet           Barrier Distance to Observer:         40.0 feet           Barrier Distance to Observer:         40.0 feet           Barrier Distance to Observer:         0.0 feet           Road Grade:         0.0%           Left View:         -90.0 degrees           Right View:         90.0 degrees           Right View:         90.0 degrees           FHWA holse Model Calculations         Values:           VehicleType         REMEL           Traffic Flow         Distance           Finite Road         Fresnel           Medium Trucks:         82.9           -21.51         1.31           -1.20         -4.61           Medium Trucks:         82.9           VehicleType         Leg Veals           VehicleType         Leg Day           Lege Verlage         Lege Verlage           Medium Trucks:         82.9           -21.51         1.31           -1.20         -4.61	0/4- D-4-								
Barrier Tregerit         0.0 feet         Heavy Trucks:         86.5%         2.7%         10.8%         0.74           Centerline Dist. to Diserver:         44.0 feet         Noise Source Elevations (in feet)         Autos:         0.00           Barrier Type (IV Wall, 1-Berry Trucks:         2.97         10.8%         0.74           Deserver Height (Above Pad):         5.0 feet         Autos:         0.00         Medium Trucks:         2.297           Pad Elevation:         0.0 feet         Autos:         8.006         Grade Adjustment:         0.0           Road Grade:         0.0%         Autos:         40.460         Heavy Trucks:         40.460           Left View:         90.0 degrees         Medium Trucks:         40.241         Heavy Trucks:         40.262           FHWA Noise Model Calculations         VehicleType         REIMEL         Traffic Flow         Distance         Finite Road         Fresnel         Berrier Atten         Berra Atten           Autos:         66.51         -0.32         1.28         -1.20         -4.67         0.000         0.00           Medium Trucks:         82.99         -21.51         1.31         -1.20         -4.87         0.000         0.00           Medium Trucks:         82.99         -		11.070 11.070 12.070 01.070 01.1270							
Laine Type (orvia, Tubern), Todari, Tubern), Contentine Dist. to Barrier: 44.0 feet         Noise Surce Elevations (in feet)           Centertine Dist. to Deserver:         44.0 feet         Autos: 0.000           Barrier Distance to Observer:         0.0 feet         Molise Surce Elevations (in feet)           Deserver Height (Above Pad):         5.0 feet         Medium Trucks: 2.297           Pad Elevation:         0.0 feet         Lane Equivalent Distance (in feet)           Road Grade:         0.0 %         Autos: 40.460           Left View:         -90.0 degrees         Medium Trucks: 40.241           Heavy Trucks:         40.262           FHWA Noise Model Calculations         Finite Road         Fresnel         Barrier Atten           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Feesnel         Barrier Atten           Heavy Trucks:         82.99         -21.51         1.31         -1.20         -4.61         0.000         0.00           Medium Trucks:         77.72         -17.56         1.31         -1.20         -4.61         0.000         0.00           Medium Trucks:         82.99         -21.51         1.31         -1.20         -4.61         0.000         0.00           Medium Trucks:         82.99 <td></td> <td></td>									
Centerline Dist. to Observer:         44,0 feet         Autos:         0.000           Barrier Distance to Observer:         0.0 feet         Autos:         0.000           Dbserver Height (Abov Pad):         5.0 feet         Medium Trucks:         2.297           Pad Elevation:         0.0 feet         Heavy Trucks:         8.006         Grade Adjustment:         0.0           Road Elevation:         0.0 feet         Lane Equivalent Distance (in feet)         Lane Equivalent Distance (in feet)           Road Grade Louditions         -90.0 degrees         Medium Trucks:         40.261           FHWA Noise Model Calculations         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berra Atten           Autos:         66.51         -0.32         1.28         -1.20         -4.67         0.000         0.00           Medium Trucks:         82.99         -21.51         1.31         -1.20         -5.50         0.000         0.00           Medium Trucks:         82.99         -21.51         1.31         -1.20         -5.60         0.000         0.00           Medium Trucks:         82.99         -21.51         1.31         -1.20         -5.60         0.000         0.00           Unnitigated No		Theavy Trucks. 00.576 2.176 10.076 0.1476							
Barrier Distance to Observer:         0.0 feet         Autos:         0.000           Observer Height (Above Pad):         5.0 feet         Medium Trucks:         2.297           Pad Elevation:         0.0 feet         Heavy Trucks:         8.006         Grade Adjustment:         0.0           Road Grade:         0.0%         Autos:         40.460             Left Ivew:         -90.0 degrees         Medium Trucks:         40.461             VehicleType         REMEL         Traffic Flow         Distance         Fresnel         Barrier Atten         Bern Atten           Autos:         66.51         -0.32         1.28         -1.20         -4.61         0.000         0.00           Medium Trucks:         82.99         -21.51         1.31         -1.20         -5.50         0.000         0.00           Medium Trucks:         82.99         -21.51         1.31         -1.20         -5.60         0.000         0.00           Medium Trucks:         82.99         -21.51         1.31         -1.20         -5.60         0.000         0.00           Medium Trucks:         82.99         -21.51         1.31         -1.20         -5.60         0.000         0.00		Noise Source Elevations (in feet)							
Observer Height (Above Pad):         5.0 feet         Medium Trucks:         2.297           Pad Elevation:         0.0 feet         Heavy Trucks:         8.006         Grade Adjustment:         0.0           Road Elevation:         0.0 feet         Left View:         -90.0 degrees         Medium Trucks:         8.006         Grade Adjustment:         0.0           Left View:         -90.0 degrees         Medium Trucks:         40.460         Medium Trucks:         40.241           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berner Atten           Medium Trucks:         77.72         -17.56         1.31         -1.20         -4.61         0.000         0.00           Medium Trucks:         82.99         -21.51         1.31         -1.20         -5.50         0.000         0.00           Unnitigated Noise Levels (without Topo and barrier attenuation)         VehicleType         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         66.3         64.4         62.6         56.5         65.2         65           Medium Trucks:         61.6         60.2         51.1         52.4         60.7	11.0	Autos: 0.000							
Pad Elevation:         0.0 feet         Heavy Trucks:         8,00         Grade Adjustifient:         0.0           Road Elevation:         0.0 feet         Lane Equivalent Distance (in feet)         Lane Equivalent Distance (in feet)           Road Grade:         0.0%         Addos:         0.0460           Road Calculations         Medium Trucks:         40.261           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berra Attes           Autos:         66.51         -0.32         1.28         -1.20         -4.67         0.000         0.00           Medium Trucks:         77.72         -17.56         1.31         -1.20         -4.67         0.000         0.00           Heavy Trucks:         82.99         -21.51         1.31         -1.20         -4.67         0.000         0.00           Unnitigated Noise Levels (without Topo and barrier attenuation)         Unitigated Noise Levels (without Topo and barrier attenuation)         Unitigated Noise Levels (without Topo and barrier attenuation)         CNEL           Autos:         66.3         64.4         62.6         56.5         65.2         65           Medium Trucks:         60.3         58.8         52.4         50.9 <td></td> <td>Medium Trucks: 2.297</td>		Medium Trucks: 2.297							
Road Elevation:         0.0 feet         Lane Equivalent Distance (in feet)           Road Grade:         0.0%         Autos:         40.460           Left View:         -90.0 degrees         Medium Trucks:         40.241           Right View:         90.0 degrees         Heavy Trucks:         40.221           FHWA Noise Model Calculations         Entit View:         90.0 degrees         Finite Road         Fresnel         Barrier Atten           Autos:         66.51         -0.32         1.28         -1.20         -4.61         0.000         0.00           Medium Trucks:         77.72         -17.56         1.31         -1.20         -5.50         0.000         0.00           Heavy Trucks:         82.99         -21.51         1.31         -1.20         -5.50         0.000         0.00           Unmitigated Noise Levels (without Topo and barrier attenuation)         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         66.3         64.4         62.6         56.5         65.2         65           Medium Trucks:         60.3         58.8         52.4         50.9         59.3         56           Medium Trucks:         61.6         60.2         51.1 <td< td=""><td><b>.</b> ,</td><td>Heavy Trucks: 8.006 Grade Adjustment: 0.0</td></td<>	<b>.</b> ,	Heavy Trucks: 8.006 Grade Adjustment: 0.0							
Road Grade:         0.0%         Autos:         40.460           Left View:         -90.0 degrees         Medium Trucks:         40.241           Heavy Trucks:         40.262         Medium Trucks:         40.241           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fcsnel         0.000         0.00           Medium Trucks:         77.72         -17.56         1.31         -1.20         -4.67         0.000         0.00           Medium Trucks:         82.99         -21.51         1.31         -1.20         -5.50         0.000         0.00           Unnitiggate Moise Levels (without Topo and barrier attenuation)         VehicleType         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         66.3         64.4         62.6         56.5         65.2         65           Medium Trucks:         61.6         60.2         51.1         52.4         60.7         60		Lana Equivalent Distance (in fact)							
Left View:         -90.0 degrees         Medium Trucks:         40.241           Right View:         90.0 degrees         Heavy Trucks:         40.261           FHWA Noise Model Calculations         Frende         Barrier Atten         Berner Atten           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Bern Atten           Autos:         66.51         -0.32         1.28         -1.20         -4.67         0.000         0.00           Medium Trucks:         77.72         -17.56         1.31         -1.20         -4.67         0.000         0.00           Unnitigated Noise Levels (without Topo and barrier attenuation)         VehicleType         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         66.3         64.4         62.6         56.5         65.2         65           Medium Trucks:         60.3         52.4         50.9         59.3         59.3         59.3           Heavy Trucks:         61.6         60.2         51.1         52.4         60.7         60									
Right View:         90.0 degrees         Heavy Trucks:         40.262           FHWA Noise Model Calculations         Einite Road         Fresnel         Barrier Atten         Bern Atten           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Bern Atten           Autos:         66.51         -0.32         1.28         -1.20         -4.61         0.000         0.00           Medium Trucks:         77.72         -17.56         1.31         -1.20         -4.67         0.000         0.00           Heavy Trucks:         82.99         -21.51         1.31         -1.20         -5.50         0.000         0.00           Unmitigated Noise Levels (without Topo and barrier attenuation)         Eq. Q.26         56.5         65.2         65           VehicleType         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         66.3         64.4         62.6         56.5         65.2         65           Heavy Trucks:         61.6         60.2         51.1         52.4         60.7         60									
FHWA Noise Model Calculations           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Atten           Autos:         66.51         -0.32         1.28         -1.20         -4.61         0.000         0.00           Medium Trucks:         77.72         -17.56         1.31         -1.20         -4.67         0.000         0.00           Heavy Trucks:         82.99         -21.51         1.31         -1.20         -5.50         0.000         0.00           Unnitigated Noise Levels (without Topo and barrier attenuation)         -4.87         0.000         0.00           VehicleType         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         66.3         64.4         62.6         56.5         65.2         65           Medium Trucks:         60.3         58.8         52.4         50.9         59.3         58           Heavy Trucks:         61.6         60.2         51.1         52.4         60.7         60									
VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Atter           Autos:         66.51         -0.32         1.28         -1.20         -4.61         0.000         0.00           Medium Trucks:         77.72         -17.56         1.31         -1.20         -4.61         0.000         0.00           Heavy Trucks:         82.99         -21.51         1.31         -1.20         -5.50         0.000         0.00           Unmitigated Noise Levels (without Topo and barrier attenuation)         VehicleType         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         66.3         64.4         62.6         56.5         65.2         65           Medium Trucks:         60.3         58.8         52.4         50.9         59.3         58           Heavy Trucks:         61.6         60.2         51.1         52.4         60.7         60	Right View: 90.0 degrees	Heavy Trucks. 40.262							
Autos:         66.51         -0.32         1.28         -1.20         -4.61         0.000         0.00           Medium Trucks:         77.72         -17.56         1.31         -1.20         -4.67         0.000         0.00           Heavy Trucks:         77.72         -17.56         1.31         -1.20         -4.87         0.000         0.00           Unmitigate Molse Levels (without Topo and barrier attenuation)         -5.50         0.000         0.00           VehicleType         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         66.3         64.4         62.6         56.5         65.2         65           Medium Trucks:         60.3         58.8         52.4         50.9         59.3         59           Heavy Trucks:         61.6         60.2         51.1         52.4         60.7         60 <td>FHWA Noise Model Calculations</td> <td></td>	FHWA Noise Model Calculations								
Medium Trucks:         77.72         -17.56         1.31         -1.20         -4.87         0.000         0.00           Heavy Trucks:         82.99         -21.51         1.31         -1.20         -5.50         0.000         0.00           Umitigated Noise Levels (without Topo and barrier attenuation)         -         -         -         -         -         -         -         -         -         -         -         -         0.000         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00	VehicleType REMEL Traffic Flow Distance	e Finite Road Fresnel Barrier Atten Berm Atten							
Heavy Trucks:         82.99         -21.51         1.31         -1.20         -5.50         0.000         0.00           Unnitigated Noise Levels (without Topo and barrier attenuation)         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           VehicleType         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         66.3         64.4         62.6         56.5         65.2         65           Medium Trucks:         60.3         58.8         52.4         50.9         59.3         58           Heavy Trucks:         61.6         60.2         51.1         52.4         60.7         60	Autos: 66.51 -0.32 1	.28 -1.20 -4.61 0.000 0.000							
Unmitigated Noise Levels (without Topo and barrier attenuation)           VehicleType         Leq Peek Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         66.3         64.4         62.6         56.5         65.2         65           Medium Trucks:         60.3         58.8         52.4         50.9         59.3         59           Heavy Trucks:         61.6         60.2         51.1         52.4         60.7         60	Medium Trucks: 77.72 -17.56 1	.31 -1.20 -4.87 0.000 0.000							
VehicleType         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         66.3         64.4         62.6         56.5         65.2         65           Medium Trucks:         60.3         58.8         52.4         50.9         59.3         59           Heavy Trucks:         61.6         60.2         51.1         52.4         60.7         60	Heavy Trucks: 82.99 -21.51 1	.31 -1.20 -5.50 0.000 0.000							
Autos:         66.3         64.4         62.6         56.5         65.2         65           Medium Trucks:         60.3         58.8         52.4         50.9         59.3         59           Heavy Trucks:         61.6         60.2         51.1         52.4         60.7         60		enuation)							
Medium Trucks:         60.3         58.8         52.4         50.9         59.3         59           Heavy Trucks:         61.6         60.2         51.1         52.4         60.7         60	VehicleType Leq Peak Hour Leq Day Leq								
Heavy Trucks: 61.6 60.2 51.1 52.4 60.7 60	Autos: 66.3 64.4	62.6 56.5 65.2 65.8							
	Medium Trucks: 60.3 58.8	52.4 50.9 59.3 59.5							
Vahida Naiza: 69.3 66.6 62.3 59.7 67.3 67		51.1 52.4 60.7 60.9							
Venicle Noise. 00.3 00.0 03.3 30.7 07.3 07	Vehicle Noise: 68.3 66.6	63.3 58.7 67.3 67.7							
Centerline Distance to Noise Contour (in feet)									
70 dBA 65 dBA 60 dBA 55 dBA									
Ldn: 29 62 134 289									
CNEL: 31 67 144 310	CNEL:	31 67 144 310							

Friday, November 22, 2019

Friday, November 22, 2019

	FHW	/A-RD-77-108	HIGHV	VAY N	OISE PF	REDICTIO	ON MODI	EL				
	<ul> <li>Existing</li> <li>Eagle Glen</li> <li>e/o Bedford</li> </ul>				Project Name: Bedford Marketplace Job Number: 12751							
SITE S	SPECIFIC IN	PUT DATA						ODEL INPUT	'S			
Highway Data				S	Site Con	ditions (	Hard = 1	0, Soft = 15)				
Average Daily 1 Peak Hour F Peak Ho	Percentage:	8,480 vehicle 10% 1.848 vehicle					Ai cks (2 Ax ks (3+ Ax	,				
	icle Speed:	45 mph	3			-	10 101 7 80	100). 10				
Near/Far Lan		76 feet		V	ehicle l							
Neal/I al Lali	e Distance.	70 leet			Veh	icleType		ay Evening		Daily		
Site Data								7.5% 12.9%	9.6%			
Bar	rier Height:	0.0 feet			Me	edium Tr	ucks: 8	4.8% 4.9%	10.3%	1.84%		
Barrier Type (0-Wa	all, 1-Berm):	0.0			F	leavy Tr	ucks: 8	6.5% 2.7%	10.8%	0.74%		
Centerline Dis	t. to Barrier:	65.0 feet			loise Sc	ource Ele	evations	(in feet)				
Centerline Dist. to	o Observer:	65.0 feet		Ê		Autos		,				
Barrier Distance to	o Observer:	0.0 feet			Modiu	m Trucks						
Observer Height (A	Above Pad):	5.0 feet				v Trucks			liustment	0.0		
Pa	d Elevation:	0.0 feet							,			
Roa	d Elevation:	0.0 feet		L	ane Eq			e (in feet)				
F	Road Grade:	0.0%				Autos	. 02.01	72				
	Left View:	-90.0 degre	es			m Trucks						
	Right View:	90.0 degre	es		Heav	y Trucks	: 52.82	21				
FHWA Noise Mode	l Calculations	5										
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresne	I Barrier At	ten Ber	m Atten		
Autos:	68.46	0.72		-0.48		-1.20	-4	4.70 0.	000	0.000		
Medium Trucks:	79.45	-16.52		-0.46		-1.20			000	0.000		
Heavy Trucks:	84.25	-20.48		-0.46		-1.20	-{	5.30 0.	000	0.000		
Unmitigated Noise	Levels (witho	out Topo and										
,,	Leq Peak Hou			Leq Ev		Leq I	•	Ldn		NEL		
Autos:	67.	-	65.6		63.8		57.8	66.		67.0		
Medium Trucks:	61.	-	59.8		53.4		51.9	60.	-	60.5		
Heavy Trucks:	62.		60.7		51.7		52.9	61.	-	61.4		
Vehicle Noise:	69.	-	67.6		64.4		59.8	68.	3	68.8		
Centerline Distanc	e to Noise Co	ntour (in feet	)									
			L	70 d		65 0		60 dBA		dBA		
			Ldn:	50		10	-	233	-	01		
		C	NEL:	54	ŀ	11	6	250	5	38		

FHWA-RD-77-108 F	IIGHWA	Y NOISE PR	EDICTI	ON MODEL					
Scenario: Existing		Project Name: Bedford Marketplace							
Road Name: Cajalco Rd.			Job N	umber: 12751					
Road Segment: e/o I-15 SB Ramps									
SITE SPECIFIC INPUT DATA				IOISE MODEL INPUTS					
Highway Data		Site Con	ditions	(Hard = 10, Soft = 15)					
Average Daily Traffic (Adt): 20,220 vehicles				Autos: 15					
Peak Hour Percentage: 10%		Mee	dium Tru	icks (2 Axles): 15					
Peak Hour Volume: 2,022 vehicles		Hea	avy Truc	cks (3+ Axles): 15					
Vehicle Speed: 45 mph		Vehicle I	AL.						
Near/Far Lane Distance: 76 feet				Day Evening Night D	- it .				
		veni	cleType	, ,	aily				
Site Data					.429				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.8 Heavy Trucks: 86.5% 2.7% 10.8% 0.74							
Barrier Type (0-Wall, 1-Berm): 0.0		F	leavy II	rucks: 86.5% 2.7% 10.8% 0	.749				
Centerline Dist. to Barrier: 65.0 feet		Noise Sc	urce El	evations (in feet)					
Centerline Dist. to Observer: 65.0 feet			Auto	1 /					
Barrier Distance to Observer: 0.0 feet		Mediur	n Trucks						
Observer Height (Above Pad): 5.0 feet			v Trucks		n				
Pad Elevation: 0.0 feet			·		-				
Road Elevation: 0.0 feet		Lane Eq	ıivalent	Distance (in feet)					
Road Grade: 0.0%			Autos	s: 52.972					
Left View: -90.0 degrees	6	Mediur	n Trucks	s: 52.804					
Right View: 90.0 degrees	6	Heav	y Trucks	s: 52.821					
FHWA Noise Model Calculations		1							
VehicleType REMEL Traffic Flow	Distanc	e Finite	Road	Fresnel Barrier Atten Berm A	tten				
Autos: 68.46 1.11	-1	0.48	-1.20	-4.70 0.000	0.00				
Medium Trucks: 79.45 -16.13	-1	0.46	-1.20	-4.88 0.000	0.00				
Heavy Trucks: 84.25 -20.09	-	0.46	-1.20	-5.30 0.000	0.00				
Unmitigated Noise Levels (without Topo and b		,		F					
VehicleType Leq Peak Hour Leq Day		Evening	Leq	Night Ldn CNEL					
	6.0	64.2		58.2 66.8	67.				
	0.2	53.8		52.2 60.7	60.				
	1.1	52.0		53.3 61.7	61.				
	8.0	64.8		60.2 68.7	69.				
Centerline Distance to Noise Contour (in feet)									
		70 dBA		dBA 60 dBA 55 dBA	9				
	dn:	53	11	15 247 532					
CN		57		23 265 571					

	FHW	A-RD-77-108	HIGH	WAY N	OISE PR	EDICTIO	N MOD	EL		_	
	o: Existing e: Cajalco Rd. t: e/o I-15 NB	Ramps				Project N Job Nur			d Marketpla	ace	
	SPECIFIC IN	PUT DATA							INPUTS	5	
Highway Data				3	Site Con	ditions (H	lard = 1	0, So	ft = 15)		
Average Daily 1	Fraffic (Adt): 3	0,314 vehicle	s					utos:	15		
Peak Hour F	Percentage:	10%				dium Truc			15		
		3,031 vehicle	s		Hea	avy Truck	s (3+ A)	des):	15		
	icle Speed:	45 mph			Vehicle I	Nix					
Near/Far Lan	e Distance:	76 feet			Vehi	cleType	L	Day	Evening	Night	Daily
Site Data						Au	tos: 7	7.5%	12.9%	9.6%	97.42%
Bar	rier Height:	0.0 feet			Me	edium Tru	cks: 8	4.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wa		0.0			ŀ	leavy Tru	cks: 8	6.5%	2.7%	10.8%	0.74%
Centerline Dis		65.0 feet		7	Noise So	urce Elev	vations	(in fe	et)		
Centerline Dist. t		65.0 feet				Autos:			.,		
Barrier Distance t		0.0 feet			Mediur	n Trucks:	2.2	97			
Observer Height (A	,	5.0 feet			Heav	y Trucks:	8.0	06	Grade Adji	ustment	: 0.0
	d Elevation:	0.0 feet		-	<b>F</b>		N-4				
	d Elevation:	0.0 feet		1	Lane Equ	Autos:			eet)		
F	Road Grade: Left View:	0.0%			Madium	n Trucks:	52.9 52.8				
	Right View:	-90.0 degree 90.0 degree				y Trucks:					
FHWA Noise Mode	Calculation										
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fresne	1	Barrier Atte	en Ber	m Atten
Autos:	68.46	2.87		-0.48	3	-1.20	-	4.70	0.0	00	0.000
Medium Trucks:	79.45	-14.37		-0.46	3	-1.20	-	4.88	0.0	00	0.000
Heavy Trucks:	84.25	-18.33		-0.46	6	-1.20	-	5.30	0.0	00	0.000
Unmitigated Noise			barrie	er atten	uation)						
	Leq Peak Hou			Leq Ev	v	Leq N	•		Ldn		NEL
Autos:	69.	-	67.7		66.0		59.9		68.5		69.2
Medium Trucks:	63.		61.9		55.5		54.0		62.5		62.7
Heavy Trucks:	64.	-	62.8		53.8		55.1		63.4		63.5
Vehicle Noise:	71.	5	69.7		66.6		61.9		70.5		70.9
Centerline Distanc	e to Noise Co	ntour (in feet	)								
			L	70 c		65 dE			0 dBA		dBA
			Ldn:	70	υ	150	1		324	6	698
		-	NFI :	7	-	161			347	_	'48

	FHV	VA-RD-77-108	HIGHWA	Y NOISE	PREDICT	ION MOD	EL					
Road Nam	<i>io:</i> Existing ne: Cajalco Rd nt: e/o Grand (			Project Name: Bedford Marketplace Job Number: 12751								
SITE	SPECIFIC IN	IPUT DATA			P	IOISE M	ODEI		5			
Highway Data				Site Conditions (Hard = 10, Soft = 15)								
Average Daily	Traffic (Adt):	18,024 vehicle	s			A	utos:	15				
Peak Hour	Percentage:	10%		٨	ledium Tr	ucks (2 Ax	des):	15				
Peak H	lour Volume:	1,802 vehicle	s	ŀ	leavy Tru	cks (3+ A)	des):	15				
Ve	hicle Speed:	45 mph		Vehicl	e Mix							
Near/Far La	ne Distance:	76 feet		Ve	hicleType	e [	Day	Evening	Night	Daily		
Site Data							7.5%	12.9%	v	97.42%		
Ba	rrier Height:	0.0 feet			Medium T	rucks: 8	4.8%	4.9%	10.3%	1.84%		
Barrier Type (0-W		0.0			Heavy T	rucks: 8	6.5%	2.7%	10.8%	0.74%		
Centerline Di		65.0 feet		Malaa		levations	() f	- 41				
Centerline Dist.	to Observer:	65.0 feet		Noise				et)				
Barrier Distance	to Observer:	0.0 feet			Auto							
Observer Height (Above Pad): 5.0 feet					ium Truck avy Truck			Grade Adj	underso met	0.0		
Pad Elevation: 0.0 feet				He	avy Truck	s: 8.0	J6	Grade Adj	usuneni.	0.0		
Road Elevation: 0.0 feet				Lane E	quivalen	t Distance	e (in f	eet)				
	Road Grade:	0.0%			Auto	s: 52.9	72					
	Left View:	-90.0 degree	es	Med	ium Truck	s: 52.8	04					
	Right View:	90.0 degree	es	He	avy Truck	s: 52.8	21					
FHWA Noise Mod	el Calculation	s										
VehicleType	REMEL	Traffic Flow	Distand	ce Fini	te Road	Fresne	e/ 1	Barrier Atte	en Ben	m Atten		
Autos:	68.46	0.61	-	0.48	-1.20	-	4.70	0.0	00	0.00		
Medium Trucks:	79.45	-16.63	-	0.46	-1.20	-	4.88	0.0	00	0.000		
Heavy Trucks:	84.25	-20.59	-	0.46	-1.20	-	5.30	0.0	00	0.00		
	- I I- (	out Topo and	barrier at	ttenuation	)							
Unmitigated Nois	e Leveis (with			a Evenina		Night		Ldn	CI	VEL		
Unmitigated Nois VehicleType	Leq Peak Hou	ir Leq Day	Le	q Evening	Leq	Nigin		66.3				
VehicleType Autos:	Leq Peak Hou 67	.4	65.5	63	.7	57.7						
VehicleType Autos: Medium Trucks:	Leq Peak Hou 67 61	.4 .2	65.5 59.7	63 53	.7 .3	57.7 51.7		60.2		60.4		
VehicleType Autos: Medium Trucks: Heavy Trucks:	Leq Peak Hou 67 61 62	.4 .2 .0	65.5 59.7 60.6	63 53 51	7 3 5	57.7 51.7 52.8		60.2 61.2		60.4 61.3		
VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	Leq Peak Hou 67 61 62 69	.4 .2 .0 .2	65.5 59.7 60.6 67.5	63 53	7 3 5	57.7 51.7		60.2		60. 61.		
VehicleType Autos: Medium Trucks: Heavy Trucks:	Leq Peak Hou 67 61 62 69	.4 .2 .0 .2	65.5 59.7 60.6 67.5	63 53 51 64	7 3 5 3	57.7 51.7 52.8 59.7		60.2 61.2 68.2		60.4 61.3 68.3		
VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	Leq Peak Hou 67 61 62 69	.4 .2 .0 .2 Dontour (in feet	65.5 59.7 60.6 67.5	63 53 51 64 70 dBA	7 3 5 3 65	57.7 51.7 52.8 59.7 dBA		60.2 61.2 68.2 0 dBA	55	66.9 60.4 61.3 68.7 dBA		
VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	Leq Peak Hou 67 61 62 69	.4 .2 .0 .2 Dontour (in feet	65.5 59.7 60.6 67.5	63 53 51 64	7 3 5 3 65 1	57.7 51.7 52.8 59.7		60.2 61.2 68.2	55	60 61 68.		

Friday, November 22, 2019

Friday, November 22, 2019

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	FHW	/A-RD-77-108	HIGHW	AY NO	DISE PF	REDICTI	ON MOD	EL			
	<ul> <li>Existing</li> <li>Cajalco Rd.</li> <li>t: e/o Temesc</li> </ul>	al Cyn. Rd.					Name: E umber: 1		Marketpla	ace	
SITE S	<b>PECIFIC IN</b>	PUT DATA							. INPUTS	5	
Highway Data				S	ite Con	ditions	(Hard = 1	10, Sof	ft = 15)		
Average Daily 1 Peak Hour F	, ,	0,076 vehicle 10%	5				cks (2 A		15 15		
Peak Ho	our Volume:	2,008 vehicle	3		He	avy Truc	ks (3+ A	xles):	15		
Ver Near/Far Lan	icle Speed:	45 mph 76 feet		v	ehicle l						
Neal/Fai Lan	e Distance.	70 Teel			Veh	icleType			Evening	Night	Daily
Site Data						A	utos: ī	77.5%	12.9%	9.6%	97.42%
Bar	rier Heiaht:	0.0 feet			Me	edium Tr	ucks: 8	34.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wa		0.0			ŀ	leavy Tr	ucks: 8	36.5%	2.7%	10.8%	0.74%
Centerline Dis		65.0 feet		Ν	loise So	ource El	evations	in fee	et)		
Centerline Dist. t		65.0 feet				Autos	s: 0.0	00			
Barrier Distance t	o Observer:	0.0 feet			Mediu	m Trucks	: 2.2	97			
Observer Height (A	lbove Pad): d Elevation:	5.0 feet 0.0 feet			Heav	y Trucks	8.0	06 0	Grade Adji	ustment	0.0
	d Elevation:	0.0 feet		L	ane Ea	uivalent	Distanc	e (in fe	eet)		
	oad Grade:	0.0%				Autos			,		
	Left View:	-90.0 degree			Mediu	m Trucks					
	Right View:	90.0 degree				ry Trucks					
FHWA Noise Mode	l Calculations	;									
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresne	el E	Barrier Atte	en Ber	m Atten
Autos:	68.46	1.08		-0.48		-1.20	-	4.70	0.0	00	0.000
Medium Trucks:	79.45	-16.16		-0.46		-1.20	-	4.88	0.0	00	0.000
Heavy Trucks:	84.25	-20.12		-0.46		-1.20	-	5.30	0.0	00	0.000
Unmitigated Noise	Levels (with	out Topo and									
VehicleType	Leq Peak Hou	r Leq Day	L	Leq Ev	ening	Leq I	Vight		Ldn	C	VEL
Autos:	67.	9	66.0		64.2		58.1		66.8		67.4
Medium Trucks:	61.	6	60.1		53.8		52.2		60.7		60.9
Heavy Trucks:	62.	5	61.1		52.0		53.3		61.6		61.7
Vehicle Noise:	69.	7	68.0		64.8		60.1		68.7		69.1
Centerline Distance	e to Noise Co	ntour (in feet	)	70.		0-		~			10.4
			∟	70 d		65 0			) dBA		dBA
			Ldn:	53		11			246		30
		Ci	VEL:	57		12	22	:	264	5	68

	FHW	/A-RD-77-108	HIGH	IWAY N	IOISE PF	REDICTI	ON MOD	EL				
Scenari	io: Existing Plu	s Project			Project Name: Bedford Marketplace							
Road Nam	e: Masters Dr.					Job N	umber: 12	2751				
Road Segmer	nt: n/o Californ	ia Av.										
	SPECIFIC IN	PUT DATA							INPUTS	5		
Highway Data				4	Site Con	ditions	(Hard = 1	0, So	ft = 15)			
Average Daily	Traffic (Adt):	4,682 vehicle	s				Α	utos:	15			
Peak Hour	Percentage:	10%			Me	dium Tru	icks (2 Ax	(les):	15			
Peak H	our Volume:	468 vehicle	s		He	avy Truc	ks (3+ Ax	des):	15			
Vel	hicle Speed:	40 mph			Vehicle I	Mix						
Near/Far Lar	ne Distance:	14 feet		-		icleType	5	Dav	Evening	Night	Daily	
Site Data					ven			7.5%	12.9%	9.6%		
		0.0 feet			Me	edium Tr		4.8%	4.9%	10.3%	1.849	
Barrier Type (0-W	rier Height:	0.0 teet 0.0				leavy Tr		6.5%	2.7%	10.8%	0.749	
Centerline Dis		34.0 feet										
Centerline Dist.		34.0 feet		1	Noise So	ource El	evations	(in fe	et)			
Barrier Distance		0.0 feet				Autos	s: 0.00	00				
Observer Height (		5.0 feet			Mediur	n Trucks	s: 2.29	97				
0 1	ad Flevation:	0.0 feet			Heav	y Trucks	s: 8.00	06 (	Grade Adj	ustment:	0.0	
	ad Elevation: ad Elevation:	0.0 feet		-	l ane Fr	uivalent	Distance	) (in fi	eet)			
	Road Grade:	0.0%		F	Lano Lq	Autos						
1	Left View:	-90.0 degree			Modiu	n Trucks						
	Right View:	90.0 degree				v Trucks						
	Night view.	90.0 degre	25		neav	y much	3. 00.4	51				
FHWA Noise Mode	el Calculation	5										
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresne	l E	Barrier Atte	en Ber	m Atten	
Autos:	66.51	-4.74		2.4	8	-1.20		4.53	0.0	00	0.00	
Medium Trucks:	77.72	-21.97		2.5	-	-1.20		4.86	0.0		0.00	
Heavy Trucks:	82.99	-25.93		2.5	2	-1.20		5.67	0.0	00	0.00	
Unmitigated Noise			barrie	er atten	uation)							
	Leq Peak Hou			Leq E	vening	Leq	Night		Ldn		VEL	
Autos:	63		61.2		59.4		53.3		62.0		62.	
Medium Trucks:	57.		55.6		49.2		47.7		56.1		56.	
Heavy Trucks:	58.		57.0		47.9		49.2		57.5		57.	
Vehicle Noise: 65.1 63.3		.1	63.3		60.1		55.5		64.1		64.	
venicie noise.		ntour (in feet	)		1							
	ce to Noise Co	intour (in reet										
	ce to Noise Co			70 0		65 (		00	0 dBA		dBA	
Centerline Distand	ce to Noise Co	•	Ldn: NFL :	1	dBA 4 5	2	9 1	D	63 68	1	dBA 37 46	

		NOISE PF						
Scenario: Existing Plus Project						d Marketpla	ace	
Road Name: Masters Dr.			Job N	umber: 1	2751			
Road Segment: s/o California Av.								
SITE SPECIFIC INPUT DATA						L INPUTS	5	
Highway Data		Site Con	ditions	(Hard =	10, So	oft = 15)		
Average Daily Traffic (Adt): 9,364 vehicles				A	Autos:	15		
Peak Hour Percentage: 10%		Me	dium Tru	cks (2 A	xles):	15		
Peak Hour Volume: 936 vehicles		He	avy Truc	ks (3+ A	xles):	15		
Vehicle Speed: 40 mph		Vehicle I	Mix					
Near/Far Lane Distance: 14 feet			icleTvpe		Dav	Evening	Niaht	Dailv
Site Data			-	utos:	77.5%	~	9.6%	97.42
Barrier Height: 0.0 feet		Me	edium Ti	ucks: 8	34.8%	4.9%	10.3%	1.84
Barrier Type (0-Wall, 1-Berm): 0.0		ŀ	leavy Ti	ucks: 8	36.5%	2.7%	10.8%	0.74
Centerline Dist. to Barrier: 34.0 feet		Noise So	ource El	evations	in f	eet)		
Centerline Dist. to Observer: 34.0 feet			Auto					
Barrier Distance to Observer: 0.0 feet		Mediu	m Truck	2.2	97			
Observer Height (Above Pad): 5.0 feet		Heav	v Truck		06	Grade Adj	ustment	: 0.0
Pad Elevation: 0.0 feet								
Road Elevation: 0.0 feet		Lane Eq				feet)		
Road Grade: 0.0%			Auto					
Left View: -90.0 degrees			m Truck					
Right View: 90.0 degrees		Heav	y Truck:	:: 33.4	07			
FHWA Noise Model Calculations								
	Distance		Road	Fresne	e/ -4.53	Barrier Atte		m Atter
						0.0	00	0.00
Autos: 66.51 -1.72	2.4		-1.20					
Autos: 66.51 -1.72 Medium Trucks: 77.72 -18.96	2.5	53	-1.20		4.86	0.0		
Autos:         66.51         -1.72           Medium Trucks:         77.72         -18.96           Heavy Trucks:         82.99         -22.92	2.8 2.8	53 52				0.0		
Autos: 66.51 -1.72 Medium Trucks: 77.72 -18.96 Heavy Trucks: 82.99 -22.92 Unmitigated Noise Levels (without Topo and barr	2.5 2.5 rier atte	53 52 nuation)	-1.20 -1.20		4.86	0.0	00	0.00
Autos: 66.51 -1.72 Medium Trucks: 77.72 -18.96 Heavy Trucks: 82.99 -22.92 Umnitigated Noise Levels (without Topo and barn VehicleType Leq Peak Hour Leq Day	2.5 2.5 rier atte Leq E	53 52 nuation) Evening	-1.20 -1.20	Vight	4.86	0.0 Ldn	00 C	0.00
Autos:         66.51         -1.72           Medium Trucks:         77.72         -18.96           Heavy Trucks:         82.99         -22.92           Unmitigated Noise Levels (without Topo and bar VehicleType         Leq Peak Hour         Leq Day           Autos:         66.1         64.2	2.8 2.8 <b>rier atte</b> Leq E	53 52 nuation) Evening 62.4	-1.20 -1.20 Leq	Vight 56.3	4.86	0.0 Ldn 65.0	00 C	0.0
Autos:         66.51         -1.72           Medium Trucks:         77.72         -18.96           Heavy Trucks:         82.99         -22.92           Unmitigated Noise Levels (without Topo and bar VehicleType         Leq Peak Hour         Leq Day           Autos:         66.1         64.2           Medium Trucks:         60.1         58.6	2.5 2.5 rier atter Leq E	53 52 Evening 62.4 52.2	-1.20 -1.20 Leq	Night 56.3 50.7	4.86	0.0 Ldn 65.0 59.1	00 C	0.0 NEL 65
Autos:         66.51         -1.72           Medium Trucks:         77.72         -18.96           Heavy Trucks:         82.99         -22.92           Umritigated Noise Levels (without Topo and barr         VehicleType         Leg Peak Hour         Leg Day           Autos:         66.1         64.2         64.8         64.1           Medium Trucks:         60.1         54.8         64.0         64.0           Heavy Trucks:         61.4         60.0         64.4         60.0	2.5 2.5 rier atter Leq E	53 52 Evening 62.4 52.2 50.9	-1.20 -1.20 Leq	Night 56.3 50.7 52.2	4.86	0.0 Ldn 65.0 59.1 60.5	00	0.00 NEL 65 59 60
Autos:         66.51         -1.72           Medium Trucks:         77.72         -18.96           Heavy Trucks:         82.99         -22.92           Ummitigated Noise Levels (without Topo and barn VehicleType         Leq Peak Hour         Leq Day           Autos:         66.1         64.2           Medium Trucks:         60.1         58.6           Heavy Trucks:         61.4         60.0           Vehicle Noise:         68.1         66.4	2.5 2.5 rier atter Leq E	53 52 Evening 62.4 52.2	-1.20 -1.20 Leq	Night 56.3 50.7	4.86	0.0 Ldn 65.0 59.1	00	0.0 NEL 65 59 60
Autos:         66.51         -1.72           Medium Trucks:         77.72         -18.96           Heavy Trucks:         82.99         -22.92           Umritigated Noise Levels (without Topo and barr         VehicleType         Leg Peak Hour         Leg Day           Autos:         66.1         64.2         64.8         64.1           Medium Trucks:         60.1         54.8         64.0         64.0           Heavy Trucks:         61.4         60.0         64.4         60.0	2.5 <b>rier atte</b> <b>Leq E</b> 2 3 0 4	53 52 Evening 62.4 52.2 50.9	-1.20 -1.20 Leq	Vight 56.3 50.7 52.2 58.5	-4.86 -5.67	0.0 Ldn 65.0 59.1 60.5	00	0.0 NEL 65 59 60
Autos:         66.51         -1.72           Medium Trucks:         77.72         -18.96           Heavy Trucks:         82.99         -22.92           Umitigated Noise Levels (without Topo and ban VehicleType         Leq Peak Hour         Leq Day           Autos:         66.1         64.2           Medium Trucks:         60.1         54.6           Heavy Trucks:         61.4         60.0           Vehicle Noise:         68.1         66.4	2.8 2.8 rier atter Leq E 2 3 0 4	53 52 Evening 62.4 52.2 50.9 63.1	-1.20 -1.20 Leq	Vight 56.3 50.7 52.2 58.5	-4.86 -5.67	0.0 Ldn 65.0 59.1 60.5 67.1	00 C	65 59 60 67

	FHW	A-RD-77-108 HIG	HWAY	NOISE PF	REDICTI	ON MOD	DEL			
Road Nam	io: Existing Plus e: Masters Dr. nt: n/o Bennet A					Name: E umber: 1		d Marketpl	ace	
	SPECIFIC IN	PUT DATA			N	IOISE N	10DE	L INPUT	s	
Highway Data				Site Con	ditions	(Hard =	10, So	oft = 15)		
Average Daily	( )	7,084 vehicles					Autos:			
	Percentage:	10%				icks (2 A		15		
	our Volume:	708 vehicles		He	avy Truc	:ks (3+ A	xles):	15		
	hicle Speed:	40 mph		Vehicle I	Mix					
Near/Far Lai	ne Distance:	14 feet		Veh	icleType		Day	Evening	Night	Daily
Site Data					1	Autos:	77.5%	12.9%	9.6%	97.42%
Bai	rier Heiaht:	0.0 feet		Me	edium Ti	rucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-W		0.0		ŀ	leavy Ti	rucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dis	st. to Barrier:	34.0 feet	ł	Noise So	ource Fl	evations	: (in fi	pet)		
Centerline Dist.	to Observer:	34.0 feet	ŀ		Auto					
Barrier Distance	to Observer:	0.0 feet		Modiu	n Truck					
Observer Height (.	Above Pad):	5.0 feet			v Truck			Grade Ad	ustment	0.0
Pa	ad Elevation:	0.0 feet			,					
Roa	ad Elevation:	0.0 feet		Lane Eq				feet)		
I	Road Grade:	0.0%			Auto					
	Left View:	-90.0 degrees			n Truck					
	Right View:	90.0 degrees		Heav	y Truck	s: 33.4	107			
FHWA Noise Mod	el Calculations									
VehicleType	REMEL	Traffic Flow D	listance	Finite	Road	Fresn	el	Barrier Att	en Bei	rm Atten
Autos:	66.51	-2.94	2.4	18	-1.20		-4.53	0.0	000	0.000
Medium Trucks:	77.72	-20.18	2.5	53	-1.20		-4.86	0.0	000	0.000
Heavy Trucks:	82.99	-24.13	2.5	52	-1.20		-5.67	0.0	000	0.000
Unmitigated Noise	e Levels (witho	ut Topo and bari	rier atter	nuation)						
VehicleType	Leq Peak Hour			vening	Leq	Night		Ldn		NEL
Autos:	64.9			61.2		55.1		63.8		64.4
Medium Trucks:	58.9			51.0		49.5		57.9		58.1
Heavy Trucks:	60.2			49.7		51.0		59.3		59.5
Vehicle Noise:	66.9	9 65.1		61.9		57.3		65.9	9	66.3
Centerline Distant	ce to Noise Col	ntour (in feet)					r			
				dBA		dBA	e	60 dBA		dBA
		Ldn.		18	-	19		84		180
		CNEL	: 1	19	4	2		89	1	193

Friday, November 22, 2019

	FHW	A-RD-77-108	HIGH	NAY N	OISE PI	REDICT	ION MOI	DEL				
	Existing Plue Masters Dr. n/o Eagle G	,			Project Name: Bedford Marketplace Job Number: 12751							
SITE S	PECIFIC IN	PUT DATA							L INPUT	s		
Highway Data				5	Site Cor	nditions	(Hard =	10, Sc	oft = 15)			
Average Daily Tr Peak Hour P Peak Hou	. ,	6,648 vehicle 10% 665 vehicle					ucks (2 A cks (3+ A	/	15 15 15			
Vehi	cle Speed:	40 mph			/ehicle	Mix						
Near/Far Lane	e Distance:	14 feet		H		icleType		Dav	Evening	Night	Dailv	
Site Data					1011			77.5%		9.6%		
	ier Heiaht:	0.0 feet			М	edium T	rucks:	84.8%	4.9%	10.3%		
Barrier Type (0-Wal		0.0				Heavy T	rucks:	86.5%	2.7%	10.8%	0.74%	
Centerline Dist.		34.0 feet		1	Voise S	ource E	levation	s (in fe	eet)			
Centerline Dist. to		34.0 feet				Auto	s: 0.0	000				
Barrier Distance to		0.0 feet			Mediu	m Truck	s: 2.2	297				
Observer Height (Al	,	5.0 feet			Hear	y Truck	s: 8.0	006	Grade Adj	ustment	: 0.0	
	Elevation:	0.0 feet		-			Distant		(			
	Elevation:	0.0 feet		-	ane Eq	Auto	t Distand		eet)			
Ro	oad Grade:	0.0%				71010	0. 00.					
I	Left View: Right View:	-90.0 degre 90.0 degre				m Truck /y Truck						
FHWA Noise Model	Calculations	;										
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresn	el	Barrier Att	en Be	rm Atten	
Autos:	66.51	-3.21		2.48	3	-1.20		-4.53	0.0	000	0.000	
Medium Trucks:	77.72	-20.45		2.53		-1.20		-4.86		000	0.000	
Heavy Trucks:	82.99	-24.41		2.52		-1.20		-5.67	0.0	000	0.000	
Unmitigated Noise								1				
VehicleType L Autos:	eq Peak Hour		62.7	Leq Ev	ening 60.9	,	Night 54.9		Ldn 63.5	-	NEL 64.1	
Autos: Medium Trucks:	64. 58	-	62.7 57.1		60.9 50.7		54.9 49.2		63.5 57.6		64.1 57.9	
Heavy Trucks:	58. 59.	-	58.5		50.7 49.5		49.2		57.6		57.5	
Vehicle Noise:	66.	-	64.9		61.6		57.0		65.6		66.0	
Centerline Distance	to Noise Co	ntour (in feet	)									
				70 a	IBA	65	dBA	6	0 dBA	55	dBA	
			Ldn:	17	7	3	37		80		172	
		C	NEL:	18	В	4	10		86		185	

	FHW	A-RD-77-108 HI	GHWAY	NOISE PF	EDICTIC	MODEL							
	o: Existing Plus			Project Name: Bedford Marketplace									
	e: Bedford Cyr				Job Nu	mber: 127	51						
Road Segmer	nt: s/o El Cerrite	o Rd.											
	SPECIFIC IN	PUT DATA					DEL INPUT	s					
Highway Data				Site Conditions (Hard = 10, Soft = 15)									
Average Daily	Traffic (Adt):	9,490 vehicles				Auto	os: 15						
Peak Hour	Percentage:	10%		Me	dium Truc	ks (2 Axle	s <i>):</i> 15						
Peak H	our Volume:	949 vehicles		He	avy Truck	s (3+ Axle	s <i>):</i> 15						
Vel	nicle Speed:	40 mph		Vehicle I	Niv								
Near/Far Lar	e Distance:	24 feet		-	cleType	Dav	/ Evening	Night Daily					
Site Data				ven		utos: 77.		9.6% 97.42					
				M	dium Tru			10.3% 1.84					
	rier Height:	0.0 feet			leavy Tru			10.3% 1.84					
Barrier Type (0-Wa	. ,	0.0			leavy IIu	UKS. 00.3	370 Z.170	10.0% 0.74					
Centerline Dis		38.0 feet		Noise Sc	ource Ele	vations (ir	1 feet)						
Centerline Dist. t		38.0 feet			Autos:	0.000							
Barrier Distance t		0.0 feet		Mediur	n Trucks:	2.297							
Observer Height (/		5.0 feet		Heav	y Trucks:	8.006	Grade Ad	ustment: 0.0					
	d Elevation:	0.0 feet											
	d Elevation:	0.0 feet		Lane Eq		Distance (	in feet)						
F	Road Grade:	0.0%			Autos:	00.101							
	Left View:	-90.0 degrees			n Trucks:	00.101							
	Right View:	90.0 degrees		Heav	y Trucks:	36.181							
FHWA Noise Mode	el Calculations	:											
VehicleType	REMEL	Traffic Flow	Distance	Finite	Road	Fresnel	Barrier Att	en Berm Atter					
Autos:	66.51	-1.67	1	.96	-1.20	-4.5	57 0.0	0.00					
Medium Trucks:	77.72	-18.91	2	.01	-1.20	-4.8	37 0.0	0.00					
Heavy Trucks:	82.99	-22.86	2	.00	-1.20	-5.5	59 0.0	0.00					
Unmitigated Noise	Levels (witho	ut Topo and ba	rrier atte	enuation)									
,1	Leq Peak Hour			Evening	Leq N	•	Ldn	CNEL					
Autos:	65.			61.9		55.9	64.5						
Medium Trucks:	59.			51.7		50.2	58.7						
Heavy Trucks:	60.	9 59	5	50.5		51.7	60.1	60					
Vehicle Noise:	67.	6 65	9	62.6		58.1	66.6	67					
Centerline Distand	e to Noise Co	ntour (in feet)				T		1					
				0 dBA	65 di		60 dBA	55 dBA					
		Ld	n:	23	49		105	226					
		CNE		24	52		112	242					

FHWA-RD-77-108 HIGHWAY	VINISE PREDICTION MODEL								
Scenario: Existing Plus Project Road Name: Bedford Cyn. Rd. Road Segment: n/o Georgetown Dr.	Project Name: Bedford Marketplace Job Number: 12751								
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS								
Highway Data	Site Conditions (Hard = 10, Soft = 15)								
Average Daily Traffic (Adt): 8,926 vehicles	Autos: 15								
Peak Hour Percentage: 10%	Medium Trucks (2 Axles): 15								
Peak Hour Volume: 893 vehicles	Heavy Trucks (3+ Axles): 15								
Vehicle Speed: 40 mph	Vehicle Mix								
Near/Far Lane Distance: 24 feet	VehicleType Day Evening Night Daily								
Site Data	Autos: 77.5% 12.9% 9.6% 97.42%								
Barrier Height: 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%								
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%								
Centerline Dist. to Barrier: 38.0 feet	Noise Source Elevations (in feet)								
Centerline Dist. to Observer: 38.0 feet	Autos: 0.000								
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 2.297								
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006 Grade Adjustment: 0.0								
Pad Elevation: 0.0 feet									
Road Elevation: 0.0 feet	Lane Equivalent Distance (in feet)								
Road Grade: 0.0%	Autos: 36.401 Medium Trucks: 36.157								
Left View: -90.0 degrees Right View: 90.0 degrees	Heavy Trucks: 36.181								
FHWA Noise Model Calculations									
VehicleType REMEL Traffic Flow Distance	e Finite Road Fresnel Barrier Atten Berm Atten								
Autos: 66.51 -1.93 1	.96 -1.20 -4.57 0.000 0.00								
Medium Trucks: 77.72 -19.17 2	2.01 -1.20 -4.87 0.000 0.00								
Heavy Trucks: 82.99 -23.13 2	2.00 -1.20 -5.59 0.000 0.00								
Unmitigated Noise Levels (without Topo and barrier att									
	Evening Leq Night Ldn CNEL								
Autos: 65.3 63.4	61.7 55.6 64.2 64.								
Medium Trucks: 59.4 57.8	51.5 49.9 58.4 58.								
Heavy Trucks: 60.7 59.2	50.2 51.5 59.8 59.								
Vehicle Noise: 67.4 65.6	62.3 57.8 66.3 66.								
Centerline Distance to Noise Contour (in feet)	0 dBA 65 dBA 60 dBA 55 dBA								
Zdn: CNFL :	22         47         101         217           23         50         108         232								

	FHW	A-RD-77-108 H	IGHWAY	NOISE P	REDICTI	ON MOD	EL				
Road Nam	io: Existing Plu ne: Bedford Cyr nt: n/o Eagle G	n. Rd.		Project Name: Bedford Marketplace Job Number: 12751							
SITE	SPECIFIC IN	PUT DATA						INPUTS	5		
Highway Data				Site Cor	nditions	(Hard = 1	10, So	ft = 15)			
Average Daily	Traffic (Adt):	9,876 vehicles				A	utos:	15			
Peak Hour	Percentage:	10%		Me	edium Tru	icks (2 A)	des):	15			
Peak H	lour Volume:	988 vehicles		He	avy Truc	ks (3+ A)	kles):	15			
Ve	hicle Speed:	40 mph		Vehicle	Mix						
Near/Far La	ne Distance:	24 feet			nicleType	1	Day	Evening	Night	Daily	
Site Data				ver			7.5%	12.9%		97.42%	
					ر Iedium Tr		4.8%	4.9%	9.0%	1.84%	
	rrier Height:	0.0 feet			Heavy Tr		36.5%	2.7%	10.3%	0.74%	
Barrier Type (0-W		0.0			neavy n	uchs. c	0.370	2.170	10.070	0.7470	
Centerline Dis		38.0 feet		Noise S	ource El	evations	(in fe	et)			
Centerline Dist.		38.0 feet			Autos	s: 0.0	00				
Barrier Distance		0.0 feet		Mediu	m Trucks	: 2.2	97				
Observer Height (	,	5.0 feet		Hea	vy Trucks	8: 8.0	06 (	Grade Adj	ustment.	0.0	
	ad Elevation:	0.0 feet		Long Ed	wheelend	Distance	o (in f	a a 4 1			
	ad Elevation:	0.0 feet		Lane Eq	Auto:	Distance		eet)			
	Road Grade:	0.0%		A 4 11-	Autos m Trucks						
	Left View:	-90.0 degrees									
	Right View:	90.0 degrees		неа	vy Trucks	36.1	81				
FHWA Noise Mod	el Calculations	;		1							
VehicleType	REMEL	Traffic Flow	Distance	Finite	Road	Fresne	el E	Barrier Atte	en Ber	m Atten	
Autos:	66.51	-1.49	1	.96	-1.20	-	4.57	0.0	00	0.000	
Medium Trucks:	77.72	-18.73	2	.01	-1.20	-	4.87	0.0	00	0.000	
Heavy Trucks:	82.99	-22.69	2	.00	-1.20	-	5.59	0.0	00	0.000	
Unmitigated Noise			arrier atte	enuation)							
VehicleType	Leq Peak Hour		,	Evening	'	Night		Ldn		VEL	
Autos:	65.		3.9	62.1		56.1		64.7		65.3	
Medium Trucks:	59.		3.3	51.9		50.4		58.8		59.1	
Heavy Trucks:	61.	1 59	9.7	50.7	,	51.9		60.3		60.4	
Vehicle Noise:	67.	8 66	6.1	62.8	_	58.2		66.8	_	67.2	
Centerline Distant	ce to Noise Co	ntour (in feet)									
				) dBA	65			0 dBA		dBA	
			dn:	23		0		108		32	
		CNE	=L:	25	5	3		115	2	48	

Friday, November 22, 2019

Friday, November 22, 2019

	FHW	A-RD-77-108	HIGH	WAY N	OISE PF	REDICTIO	ON MOD	EL		
	<ul> <li>Existing Plu</li> <li>Temescal C</li> <li>n/o Cajalco</li> </ul>	yn. Rd.					Name: B ımber: 1:	edford Marketp 2751	lace	
SITE S	SPECIFIC IN	PUT DATA						ODEL INPUT	S	
Highway Data					Site Con	ditions (	(Hard = 1	0, Soft = 15)		
Average Daily T Peak Hour F Poak Hu	Percentage:	5,883 vehicle 10% 1.588 vehicle					A cks (2 Ax ks (3+ Ax	,		
	nicle Speed:	45 mph	5				10 10 10	103). 10		
Near/Far Lan		51 feet		1	/ehicle					
Near/Far Lan	e Distance:	51 teet			Veh	icleType	E	Day Evening	Night	Daily
Site Data						A	utos: 7	7.5% 12.9%	9.6%	97.42%
Bar	rier Heiaht:	0.0 feet			M	edium Tr	ucks: 8	4.8% 4.9%	10.3%	1.84%
Barrier Type (0-Wa	all, 1-Berm):	0.0			1	Heavy Tr	ucks: 8	6.5% 2.7%	10.8%	0.74%
Centerline Dis		53.0 feet		1	Voise So	ource Ele	evations	(in feet)		-
Centerline Dist. t		53.0 feet				Autos	: 0.00	00		
Barrier Distance t	o Observer:	0.0 feet			Mediu	m Trucks	2.29	97		
Observer Height (A	,	5.0 feet			Heav	v Trucks	: 8.00	)6 Grade Ad	ljustment:	0.0
	d Elevation:	0.0 feet		-	_					
	d Elevation:	0.0 feet		1	ane Eq			e (in feet)		
F	Road Grade:	0.0%				Autos				
	Left View: Right View:	-90.0 degre 90.0 degre				m Trucks /y Trucks				
FHWA Noise Mode	Calculations	1								
VehicleType	REMEL	Traffic Flow	Dist	tance	Finite	Road	Fresne	Barrier At	ten Bern	n Atten
Autos:	68.46	0.06		0.34	1	-1.20	-4	4.66 0.	000	0.000
Medium Trucks:	79.45	-17.18		0.36	6	-1.20		4.87 0.	000	0.000
Heavy Trucks:	84.25	-21.14		0.36	6	-1.20	-	5.40 0.	000	0.000
Unmitigated Noise	Levels (witho	out Topo and								-
VehicleType	Leq Peak Hou	r Leq Day	<i>'</i>	Leg Ev	rening	Leq I	Vight	Ldn	CN	EL
Autos:	67.		65.8		64.0		57.9	66.	-	67.2
Medium Trucks:	61.		59.9		53.6		52.0	60.	-	60.7
Heavy Trucks:	62.	-	60.9		51.8		53.1	61.		61.6
Vehicle Noise:	69.		67.8		64.6		59.9	68.	5	68.9
Centerline Distance	e to Noise Co	ntour (in feet	)	70 -		05.	10.4	00 -10 4	55.	
				70 c		65 0		60 dBA	55 0	
			Ldn: NFL :	4:	-	9		195	41	
		Ci	VEL:	4	D	9	(	209	45	U

	FHW	A-RD-77-108 H	IGHWA	Y NOISE P	REDICT	ION MODEL						
	<ul> <li>Existing Pluses</li> <li>Temescal C</li> <li>t: s/o Cajalco</li> </ul>	yn. Rd.				Name: Bedf lumber: 1275		ace				
SITE S	PECIFIC IN	PUT DATA			r	IOISE MOD	EL INPUTS	5				
Highway Data				Site Co	nditions	(Hard = 10, 3	Soft = 15)					
	Percentage:	2,242 vehicles 10% 2,224 vehicles 45 mph		Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15								
Near/Far Lan	· · · · / · · ·	51 feet		Vehicle		-	1 1					
				Ve	hicleType	,	Evening	Night Daily				
Site Data						Autos: 77.5		9.6% 97.42%				
	rier Height:	0.0 feet		v	1edium T			10.3% 1.84%				
Barrier Type (0-Wa	. ,	0.0			Heavy T	rucks: 86.5	% 2.7%	10.8% 0.74%				
Centerline Dis		53.0 feet		Noise S	ource E	levations (in	feet)					
Centerline Dist. to		53.0 feet			Auto	s: 0.000						
Barrier Distance to		0.0 feet		Media	Im Truck	s: 2.297						
Observer Height (A	lbove Pad):	5.0 feet		Hea	vy Truck	s: 8.006	Grade Adi	ustment: 0.0				
	d Elevation:	0.0 feet			·		-					
	d Elevation:	0.0 feet		Lane E		t Distance (ii	1 feet)					
F	oad Grade:	0.0%			Auto							
	Left View:	-90.0 degrees			ım Truck							
	Right View:	90.0 degrees		Hea	vy Truck	s: 46.559						
FHWA Noise Mode	l Calculations	;		_								
VehicleType	REMEL	Traffic Flow	Distanc	e Finite	e Road	Fresnel	Barrier Atte	en Berm Atten				
Autos:	68.46	1.52		0.34	-1.20	-4.66	6 0.0	00 0.00				
Medium Trucks:	79.45	-15.72		0.36	-1.20	-4.8	7 0.0	0.00				
Heavy Trucks:	84.25	-19.67		0.36	-1.20	-5.40	0.0	00 0.00				
Unmitigated Noise	Levels (witho	out Topo and b	arrier at	tenuation)								
VehicleType	Leq Peak Hou	r Leq Day	Leo	q Evening	Leq	Night	Ldn	CNEL				
Autos:	69.		7.2	65.		59.4	68.0					
Medium Trucks:	62.		1.4	55.0		53.5	61.9					
Heavy Trucks:	63.	7 6	2.3	53.3	3	54.5	62.9	63.				
Vehicle Noise:	71.	0 6	9.2	66.	I	61.4	69.9	70.				
Centerline Distanc	e to Noise Co	ntour (in feet)		-								
				70 dBA	65	dBA	60 dBA	55 dBA				
		L	dn:	52	1	13	244	525				

	FHV	VA-RD-77-108	HIGHW	AY NC	DISE PR	EDICTIO	NMOD	EL			
Scenari	io: Existing Plu	us Project				Project N	ame: E	ledfor	d Marketpla	ace	
Road Nam	e: California A	w.				Job Nur	nber: 1	2751			
Road Segmer	nt: w/o Master	s Dr.									
	SPECIFIC IN	IPUT DATA							L INPUTS	5	
Highway Data				S	ite Con	ditions (H	lard = 1	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	5,480 vehicle	5					utos:			
Peak Hour	Percentage:	10%				lium Truc					
Peak H	our Volume:	548 vehicle	S		Hea	vy Truck	s (3+ A	kles):	15		
Vei	hicle Speed:	40 mph		V	ehicle A	lix					
Near/Far Lai	ne Distance:	14 feet		H		cleType	1	Day	Evening	Night	Daily
Site Data						Au	tos: 7	7.5%	12.9%	9.6%	97.42%
Bai	rier Height:	0.0 feet			Me	dium Tru	cks: 8	34.8%	4.9%	10.3%	1.84%
Barrier Type (0-W	•	0.0			H	leavy Tru	cks: 8	86.5%	2.7%	10.8%	0.74%
Centerline Dis		34.0 feet		N	oise So	urce Elev	ations	(in fe	eet)		
Centerline Dist.		34.0 feet				Autos:	0.0	00	,		
Barrier Distance		0.0 feet			Mediur	Trucks:	2.2	97			
Observer Height (	Above Pad):	5.0 feet				/ Trucks:	8.0		Grade Adju	ustment:	0.0
	ad Elevation:	0.0 feet									
	ad Elevation:	0.0 feet		La	ane Equ	ivalent L			feet)		
1	Road Grade:	0.0%				Autos:	33.6				
	Left View:	-90.0 degree				n Trucks:	33.3				
	Right View:	90.0 degree	es		Heav	/ Trucks:	33.4	07			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distar		Finite		Fresne		Barrier Atte		m Atten
Autos:	66.51	-4.05		2.48		-1.20		4.53	0.0		0.000
Medium Trucks:	77.72	-21.29		2.53		-1.20		4.86	0.0		0.000
Heavy Trucks:	82.99	-25.25		2.52		-1.20	-	5.67	0.0	00	0.000
Unmitigated Noise											
VehicleType	Leq Peak Hou			eq Eve	~	Leq N	·		Ldn		VEL
Autos:	63		61.8		60.1		54.0		62.6		63.2
Medium Trucks:	57		56.2		49.9		48.3		56.8		57.0
Heavy Trucks:	59		57.7		48.6		49.9		58.2		58.3
Vehicle Noise:	65	.8	64.0		60.7		56.2		64.7		65.2
Contorlino Distant	ce to Noise Co	ontour (in feet	)								
Centernine Distant				70 dE	RA	65 dE	3A	6	60 dBA	55	dBA
Centenine Distant											
Centenine Distant			Ldn: VFI :	15 16		33			70 75		52 62

	FH\	NA-RD-77-108	HIGHW	AY NC	DISE PREDIC	TION MO	DEL					
	io: Existing Plu e: California A nt: e/o Master	Av.			Project Name: Bedford Marketplace Job Number: 12751							
SITE	SPECIFIC IN	NPUT DATA						INPUTS	5			
Highway Data				S	ite Condition	s (Hard =	10, So	ft = 15)				
Average Daily	Traffic (Adt):	7,320 vehicle	s				Autos:	15				
Peak Hour	Percentage:	10%			Medium 1	rucks (2 A	(xles):	15				
Peak H	our Volume:	732 vehicle	s		Heavy Tr	ucks (3+ A	Axles):	15				
Vel	hicle Speed:	40 mph		V	ehicle Mix							
Near/Far Lar	ne Distance:	14 feet			VehicleTy	20	Dav	Evening	Night	Daily		
Site Data					veniciery		77.5%	12.9%	9.6%			
Bar	rier Height:	0.0 feet			Medium	Trucks:	84.8%	4.9%	10.3%	1.84%		
Barrier Type (0-W		0.0			Heavy	Trucks:	86.5%	2.7%	10.8%	0.74%		
Centerline Dis		34.0 feet		-	,	-						
Centerline Dist.		34.0 feet		N	oise Source			et)				
Barrier Distance	to Observer:	0.0 feet					000					
Observer Height ()	Above Pad):	5.0 feet			Medium Truc		297					
	ad Elevation:	0.0 feet			Heavy Truc	:KS: 8.0	006	Grade Adji	ustment:	0.0		
Roa	ad Elevation:	0.0 feet		L	ane Equivale	nt Distan	ce (in fe	eet)				
H	Road Grade:	0.0%			Au	tos: 33.	645					
	Left View:	-90.0 degre	es		Medium Truc	ks: 33.	381					
	Right View:	90.0 degre	es		Heavy Truc	ks: 33.	407					
FHWA Noise Mode	el Calculation	IS										
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite Road	Fresr	nel E	Barrier Atte	en Ber	m Atten		
Autos:	66.51	-2.79		2.48	-1.2	)	-4.53	0.0	00	0.000		
Medium Trucks:	77.72	-20.03		2.53	-1.20	)	-4.86	0.0	00	0.000		
Heavy Trucks:	82.99	-23.99		2.52	-1.2	)	-5.67	0.0	00	0.000		
Unmitigated Noise	e Levels (with	out Topo and	barrier	attenu	ation)							
VehicleType	Leq Peak Hou	ur Leq Day	′ L	.eq Eve	ening Le	q Night		Ldn		VEL		
Autos:			63.1		61.3	55.3		63.9		64.5		
Medium Trucks:			57.5		51.1	49.6		58.1		58.3		
Heavy Trucks:	60	).3	58.9		49.9	51.1		59.5		59.6		
Vehicle Noise:	67	7.0	65.3		62.0	57.5	5	66.0		66.4		
Centerline Distance	ce to Noise C	ontour (in feet	)									
				70 dł		5 dBA	60	) dBA		dBA		
			Ldn:	18		40		85		84		
		C	NEL:	20		42		91	1	97		

Friday, November 22, 2019

Friday, November 22, 2019

FHW.	A-RD-77-108 HIG	HWAY N	IOISE PR	EDICTIO	N MODEL		
Scenario: Existing Plus Road Name: El Cerrito Ro Road Segment: w/o Bedford	L.				lame: Bed nber: 127	ford Marketpl 51	ace
SITE SPECIFIC INF	PUT DATA					DEL INPUT	S
Highway Data			Site Con	ditions (H	lard = 10,	Soft = 15)	
Average Daily Traffic (Adt): 25 Peak Hour Percentage: Peak Hour Volume: 2	5,127 vehicles 10% 2,513 vehicles				Aute ks (2 Axle s (3+ Axle	s): 15	
Vehicle Speed:	40 mph	F	Vehicle I	Nix			
Near/Far Lane Distance:	36 feet	F		cleType	Da	/ Evening	Night Daily
Site Data					itos: 77.		9.6% 97.42%
Barrier Height:	0.0 feet		Me	edium Tru	cks: 84.	3% 4.9%	10.3% 1.84%
Barrier Type (0-Wall, 1-Berm):	0.0		ŀ	leavy Tru	cks: 86.	5% 2.7%	10.8% 0.74%
Centerline Dist. to Barrier:	44.0 feet		Noise So	urce Ele	vations (ii	1 feet)	
Centerline Dist. to Observer:	44.0 feet			Autos:	0.000		
Barrier Distance to Observer:	0.0 feet		Mediur	n Trucks:	2.297		
Observer Height (Above Pad): Pad Elevation:	5.0 feet 0.0 feet		Heav	y Trucks:	8.006	Grade Adj	iustment: 0.0
Road Elevation:	0.0 feet	1	Lane Equ	uivalent L	Distance (	in feet)	
Road Grade:	0.0%			Autos:	40.460	,	
Left View:	-90.0 degrees		Mediur	n Trucks:	40.241		
Right View:	90.0 degrees		Heav	y Trucks:	40.262		
FHWA Noise Model Calculations							
VehicleType REMEL	Traffic Flow D	listance	Finite	Road	Fresnel	Barrier Att	en Berm Atten
Autos: 66.51	2.56	1.2	8	-1.20	-4.6	61 0.0	0.000
Medium Trucks: 77.72	-14.68	1.3		-1.20	-4.8		0.000
Heavy Trucks: 82.99	-18.63	1.3		-1.20	-5.5	50 0.0	0.000
Unmitigated Noise Levels (witho							1
VehicleType Leq Peak Hour			vening	Leq N	0	Ldn	CNEL
Autos: 69.1			65.5		59.4	68.1	
Medium Trucks: 63.2			55.3		53.7	62.2	
Heavy Trucks: 64.5			54.0		55.3	63.6	
Vehicle Noise: 71.2			66.2		61.6	70.1	1 70.6
Centerline Distance to Noise Con	tour (in feet)	70	dBA	65 dł	BA	60 dBA	55 dBA
	Ldn		5	97		209	450
	CNEL		8	104		224	482

	FHW	A-RD-77-108 H	IGHWA	Y NOISE PI	REDICT	ION MODEL		
Scenari	io: Existing Plu	s Project			Project	Name: Bedf	ord Marketpla	ace
Road Nam	e: El Cerrito R	d.			Job N	umber: 1275	1	
Road Segmer	nt: e/o Bedford	Cyn. Rd.						
	SPECIFIC IN	PUT DATA				IOISE MOD		5
Highway Data				Site Cor	ditions	(Hard = 10, 3	Soft = 15)	
Average Daily	Traffic (Adt): 2	6,140 vehicles				Auto	s: 15	
Peak Hour	Percentage:	10%		Me	dium Tr	ucks (2 Axles	): 15	
Peak H	our Volume:	2,614 vehicles		He	avy Tru	cks (3+ Axles	): 15	
Vel	hicle Speed:	40 mph		Vehicle	Mix			
Near/Far Lar	ne Distance:	36 feet			icleType	Dav	Evening	Night Daily
Site Data				Ven		Autos: 77.5	0	9.6% 97.42%
					ر edium T			10.3% 1.84%
	rier Height:	0.0 feet			Heavy T			10.3% 1.84%
Barrier Type (0-W	. ,	0.0			leavy I	UCKS. 00.0	70 Z.170	10.0% 0.745
Centerline Dis		44.0 feet		Noise Se	ource E	levations (in	feet)	
Centerline Dist.		44.0 feet			Auto	s: 0.000		
Barrier Distance		0.0 feet		Mediu	m Truck	s: 2.297		
Observer Height (J	,	5.0 feet		Heav	v Truck	s: 8.006	Grade Adj	ustment: 0.0
	ad Elevation:	0.0 feet			·			
	ad Elevation:	0.0 feet		Lane Eq		t Distance (ii	n feet)	
F	Road Grade:	0.0%			Auto			
	Left View:	-90.0 degrees	i		m Truck			
	Right View:	90.0 degrees	;	Heav	ry Truck	s: 40.262		
FHWA Noise Mode	el Calculations							
VehicleType	REMEL	Traffic Flow	Distanc	e Finite	Road	Fresnel	Barrier Atte	en Berm Atten
Autos:	66.51	2.73		1.28	-1.20	-4.6	1 0.0	0.00
Medium Trucks:	77.72	-14.50		1.31	-1.20	-4.8	7 0.0	0.00
Heavy Trucks:	82.99	-18.46		1.31	-1.20	-5.50	0.0	00 0.00
Unmitigated Noise				,				
,	Leq Peak Hour			q Evening	Leq	Night	Ldn	CNEL
Autos:	69.		7.4	65.7		59.6	68.2	
Medium Trucks:	63.		1.8	55.5		53.9	62.4	
Heavy Trucks:	64.		3.2	54.2		55.4	63.8	
Vehicle Noise:	71.	3 6	9.6	66.3		61.8	70.3	70.
Centerline Distand	ce to Noise Co	ntour (in feet)				T		I
				70 dBA		dBA	60 dBA	55 dBA
						00	214	462
		L	dn:	46 49		00	214	462

	FHW	A-RD-77-108 HIC	SHWAY	NOISE PI	REDICTION	NODEL							
Scenar	io: Existing Plus	s Project			Project Nam	e: Bedfor	d Marketpl	ace					
	e: El Cerrito Ro				Job Numb	er: 12751							
Road Segme	nt: e/o I-15 SB	Ramps											
	SPECIFIC IN	PUT DATA						s					
Highway Data				Site Cor	ditions (Har		,						
• •	Traffic (Adt): 1					Autos:	15						
	Percentage:	10%			dium Trucks	. ,	15						
		1,698 vehicles		He	avy Trucks (3	3+ Axles):	15						
	hicle Speed:	40 mph		Vehicle	Mix								
Near/Far La	ne Distance:	36 feet		Veh	icleType	Day	Evening	Night	Daily				
Site Data					Autos	: 77.5%	12.9%	9.6%	97.429				
Rai	rrier Height:	0.0 feet		M	edium Trucks	: 84.8%	4.9%	10.3%	1.84%				
Barrier Type (0-W	•	0.0		I	Heavy Trucks	86.5%	2.7%	10.8%	0.749				
Centerline Dis	st. to Barrier:	44.0 feet		Noise Se	ource Elevat	ions (in fe	et)						
Centerline Dist.	to Observer:	44.0 feet			Autos:	0.000	.,						
Barrier Distance	to Observer:	0.0 feet		Mediu	m Trucks:	2.297							
Observer Height (	Above Pad):	5.0 feet			vy Trucks:	8.006	Grade Ad	iustment:	0.0				
Pa	ad Elevation:	0.0 feet			,								
Roa	ad Elevation:	0.0 feet		Lane Eq	uivalent Dis		feet)						
1	Road Grade:	0.0%				40.460							
	Left View:	-90.0 degrees				40.241							
	Right View:	90.0 degrees		Heav	y Trucks:	40.262							
FHWA Noise Mod	el Calculations												
VehicleType	REMEL		Distance				Barrier Att		m Atten				
Autos:	66.51	0.86	1.1		-1.20	-4.61		000	0.00				
Medium Trucks:	77.72	-16.38	1.3		-1.20	-4.87		000	0.00				
Heavy Trucks:	82.99	-20.33	1.3	31	-1.20	-5.50	0.0	000	0.00				
Unmitigated Noise													
VehicleType	Leq Peak Hour		,	evening	Leq Nigh		Ldn		VEL				
Autos:	67.4		-	63.8		57.7	66.3	-	67.				
Medium Trucks:	61.4		-	53.6		52.0	60.5	-	60.				
Heavy Trucks:	62.	• • •	-	52.3		53.6	61.9	-	62.				
Vehicle Noise:	69.		7	64.5	:	59.9	68.4	1	68.				
Centerline Distan	ce to Noise Co	ntour (in feet)	70	-10.4	05 -104		0.104		-10.4				
				dBA	65 dBA	6	i0 dBA		dBA				
		L da											
		Ldr. CNFI		35 37	75 80		161 172	-	47 71				

	FH\	WA-RD-77-108	HIGHW	AY NO	DISE PR	EDICT	ION MOD	DEL			
Road Nan	rio: Existing Pl ne: El Cerrito I nt: e/o I-15 NE	Rd.					t Name: E lumber: 1		d Marketpl	ace	
SITE	SPECIFIC II	NPUT DATA							L INPUTS	6	
Highway Data				S	ite Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	10,125 vehicle	s					Autos:	15		
Peak Hour	Percentage:	10%			Med	dium Tr	ucks (2 A	xles):	15		
Peak H	our Volume:	1,013 vehicle	s		Hea	avy Tru	cks (3+ A	xles):	15		
Ve	hicle Speed:	40 mph		V	ehicle I	liv					
Near/Far La	ne Distance:	36 feet		V		cleType		Day	Evening	Night	Daily
Site Data					Veni			77.5%	•	9.6%	
	rrier Height:	0.0 feet			Me	dium T		84.8%		10.3%	1.84%
Barrier Type (0-W	•	0.0 leet			H	leavy T	rucks:	86.5%	2.7%	10.8%	0.74%
Centerline Di		44.0 feet									
Centerline Dist.		44.0 feet		N	oise So		levations		eet)		
Barrier Distance		0.0 feet				Auto		000			
Observer Height		5.0 feet			Mediur			97			
	ad Elevation:	0.0 feet			Heav	y Truck	(S. 8.0	006	Grade Adj	ustment.	0.0
	ad Elevation:	0.0 feet		L	ane Eau	ıivalen	t Distand	e (in i	feet)		
	Road Grade:	0.0%		F		Auto					
	Left View:	-90.0 degree	29		Mediur						
	Right View:	90.0 degree				y Truck					
FHWA Noise Mod	lel Calculatior	15									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresn	el	Barrier Atte	en Ber	m Atten
Autos:	66.51	-1.39		1.28		-1.20		4.61	0.0	00	0.000
Medium Trucks:	77.72	-18.62		1.31		-1.20		-4.87	0.0	00	0.000
Heavy Trucks:	82.99	-22.58		1.31		-1.20		-5.50	0.0	00	0.000
Unmitigated Nois	e Levels (with	hout Topo and	barrier	attenu	ation)						
VehicleType	Leq Peak Ho			eq Eve		Leq	Night		Ldn		NEL
Autos:			63.3		61.5		55.5		64.1		64.7
Medium Trucks:			57.7		51.3		49.8		58.2		58.5
Heavy Trucks:			59.1		50.1		51.3		59.7		59.8
Vehicle Noise:			65.5		62.2		57.7		66.2		66.6
Centerline Distan	ce to Noise C	ontour (in feet	)								
				70 di			dBA	6	60 dBA		dBA
			Ldn:	25			53		114		46
		Ci	VEL:	26		1	57		122	2	63

Friday, November 22, 2019

Friday, November 22, 2019

	FHV	VA-RD-77-108 H	IIGHWA	( NOISE	E PREDICTIO	N MODEL		
Road Nam	io: Existing Plu le: Eagle Glen nt: e/o Masters	Pkwy.				ame: Bed nber: 127	ford Marketpl 51	ace
	SPECIFIC IN	IPUT DATA					DEL INPUTS	5
Highway Data				Site	Conditions (F	lard = 10,	Soft = 15)	
	Traffic (Adt): 1 Percentage: lour Volume:	19,794 vehicles 10% 1,979 vehicles			Medium Truc Heavy Truck		s): 15	
Vei	hicle Speed:	40 mph		Vohi	cle Mix			
Near/Far Lar	ne Distance:	36 feet		-	VehicleType	Dav	Evening	Night Daily
Site Data						tos: 77.5		9.6% 97.42%
Ba	rrier Heiaht:	0.0 feet		-	Medium Tru	cks: 84.8	3% 4.9%	10.3% 1.84%
Barrier Type (0-W		0.0			Heavy Tru	cks: 86.5	5% 2.7%	10.8% 0.74%
Centerline Dis	st. to Barrier:	44.0 feet		Nois	e Source Elev	vations (in	feet)	
Centerline Dist.	to Observer:	44.0 feet			Autos:	0.000	,	
Barrier Distance	to Observer:	0.0 feet		Me	dium Trucks:	2.297		
Observer Height (	,	5.0 feet			leavy Trucks:	8.006	Grade Adj	ustment: 0.0
	ad Elevation: ad Elevation:	0.0 feet		l ano	Equivalent L	)istanco (i	n foot)	
	ad Elevation: Road Grade:	0.0 feet 0.0%		Lane	Autos:	40.460	ii ieel)	
1	Left View:	-90.0 degrees		M	dium Trucks:	40.460		
	Right View:	90.0 degrees			leavy Trucks:	40.241		
FHWA Noise Mode	el Calculation	s						
VehicleType	REMEL	Traffic Flow	Distanc	e Fi	nite Road	Fresnel	Barrier Atte	en Berm Atten
Autos:	66.51	1.53		1.28	-1.20	-4.6	1 0.0	00 0.000
Medium Trucks:	77.72	-15.71		1.31	-1.20	-4.8	7 0.0	00 0.000
Heavy Trucks:	82.99	-19.67		1.31	-1.20	-5.5	0 0.0	00 0.000
Unmitigated Noise	e Levels (with	out Topo and b	arrier at	tenuatio	on)			
VehicleType	Leq Peak Hou	r Leq Day	Leq	Evenin	g Leq Ni	ight	Ldn	CNEL
Autos:	68	.1 6	6.2	6	4.4	58.4	67.0	67.6
Medium Trucks:	62	.1 6	0.6	5	4.2	52.7	61.2	61.4
Heavy Trucks:	63	.4 6	2.0	5	3.0	54.2	62.6	62.7
Vehicle Noise:	70	-	8.4	6	5.1	60.6	69.1	69.6
Centerline Distant	ce to Noise Co	ontour (in feet)						1
				'0 dBA	65 dE	BA	60 dBA	55 dBA
			dn:	38	83		178	384
		CN	EL:	41	89		191	411

FHW	A-RD-77-108 HIGI	HWAY N	IOISE PRED		EL	
Scenario: Existing Plus	Project		Pro	ject Name: E	Bedford Marketpla	ace
Road Name: Eagle Glen F	kwy.		Jo	b Number: 1	2751	
Road Segment: e/o Bedford	Cyn. Rd.					
SITE SPECIFIC INF	UT DATA				IODEL INPUTS	5
Highway Data			Site Conditi	ons (Hard =	10, Soft = 15)	
Average Daily Traffic (Adt): 33	686 vehicles			A	Autos: 15	
Peak Hour Percentage:	10%		Mediun	n Trucks (2 A	xles): 15	
Peak Hour Volume: 3	3,369 vehicles		Heavy	Trucks (3+ A	xles): 15	
Vehicle Speed:	45 mph	-	Vehicle Mix			
Near/Far Lane Distance:	76 feet	-	Vehicle		Day Evening	Night Daily
Site Data			veniciei		77.5% 12.9%	9.6% 97.42%
			Madiu		34.8% 4.9%	10.3% 1.84%
Barrier Height:	0.0 feet				36.5% 2.7%	10.3% 1.84%
Barrier Type (0-Wall, 1-Berm):	0.0		Heal	y Trucks: 8	50.5% 2.7%	10.8% 0.74%
Centerline Dist. to Barrier:	65.0 feet		Noise Sourc	e Elevations	; (in feet)	
Centerline Dist. to Observer:	65.0 feet			utos: 0.0	00	
Barrier Distance to Observer:	0.0 feet		Medium Ti	ucks: 2.2	97	
Observer Height (Above Pad):	5.0 feet		Heavy Tr	ucks: 8.0	06 Grade Adj	ustment: 0.0
Pad Elevation:	0.0 feet	L	,			
Road Elevation:	0.0 feet	4	Lane Equiva		. ,	
Road Grade:	0.0%			utos: 52.9		
Left View:	-90.0 degrees		Medium Ti			
Right View:	90.0 degrees		Heavy Ti	ucks: 52.8	21	
FHWA Noise Model Calculations						
VehicleType REMEL	Traffic Flow Di	istance	Finite Roa	d Fresn	el Barrier Atte	en Berm Atten
Autos: 68.46	3.32	-0.4	8 -1	20 ·	-4.70 0.0	0.00
Medium Trucks: 79.45	-13.91	-0.4	6 -1	20 ·	4.88 0.0	0.00
Heavy Trucks: 84.25	-17.87	-0.4	6 -1	20 -	-5.30 0.0	00 0.00
Unmitigated Noise Levels (witho						
VehicleType Leq Peak Hour	Leq Day		•	.eq Night	Ldn	CNEL
Autos: 70.1			66.4	60.4	69.0	
Medium Trucks: 63.9			56.0	54.5	62.9	
Heavy Trucks: 64.7	63.3		54.3	55.5	63.9	64.
Vehicle Noise: 71.9	70.2		67.1	62.4	70.9	71
Centerline Distance to Noise Cor	ntour (in feet)					r
			dBA	65 dBA	60 dBA	55 dBA
					347	748
	Ldn: CNFL:		5	161	347	/40

	FHV	/A-RD-77-108	HIGHW	AY N	OISE PR	EDICTIO	N MOD	EL			
Scenario: Road Name: Road Segment:						Project N Job Nun			d Marketpl	ace	
	ECIFIC IN	PUT DATA							L INPUTS	5	
Highway Data				5	Site Con	ditions (H	ard =	10, So	oft = 15)		
Average Daily Tra	affic (Adt): 2	9,005 vehicles	3					lutos:			
Peak Hour Pe	rcentage:	10%				lium Truci					
Peak Hou	r Volume:	2,901 vehicles	6		Hea	avy Trucks	: (3+ A	xles):	15		
	le Speed:	45 mph		1	/ehicle N	<i>lix</i>					
Near/Far Lane	Distance:	76 feet			Vehi	cleType		Day	Evening	Night	Daily
Site Data						Au	tos: 1	77.5%	12.9%	9.6%	97.42%
Barrie	er Height:	0.0 feet			Me	dium Truc	ks: 8	34.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall,	1-Berm):	0.0			H	leavy Truc	ks: 8	36.5%	2.7%	10.8%	0.74%
Centerline Dist. t		65.0 feet		٨	Voise So	urce Elev	ations	in fe	eet)		
Centerline Dist. to		65.0 feet				Autos:	0.0	00			
Barrier Distance to		0.0 feet			Mediur	n Trucks:	2.2	97			
Observer Height (Ab	,	5.0 feet			Heav	v Trucks:	8.0	06	Grade Adj	ustmen	t: 0.0
	Elevation:	0.0 feet									
	Elevation:	0.0 feet		L	ane Equ	ivalent D			teet)		
	ad Grade:	0.0%				Autos:	52.9				
	Left View: ight View:	-90.0 degree 90.0 degree				n Trucks: y Trucks:	52.8 52.8				
FHWA Noise Model (	Calculation										
	REMEL	Traffic Flow	Distar	nce	Finite	Road	Fresn	e/	Barrier Atte	en Be	rm Atten
Autos:				0.40							
Autos:	68.46	2.67		-0.48	3	-1.20		4.70	0.0	000	0.000
Autos: Medium Trucks:	68.46 79.45	2.67 -14.56		-0.48		-1.20 -1.20		4.70 4.88		000 000	
					3		-		0.0		0.000
Medium Trucks:	79.45 84.25	-14.56 -18.52		-0.46 -0.46	3 3	-1.20	-	4.88	0.0	000	0.000
Medium Trucks: Heavy Trucks: Unmitigated Noise L	79.45 84.25	-14.56 -18.52	barrier a	-0.46 -0.46	3 3	-1.20		4.88	0.0	000	0.000
Medium Trucks: Heavy Trucks: Unmitigated Noise L	79.45 84.25 evels (with	-14.56 -18.52 Dut Topo and r Leq Day	barrier a	-0.46 -0.46	ation)	-1.20 -1.20		4.88	0.0 0.0	000	0.000 0.000 CNEL 69.0
Medium Trucks: Heavy Trucks: Unmitigated Noise L VehicleType Le	79.45 84.25 evels (with eq Peak Hou	-14.56 -18.52 out Topo and r Leq Day 5	barrier a	-0.46 -0.46	3 3 <b>uation)</b> rening	-1.20 -1.20	ght	4.88	0.0 0.0 <i>Ldn</i>	000 000	0.000 0.000 CNEL 69.0
Medium Trucks: Heavy Trucks: Unmitigated Noise L VehicleType Le Autos:	79.45 84.25 evels (with eq Peak Hou 69	-14.56 -18.52 Dut Topo and r Leq Day 5 2	barrier a	-0.46 -0.46	a auation) vening 65.8	-1.20 -1.20	ght 59.7	4.88	0.0 0.0 <i>Ldn</i> 68.4	000 000 100 100	0.000 0.000 2NEL 69.0 62.5
Medium Trucks: Heavy Trucks: Unmitigated Noise L VehicleType Le Autos: Medium Trucks:	79.45 84.25 evels (with eq Peak Hou 69 63	-14.56 -18.52 Dut Topo and r Leq Day 5 2 1	barrier a Le 67.6 61.7	-0.46 -0.46	<i>uation)</i> <i>rening</i> 65.8 55.4	-1.20 -1.20	ght 59.7 53.8	-4.88 -5.30	0.0 0.0 <i>Ldn</i> 68.4 62.3	000 000 L	0.000 0.000 <i>NEL</i> 69.0 62.9 63.3
Medium Trucks: Heavy Trucks: Unmitigated Noise L VehicleType Le Autos: Medium Trucks: Heavy Trucks:	79.45 84.25 evels (with eq Peak Hou 69 63 64 71	-14.56 -18.52 Dut Topo and r Leq Day 5 2 1 3	barrier a 67.6 61.7 62.6 69.6	-0.46 -0.46 attenu eq Ev	<i>uation)</i> <i>rening</i> 65.8 55.4 53.6 66.4	-1.20 -1.20 Leq Ni	ght 59.7 53.8 54.9 61.7	-4.88 -5.30	0.0 0.0 <i>Ldn</i> 68.4 62.3 63.2 70.3	000 000 4 2 3	0.000 0.000 <i>ENEL</i> 69.0 62.5 63.3 70.7
Medium Trucks: Heavy Trucks: Unmitigated Noise L VehicleType Le Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	79.45 84.25 evels (with eq Peak Hou 69 63 64 71	-14.56 -18.52 Dut Topo and r Leq Day 5 2 1 3 mtour (in feet)	barrier a 57.6 51.7 52.6 59.6	-0.46 -0.46 attenu eq Ev	aution)           vening           65.8           55.4           53.6           66.4           IBA	-1.20 -1.20 Leq Ni	ght 59.7 53.8 54.9 61.7	-4.88 -5.30	0.0 0.0 <i>Ldn</i> 68.4 62.3 63.2 70.3 50 <i>dBA</i>	000 000 4 3 3 5	0.000 0.000 CNEL 69.0 62.5 63.3 70.7
Medium Trucks: Heavy Trucks: Unmitigated Noise L VehicleType Le Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	79.45 84.25 evels (with eq Peak Hou 69 63 64 71	-14.56 -18.52 Dut Topo and r Leq Day 5 2 1 3 mntour (in feet)	barrier a 67.6 61.7 62.6 69.6	-0.46 -0.46 attenu eq Ev	aution           vening           65.8           55.4           53.6           66.4           IBA           3	-1.20 -1.20 Leq Ni	ght 59.7 53.8 54.9 61.7	-4.88 -5.30	0.0 0.0 <i>Ldn</i> 68.4 62.3 63.2 70.3	000 000 4 3 2 3	69.0 62.5 63.3 70.7

	FHV	VA-RD-77-108	пібніўа	Y NOISE P	REDICI	ION MODEL			
Road Nam	io: Existing Plu ne: Cajalco Rd nt: e/o I-15 NB	. '				Name: Beo lumber: 127	ford Marketp 51	lace	
SITE	SPECIFIC IN	IPUT DATA			r	IOISE MO	DEL INPUT	s	
Highway Data				Site Co	nditions	(Hard = 10,	Soft = 15)		
Average Daily	Traffic (Adt): 3	32,680 vehicle	s			Aut	os: 15		
Peak Hour	Percentage:	10%		M	edium Tr	ucks (2 Axle	s <i>):</i> 15		
Peak H	lour Volume:	3,268 vehicle	s	H	eavy Tru	cks (3+ Axle	s): 15		
Vel	hicle Speed:	45 mph		Vehicle	Mix				
Near/Far Lar	ne Distance:	76 feet			hicleType	Da	/ Evening	Night	Daily
Site Data						Autos: 77	•		97.42%
		0.0 feet		٨	1edium T			10.3%	
	rrier Height:	0.0 teet			Heavy T			10.8%	
Barrier Type (0-W Centerline Dis		0.0 65.0 feet			,		-		
Centerline Dist.		65.0 feet		Noise S	Source E	levations (i	1 feet)		
Barrier Distance		0.0 feet			Auto				
Observer Height (		5.0 feet			um Truck				
0 1	ad Flevation:	0.0 feet		Hea	ivy Truck	s: 8.006	Grade Ad	justmen	t: 0.0
	ad Elevation:	0.0 feet		Lane E	guivalen	t Distance (	in feet)		
	Road Grade:	0.0%			Auto				
	Left View:	-90.0 degree	29	Medii	im Truck				
	Right View:	90.0 degree		Hea	wy Truck				
FHWA Noise Mode	el Calculation	s							
			Distant						
VehicleType	REMEL	Traffic Flow	Distanc	e Finite	e Road	Fresnel	Barrier Att	en Be	rm Atten
1	REMEL 68.46	Traffic Flow 3.19		e Finite 0.48	e Road -1.20	Fresnel -4.3		ten Be	
VehicleType			-				0.0		0.000
VehicleType Autos:	68.46	3.19	-	0.48	-1.20	-4.	70 0.0 38 0.0	000	0.000
VehicleType Autos: Medium Trucks:	68.46 79.45 84.25	3.19 -14.05 -18.00	-	0.48 0.46 0.46	-1.20 -1.20 -1.20	-4.1 -4.8	70 0.0 38 0.0	000	0.000
VehicleType Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Noise</b> VehicleType	68.46 79.45 84.25 <b>e Levels (with</b> Leq Peak Hou	3.19 -14.05 -18.00 out Topo and rr Leq Day	- - barrier at	0.48 0.46 0.46 <b>tenuation)</b> g Evening	-1.20 -1.20 -1.20 <i>Leq</i>	-4.1 -4.1 -5.1	70 0.0 38 0.0 30 0.0	000 000 000	0.000 0.000 0.000
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos:	68.46 79.45 84.25 e Levels (with Leq Peak Hou 70	3.19 -14.05 -18.00 out Topo and r Leq Day .0	- - - - - - - - - - - - - - - - - - -	0.48 0.46 0.46 <b>tenuation)</b> g Evening 66.3	-1.20 -1.20 -1.20 Leq	-4.1 -4.8 -5.3 Night 60.3	70 0.0 88 0.0 80 0.0 <u>Ldn</u> 68.9	000 000 000 000 000	0.000 0.000 0.000 <i>NEL</i> 69.5
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks:	68.46 79.45 84.25 e Levels (with Leq Peak Hou 70 63	3.19 -14.05 -18.00 out Topo and rr Leq Day .0 .7		0.48 0.46 0.46 tenuation) g Evening 66.3 55.9	-1.20 -1.20 -1.20 <i>Leq</i>	-4.1 -4.4 -5.3 Night 60.3 54.3	70 0.0 88 0.0 80 0.0 <u>Ldn</u> 68.9 62.8	000 000 000 000 C 9 8	0.000 0.000 0.000 <i>NEL</i> 69.5 63.0
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos:	68.46 79.45 84.25 e Levels (with Leq Peak Hou 70	3.19 -14.05 -18.00 out Topo and rr Leq Day .0 .7	- - - - - - - - - - - - - - - - - - -	0.48 0.46 0.46 <b>tenuation)</b> g Evening 66.3	-1.20 -1.20 -1.20 <i>Leq</i>	-4.1 -4.8 -5.3 Night 60.3	70 0.0 88 0.0 80 0.0 <u>Ldn</u> 68.9	000 000 000 000 C 9 8	0.000 0.000 0.000 <i>NEL</i> 69.5 63.0 63.9
VehicleType Autos: Medium Trucks: Heavy Trucks: Unnitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	68.46 79.45 84.25 e Levels (with Leq Peak Hou 70 63 64 71	3.19 -14.05 -18.00 <b>out Topo and</b> r Leq Day .0 .7 .6 .8		0.48 0.46 0.46 tenuation) g Evening 66.3 55.9	-1.20 -1.20 -1.20 <i>Leq</i>	-4.1 -4.4 -5.3 Night 60.3 54.3	70 0.0 88 0.0 80 0.0 <u>Ldn</u> 68.9 62.8	000 000 000 000 9 8 7	0.000 0.000 0.000 <i>NEL</i> 69.5 63.0 63.9
VehicleType Autos: Medium Trucks: Heavy Trucks: Unnitigated Noisse VehicleType Autos: Medium Trucks: Heavy Trucks:	68.46 79.45 84.25 e Levels (with Leq Peak Hou 70 63 64 71	3.19 -14.05 -18.00 <b>out Topo and</b> r Leq Day .0 .7 .6 .8	barrier at barrier at centrier	0.48 0.46 tenuation) g Evening 66.3 55.9 54. 66.9	-1.20 -1.20 -1.20 -1.20 Leq 3 	-4.1 -4.4 -5.3 Night 60.3 54.3 55.4 62.2	20 0.0 38 0.0 30 0.0 <u>Ldn</u> 68.9 62.8 63.7 70.8	000 000 000 9 8 7 8	0.000 0.000 <i>NEL</i> 69.5 63.0 63.9 71.2
VehicleType Autos: Medium Trucks: Heavy Trucks: Unnitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	68.46 79.45 84.25 e Levels (with Leq Peak Hou 70 63 64 71	3.19 -14.05 -18.00 <b>out Topo and</b> ir Leq Day .0 .7 .6 .8 ontour (in feet		0.48 0.46 0.46 <i>tenuation)</i> <i>g Evening</i> 66.3 55.9 54. 66.9 66.9	-1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20	-4.1 -4.4 -5.3 Night 60.3 54.3 55.4 62.2 dBA	0 0.0 0 0.0 0.	000 000 000 9 8 7 8 8 55	0.000 0.000 0.000 WEL 69.5 63.0 63.9 71.2
VehicleType Autos: Medium Trucks: Heavy Trucks: Unnitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	68.46 79.45 84.25 e Levels (with Leq Peak Hou 70 63 64 71	3.19 -14.05 -18.00 <i>out Topo and</i> <i>r</i> Leg Day .0 .7 .6 .8 <i>ontour (in feet</i>	barrier at barrier at centrier	0.48 0.46 tenuation) g Evening 66.3 55.9 54. 66.9	-1.20 -1.20 -1.20 -1.20 -1.20 -1.20 -1.20 	-4.1 -4.4 -5.3 Night 60.3 54.3 55.4 62.2	20 0.0 38 0.0 30 0.0 <u>Ldn</u> 68.9 62.8 63.7 70.8	2000 2000 2000 2000 2000 2000 2000 200	0.000 0.000 0.000 <i>ENEL</i> 69.5 63.0 63.9 71.2

Friday, November 22, 2019

Friday, November 22, 2019

Friday, November 22, 2019

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	FHW	A-RD-77-108	HIGHV	VAY NO	DISE PF	REDICT		DEL			
	<ul> <li>Existing Pluse</li> <li>Cajalco Rd.</li> <li>t: e/o Grand C</li> </ul>	,					Name: E lumber:		d Marketpla	ace	
SITE S	SPECIFIC IN	PUT DATA				N	IOISE N	IODE	L INPUTS	5	
Highway Data				S	ite Con	ditions	(Hard =	10, So	oft = 15)		
Average Daily 1 Peak Hour F Poak H	Percentage:	9,980 vehicle 10% 1.998 vehicle					) ucks (2 A cks (3+ A		15 15 15		
	nicle Speed:	45 mph	5				5/13 [04 74	unco).	10		
Near/Far Lan		76 feet		V	<b>ehicle</b> I Veh	<b>Mix</b> icleType	,	Dav	Evening	Night	Dailv
Site Data							Autos:	77.5%	12.9%	9.6%	97.42%
Barrier Type (0-Wa	rier Height: all, 1-Berm):	0.0 feet 0.0				edium T Heavy T		84.8% 86.5%		10.3% 10.8%	
Centerline Dis	t. to Barrier:	65.0 feet			loiso Se	urco E	levations	in fo	(at)		
Centerline Dist. to Barrier Distance to Observer Height (A Pa	o Observer:	65.0 feet 0.0 feet 5.0 feet 0.0 feet		h	Mediu	Auto Muto m Truck ry Truck	s: 0.0 s: 2.2	297	Grade Adji	ustment	: 0.0
Roa	d Elevation:	0.0 feet		L	ane Eq	uivalen	t Distand	e (in t	eet)		
	Road Grade: Left View: Right View:	0.0% -90.0 degre 90.0 degre				Auto m Truck ry Truck	s: 52.8	304			
FHWA Noise Mode	Calculations	5									
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresn	el	Barrier Atte	en Bei	m Atten
Autos:	68.46	1.05		-0.48		-1.20		-4.70	0.0	00	0.000
Medium Trucks:	79.45	-16.18		-0.46		-1.20		-4.88	0.0	00	0.000
Heavy Trucks:	84.25	-20.14		-0.46		-1.20		-5.30	0.0	00	0.000
Unmitigated Noise	Levels (witho	out Topo and	barrier	r atteni	lation)						
	Leq Peak Hou			Leq Ev		Leq	Night		Ldn		NEL
Autos:	67.	-	65.9		64.2		58.1		66.7		67.3
Medium Trucks:	61.	-	60.1		53.7		52.2		60.7		60.9
Heavy Trucks:	62.	-	61.0		52.0		53.2		61.6		61.7
Vehicle Noise:	69.	-	67.9		64.8		60.1		68.6		69.1
Centerline Distanc	e to Noise Co	ntour (in feet	)	70 -	DA	67	dD A		O dBA		dDA
			Ldn:	70 d			dBA 14	6	0 dBA 245		dBA 528
			Lan: NFL:	53			14 22		245	-	528 567
			VLL.	5/		1	22		203	5	107

	FHW	/A-RD-77-108	HIGH	WAY NO	DISE PR	EDICT	ION MODEL		
	o: Existing Plu e: Cajalco Rd. t: e/o Temesc	,					Name: Bed umber: 127	ford Marketpl 51	ace
SITE S	SPECIFIC IN	PUT DATA				ľ	IOISE MOL	DEL INPUT	s
Highway Data				S	ite Cond	litions	(Hard = 10,	Soft = 15)	
	Percentage:	1,190 vehicle: 10% 2,119 vehicle: 45 mph			Hea	vy Tru	Auto ucks (2 Axle cks (3+ Axle	s): 15	
Near/Far Lan		76 feet		v	ehicle M				1
	o Diotanoo.	10 1000			Vehic	leType	,	•	Night Dail
Site Data							Autos: 77.		9.6% 97.4
	rier Height:	0.0 feet				dium T			10.3% 1.8
Barrier Type (0-Wa	all, 1-Berm):	0.0			Н	eavy 1	rucks: 86.	5% 2.7%	10.8% 0.7
Centerline Dis		65.0 feet		Δ	loise So	urce E	levations (ir	i feet)	
Centerline Dist. t	o Observer:	65.0 feet		-		Auto			
Barrier Distance t	o Observer:	0.0 feet			Medium				
Observer Height (A	Above Pad):	5.0 feet				/ Truck		Grade Ad	iustment: 0.0
Pa	d Elevation:	0.0 feet						-	0.0
Roa	d Elevation:	0.0 feet		L	ane Equ	ivalen	t Distance (	in feet)	
F	Road Grade:	0.0%				Auto			
	Left View:	-90.0 degree	es		Medium	n Truck	s: 52.804		
	Right View:	90.0 degree	es		Heavy	/ Truck	s: 52.821		
FHWA Noise Mode	el Calculations	5							
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite F		Fresnel	Barrier Att	en Berm Atte
Autos:	68.46	1.31		-0.48		-1.20	-4.7	0.0	0.0 0.0
Medium Trucks:	79.45	-15.93		-0.46		-1.20	-4.8	8 0.0	0.0 0.0
Heavy Trucks:	84.25	-19.88		-0.46		-1.20	-5.3	0.0	0.0 0.0
Unmitigated Noise	Levels (with	out Topo and	barrie	er attenu	uation)				
VehicleType	Leq Peak Hou	r Leq Day	·	Leq Ev	ening	Leq	Night	Ldn	CNEL
Autos:	68.	1	66.2		64.4		58.4	67.0	) 6
Medium Trucks:	61.	9	60.4		54.0		52.4	60.9	96
Heavy Trucks:	62.	7	61.3		52.3		53.5	61.9	96
Vehicle Noise:	69.	9	68.2		65.0		60.4	68.9	96
Centerline Distanc	e to Noise Co	ntour (in feet	)						
				70 d	BA	65	dBA	60 dBA	55 dBA
			Ldn:	55		4	18	255	549
			Lun.	- 55	)		10	200	549

	FHV	VA-RD-77-108	HIGHW	AY N	OISE PR	EDICTIO	NMOD	EL			
Scenar	io: Interim Yea	r 2021				Project N	ame: B	edford	d Marketpla	ace	
	e: Masters Dr					Job Nur	nber: 1	2751			
Road Segme	nt: n/o Californ	iia Av.									
	SPECIFIC IN	IPUT DATA							L INPUTS	5	
Highway Data				5	Site Con	ditions (H	lard = 1	0, So	ft = 15)		
Average Daily	Traffic (Adt):	5,049 vehicle	s				Α	utos:	15		
Peak Hour	Percentage:	10%			Med	lium Truc	ks (2 Ax	:les):	15		
Peak H	our Volume:	505 vehicle	s		Hea	avy Truck	s (3+ Ax	(les):	15		
Ve	hicle Speed:	40 mph		1	/ehicle N	<i>lix</i>					
Near/Far La	ne Distance:	14 feet		_	Vehi	cleType	E	Day	Evening	Night	Daily
Site Data						Au	tos: 7	7.5%	12.9%	9.6%	97.42%
Bai	rier Height:	0.0 feet			Me	dium Tru	cks: 8	4.8%	4.9%	10.3%	1.84%
Barrier Type (0-W	•	0.0			H	leavy Tru	cks: 8	6.5%	2.7%	10.8%	0.74%
Centerline Dis		34.0 feet			voise So	urce Ele	ations	(in fe	et)		
Centerline Dist.	to Observer:	34.0 feet				Autos:	0.00		.,		
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks:	2.29				
Observer Height (	Above Pad):	5.0 feet				v Trucks:	8.00		Grade Adj	ustment:	0.0
Pa	ad Elevation:	0.0 feet									
Roa	ad Elevation:	0.0 feet		L	ane Equ	iivalent E			eet)		
1	Road Grade:	0.0%				Autos:	33.64				
	Left View:	-90.0 degre				n Trucks:	33.38				
	Right View:	90.0 degre	es		Heav	y Trucks:	33.40	07			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresne	/ /	Barrier Atte	en Ber	m Atten
Autos:	66.51	-4.41		2.48	3	-1.20		4.53	0.0	00	0.000
Medium Trucks:	77.72	-21.65		2.53	3	-1.20		4.86	0.0	00	0.000
Heavy Trucks:	82.99	-25.60		2.52	2	-1.20	-	5.67	0.0	00	0.000
Unmitigated Nois											
VehicleType	Leq Peak Hou			.eq Ev	~	Leq N	-		Ldn		VEL
Autos:	63		61.5		59.7		53.7		62.3		62.9
Medium Trucks:	57		55.9		49.5		48.0		56.4		56.7
Heavy Trucks:	58	.7	57.3		48.3		49.5		57.9		58.0
Vehicle Noise:	65	.4	63.7		60.4		55.8		64.4		64.8
	ce to Noise Co	ontour (in feet	)								
Centerline Distant				70 -		65 dE	A	6	0 dBA	55	dBA
Centerline Distan				70 d			M	0			
Centerline Distant			Ldn: NFL :	70 a 14 15	1	31 33		0	67 71	1	44 54

	FH\	NA-RD-77-108	HIGHW	AY NC	DISE PRED	ICTION	MODEL			
Road Nam	io: Interim Yea e: Masters Dr nt: s/o Califorr	r					me: Bedfor ber: 12751	d Marketpla	ace	
SITE	SPECIFIC IN	NPUT DATA				NOI	SE MODE	L INPUTS	5	
Highway Data				S	ite Conditi	ons (Ha	rd = 10, Se	oft = 15)		
Average Daily	Traffic (Adt):	10,071 vehicle	s				Autos:	15		
Peak Hour	Percentage:	10%			Mediur	n Trucks	(2 Axles):	15		
Peak H	our Volume:	1,007 vehicle	s		Heavy	Trucks	(3+ Axles):	15		
Ve	hicle Speed:	40 mph		V	ehicle Mix					
Near/Far Lai	ne Distance:	14 feet		-	Vehicle	Type	Dav	Evening	Night	Daily
Site Data					Veniere	Auto		0	9.6%	97.42%
Pa	rier Height:	0.0 feet			Mediu	m Truck	s: 84.8%	4.9%	10.3%	1.84%
Barrier Type (0-W		0.0			Hea	vy Truck	s: 86.5%	2.7%	10.8%	0.74%
Centerline Dis		34.0 feet		-		-				
Centerline Dist.		34.0 feet		N	oise Sourc			eet)		
Barrier Distance	to Observer:	0.0 feet				Autos:	0.000			
Observer Height (	Above Pad):	5.0 feet			Medium T		2.297			
	ad Elevation:	0.0 feet			Heavy T	rucks:	8.006	Grade Adjı	ustment:	0.0
	ad Elevation:	0.0 feet		L	ane Equiva	alent Di	stance (in	feet)		
	Road Grade:	0.0%			. ,	Autos:	33.645			
	Left View:	-90.0 degre	es		Medium T	rucks:	33.381			
	Right View:	90.0 degre			Heavy T	rucks:	33.407			
FHWA Noise Mod	el Calculation	IS								
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite Roa	ad F	resnel	Barrier Atte	en Ben	n Atten
Autos:	66.51	-1.41		2.48	-1	.20	-4.53	0.0	00	0.000
Medium Trucks:	77.72	-18.65		2.53	-1	.20	-4.86	0.0	00	0.000
Heavy Trucks:	82.99	-22.60		2.52	-1	.20	-5.67	0.0	00	0.000
Unmitigated Noise										
VehicleType	Leq Peak Hou			leq Eve	•	Leq Nigi		Ldn		IEL
Autos:			64.5		62.7		56.7	65.3		65.9
Medium Trucks:			58.9		52.5		51.0	59.4		59.7
Heavy Trucks:	-		60.3		51.3		52.5	60.9		61.0
Vehicle Noise:			66.7		63.4		58.8	67.4		67.8
Centerline Distant	ce to Noise C	ontour (in feet	)	70 /		05 10 1				10.4
				70 dł		65 dBA		50 dBA		dBA
		0	Ldn:	23		49		106	_	28
		C	NEL:	24		52		113	2	44

Friday, November 22, 2019

Friday, November 22, 2019

	FHW	/A-RD-77-108	HIGH	WAY N	OISE PI	REDICT	ION MOI	DEL			
	<ul> <li>D: Interim Year</li> <li>Masters Dr.</li> <li>t: n/o Bennet A</li> </ul>						Name: I lumber:		d Marketpl	ace	
SITE S	SPECIFIC IN	PUT DATA							L INPUTS	S	
Highway Data				1	Site Cor	nditions	(Hard =	10, Sc	oft = 15)		
Average Daily 1 Peak Hour F	Percentage:	7,578 vehicle 10%					ucks (2 A	/	15 15		
	our Volume:	758 vehicle	s		He	avy Tru	cks (3+ A	ixies):	15		
Ver Near/Far Lan	iicle Speed: e Distance:	40 mph 14 feet		1	Vehicle Veh	<b>Mix</b> icleType	9	Day	Evening	Night	Daily
Site Data							Autos:	77.5%	12.9%	9.6%	97.42%
Bar Barrier Type (0-Wa	rier Height: all, 1-Berm):	0.0 feet 0.0				edium T Heavy T		84.8% 86.5%		10.3% 10.8%	
Centerline Dis	t. to Barrier:	34.0 feet			Noiso S	ourco E	levation	r (in fr	not)		
Centerline Dist. t Barrier Distance t Observer Height (A Pa	o Observer:	34.0 feet 0.0 feet 5.0 feet 0.0 feet		,	Mediu	Auto Muto M Truck Vy Truck	s: 0.0 s: 2.2	297 006	Grade Adj	ustment	: 0.0
Roa	d Elevation:	0.0 feet		1	Lane Eq	uivalen	t Distand	ce (in i	feet)		
F	Road Grade:	0.0%				Auto	s: 33.6	645			
	Left View: Right View:	-90.0 degre 90.0 degre				m Truck /y Truck					
FHWA Noise Mode	Calculations	5									
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fresn	el	Barrier Atte	en Be	rm Atten
Autos:	66.51	-2.64		2.48	3	-1.20		-4.53	0.0	000	0.000
Medium Trucks:	77.72	-19.88		2.53	3	-1.20		-4.86	0.0	000	0.000
Heavy Trucks:	82.99	-23.84		2.52	2	-1.20		-5.67	0.0	000	0.000
Unmitigated Noise											
	Leq Peak Hou			Leq Ev		,	Night		Ldn		NEL
Autos:	65.	-	63.2		61.5		55.4		64.0		64.7
Medium Trucks:	59.	-	57.7		51.3		49.7		58.2	-	58.4
Heavy Trucks: Vehicle Noise:	60. 67.	-	59.1 65.4		50.0 62.2		51.3 57.6		59.6 66.1		59.8 66.6
Centerline Distance	e to Noise Co	ntour (in fee	9								
Contenine Distanc	5 10 NOISE CO	inour (in leel	/	70 c	1BA	65	dBA	6	0 dBA	55	dBA
			Ldn:	19	9	4	11		87		188
		С	NEL:	20	0	4	13		94	2	202

	FHW	/A-RD-77-108 I	HIGHW	AY NC	ISE PREDICT	ION MO	DEL			
Road Nam	o: Interim Yea e: Masters Dr. nt: n/o Eagle G					t Name: Number:		d Marketpl	ace	
SITE	SPECIFIC IN	PUT DATA					/ODE		S	
Highway Data				Si	te Conditions					
Peak H	Percentage: our Volume:	7,098 vehicles 10% 710 vehicles			Medium Ti Heavy Tru	ucks (2 )		15 15 15		
	hicle Speed:	40 mph		Ve	ehicle Mix					
Near/Far Lar	ne Distance:	14 feet			VehicleTyp	e	Dav	Evening	Night	Daily
Site Data							77.5%	•	9.6%	
Pa	rier Heiaht:	0.0 feet			Medium 1	rucks:	84.8%	4.9%	10.3%	1.849
Barrier Type (0-W		0.0 1001			Heavy	rucks:	86.5%	2.7%	10.8%	0.749
Centerline Dis	. ,	34.0 feet								
Centerline Dist.		34.0 feet		N	oise Source E			eet)		
Barrier Distance		0.0 feet			Auto		000			
Observer Height ()		5.0 feet			Medium Truci		297			
0 1	d Flevation:	0.0 feet			Heavy Truck	ks: 8.	006	Grade Adj	ustment.	0.0
	d Elevation:	0.0 feet		Lá	ane Equivaler	t Distan	ce (in f	feet)		
ŀ	Road Grade:	0.0%			Auto	os: 33.	645	,		
	Left View:	-90.0 degree	s .		Medium Truci		381			
	Right View:	90.0 degree			Heavy Truck	ks: 33.	407			
FHWA Noise Mode	el Calculation	5								
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite Road	Fresr	nel	Barrier Atte	en Ber	m Atten
Autos:	66.51	-2.93		2.48	-1.20		-4.53	0.0	00	0.00
Medium Trucks:	77.72	-20.17		2.53	-1.20		-4.86	0.0	00	0.00
Heavy Trucks:	82.99	-24.12		2.52	-1.20		-5.67	0.0	00	0.00
Unmitigated Noise	e Levels (with	out Topo and I	barrier	attenu	ation)					
VehicleType	Leq Peak Hou	r Leq Day	L	.eq Eve	ning Leq	Night		Ldn	CI	VEL
Autos:	64	.9 6	3.0		61.2	55.1		63.8		64
Medium Trucks:	58	.9 5	7.4		51.0	49.5	5	57.9	)	58.
Heavy Trucks:	60.	.2 5	8.8		49.7	51.0	)	59.3	1	59.
Vehicle Noise:	66	.9 6	5.2		61.9	57.3	3	65.9	)	66.
Centerline Distand	ce to Noise Co	ntour (in feet)								
				70 dE	BA 65	dBA	6	60 dBA	55	dBA
		,	dn:	18		39		84	1	80
		1		10						00

	FH\	NA-RD-77-108	HIG	HWAY	NOISE P	REDICTI		DDEL			
Scenari	o: Interim Ye	ar 2021				Project	Name:	Bedfor	d Marketp	lace	
Road Nam	e: Bedford C	yn. Rd.				Job N	umber:	12751			
Road Segmer	nt: s/o El Cerr	ito Rd.									
	SPECIFIC I	NPUT DATA			011 0					S	
Highway Data					Site Cor	ditions	(Hard		,		
Average Daily			s					Autos:	15		
	Percentage:	10%				dium Tru			15		
	our Volume:	1,013 vehicle	s		He	avy Truc	cks (3+	Axles):	15		
Vei	hicle Speed:	40 mph			Vehicle	Mix					
Near/Far Lar	ne Distance:	24 feet			Veh	icleType		Day	Evening	Night	Daily
Site Data						-	Autos:	77.5%	12.9%	9.6%	97.429
Bai	rier Height:	0.0 feet			М	edium Ti	rucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-W	•	0.0				Heavy Ti	rucks:	86.5%	2.7%	10.8%	0.74
Centerline Dis	t. to Barrier:	38.0 feet			Noise S	ource El	levatio	ns (in fe	et)		
Centerline Dist.	o Observer:	38.0 feet				Auto		000			
Barrier Distance	o Observer:	0.0 feet			Modiu	m Truck		297			
Observer Height (J	Above Pad):	5.0 feet				/y Truck			Grade Ad	iustment	0.0
Pa	d Elevation:	0.0 feet			mou	.,	J. (				
Roa	d Elevation:	0.0 feet			Lane Eq	uivalent	t Dista	nce (in f	eet)		
1	Road Grade:	0.0%				Auto	s: 36	6.401			
	Left View:	-90.0 degre	es		Mediu	m Truck	s: 36	6.157			
	Right View:	90.0 degre	es		Hea	/y Truck	s: 36	5.181			
FHWA Noise Mode	el Calculation	is									
VehicleType	REMEL	Traffic Flow		istance		Road	Fres		Barrier Att		m Atten
Autos:	66.51			1.		-1.20		-4.57		000	0.00
Medium Trucks:	77.72	-18.62		2.	01	-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	82.99	-22.58		2.	00	-1.20		-5.59	0.0	000	0.00
Unmitigated Noise											
VehicleType	Leq Peak Ho			Leq E	evening		Night		Ldn		VEL
Autos:		5.9	64.0		62.2		56		64.6	-	65.
Medium Trucks:		9.9	58.4		52.0		50		58.9	-	59.
Heavy Trucks:	-	1.2	59.8		50.8		52	.0	60.4		60.
Vehicle Noise:	67	7.9	66.2		62.9		58	.4	66.	9	67.
Centerline Distand	e to Noise C	ontour (in feet	t)		10.4						
					dBA		dBA	6	0 dBA		dBA
			Ldn: NFI :		24 25		51 54		109 117	_	36 53

Scenario: Interim Year 2021 Road Name: Bedford Cyn. Rd. Road Same: Bedford Cyn. Rd. Site Sergetown Dr.         Project Name: Bedford Marketplace Job Number: 12751           SITE SPECIFIC INPUT DATA         NOISE MODEL INPUTS           Alte sergetown Dr.           Site Conditions (Hard = 10, Soft = 15)           Autos: 15           Autos: 15           Peak Hour Percentage: 10%         Medium Trucks (2 Axles): 15           Vehicle Speed: 40 mph           Near/Far Lane Distance: 24 feet         Vehicle Mix           Vehicle Mix           Barrier Height: 0.0 feet         Moles Course: 86.5% 2.7% 10.8% 0.74%           Barrier Height: 0.0 feet         Moles Course: 86.5% 2.7% 10.8% 0.74%           Barrier Height: 0.0 feet         Moles Course: 86.5% 2.7% 10.8% 0.74%           Centerline Dist. to Barrier: 38.0 feet         Moles Course: 2.297           Moles Grade: 0.0%         Autos: 36.401           Red Elevation: 0.0 feet         Barrier Atlen Distance (in feet)           Red Coracle: 0.0%         Autos: 36.401           Medium Trucks: 36.401 <th cols<="" th=""><th></th><th>FHW</th><th>'A-RD-77-108 HIG</th><th>GHWAY</th><th>NOISE PI</th><th>REDICTI</th><th>ON MOD</th><th>EL</th><th></th><th></th><th></th></th>	<th></th> <th>FHW</th> <th>'A-RD-77-108 HIG</th> <th>GHWAY</th> <th>NOISE PI</th> <th>REDICTI</th> <th>ON MOD</th> <th>EL</th> <th></th> <th></th> <th></th>		FHW	'A-RD-77-108 HIG	GHWAY	NOISE PI	REDICTI	ON MOD	EL			
Site Conditions (Hard = 10, Soft = 15)           Average Daily Traffic (Adt):         9,522 vehicles         Autos:         15           Peak Hour Porcentage:         10%         Autos:         15           Peak Hour Volume:         952 vehicles         Medium Trucks (2 Axles):         15           Vehicle Speed:         40 mph         Vehicle Type         Day         Evening         Night         Daily           Site Data	Road Name	Bedford Cyr	n. Rd.						l Marketpla	ace		
Average Daily Traffic (Ad):         9,522 vehicles         Autos:         15           Peak Hour Percentage:         10%         Medium Trucks (2 Axles):         15           Peak Hour Volume:         952 vehicles         Medium Trucks (2 Axles):         15           Vehicle Speed:         40 mph         Medium Trucks (2 Axles):         15           Site Data         Autos:         75.5%         12.9%         9.6%         97.42%           Barrier Type (0-Wall, 1-Berm):         0.0         6         Mutos:         77.5%         12.9%         9.6%         97.42%           Barrier Type (0-Wall, 1-Berm):         0.0         6         Medium Trucks:         84.8%         4.9%         1.03%         1.84%           Barrier Type (0-Wall, 1-Berm):         0.0         6         Motise Source Elevations (in feet)         Motise Source Elevations (in feet)         Motise Source Elevations (in feet)         Medium Trucks:         80.06         Grade Adjustment:         0.0           Centerline Dist. to Observer:         30.0 feet         Autos:         36.157         Heavy Trucks:         8.006         Grade Adjustment:         0.0           Road Grade:         0.0%         Distance         Finite Road         Fresnel         Barrier Atten         Bern Atten           Roduim Tru	SITE S	PECIFIC IN	PUT DATA			N	OISE M	ODEL	. INPUTS	5		
Peak Hour Percentage:         10%         Medium Trucks (2 Axles):         15           Peak Hour Volume:         952 vehicles         Heavy Trucks (3 + Axles):         15           Vehice Speed:         40 mph         Vehicle Type         Daily         Evening         Night         Daily           Site Data	Highway Data				Site Cor	ditions	(Hard = 1	0, So	ft = 15)			
Peak Hour Volume:         952 vehicles           Vehicle Speed:         40 mph           Near/Far Lane Distance:         24 feet           Site Data         Autos: 77.5% 12.9% 9.6% 97.42%           Barrier Height:         0.0 feet           Barrier Height:         0.0 feet           Barrier Jype (0-Wall, 1-Berm):         0.0           Centerline Dist. to Barrier:         38.0 feet           Barrier Jistance to Observer:         30.0 feet           Barrier Jistance to Observer:         30.0 feet           Road Grade:         0.0%           Left View:         90.0 degrees           Right View:         90.0 degrees           Right View:         90.0 degrees           Right View:         90.0 degrees           Right View:         90.0 degrees           WehicleType         Reav Trucks:           Autos:         36.157           Heavy Trucks:         8.157           Heavy Trucks:         8.157           Heavy Trucks:         8.1617           Heavy Trucks:         8.1617           Heavy Trucks:         8.1617           Heavy Trucks:         8.151           Heavy Trucks:         8.161           Heavy Trucks:         8.1617	Average Daily T	raffic (Adt):	9,522 vehicles				А	utos:	15			
Vehicle Speed:         40 mph 24 feet         Vehicle Mix           Site Data         Vehicle Mix         Vehicle Type         Day         Evening         Night         Daily           Site Data         Autos:         77.5%         12.9%         9.6%         97.42%           Barrier Height:         0.0 feet         Medium Trucks:         84.8%         4.9%         10.3%         1.84%           Barrier Type (0-Wall, 1-Berm):         0.0         Medium Trucks:         86.5%         2.7%         10.8%         0.74%           Centerline Dist to Dserver:         0.0 feet         Motize Source Elevations (in feet)         Motize Source Elevations (in feet)         0.0           Barrier Distance to Observer:         0.0 feet         Autos:         0.00         Medium Trucks:         8.006         Grade Adjustment:         0.0           Pad Elevation:         0.0 feet         Autos:         36.157         Heavy Trucks:         36.157           Pad Elevation:         0.0 degrees         Medium Trucks:         36.157         Heavy Trucks:         36.157           WehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Bern Atten           Autos:         66.51         -1.65	Peak Hour F	Percentage:	10%		Me	dium Tru	icks (2 Ax	des):	15			
Near/Far Lane Distance:         24 feet         Venicle Type         Day         Evening         Night         Daily           Site Data         Autos:         77.5%         12.9%         9.6%         97.42%           Barrier Type (O-Walt, 1-Berm):         0.0         0.0         Medium Trucks:         84.8%         4.9%         12.9%         9.6%         97.42%           Barrier Type (O-Walt, 1-Berm):         0.0         0.0         Medium Trucks:         84.8%         4.9%         4.9%         0.3%         1.84%           Barrier Type (O-Walt, 1-Berm):         0.0         0.0         Medium Trucks:         0.0%         77.4%         0.0%         77.4%         0.0%         77.4%         0.0%         77.4%         0.000         Medium Trucks:         0.000         Medium Trucks:         8.06         Grade Adjustment:         0.0           Barrier Atten terview:         90.0 degrees         Medium Trucks:         36.167         1.96         1.20         7.657         0.000         0.000           Heavy Trucks:         82.99         -22.85         2.00         -1.20         -4.57         0.000         0.000           Medium Trucks:         77.72         -18.89         2.01         -1.20         -4.57         0.000 <t< td=""><td>Peak Ho</td><td>ur Volume:</td><td>952 vehicles</td><td></td><td>He</td><td>avy Truc</td><td>ks (3+ Ax</td><td>des):</td><td>15</td><td></td><td></td></t<>	Peak Ho	ur Volume:	952 vehicles		He	avy Truc	ks (3+ Ax	des):	15			
Near/Far Lane Distance:         24 feet         VehicleType         Day         Evening         Night         Daily           Site Data         Autos:         77.5%         12.9%         9.6%         97.42%           Barrier Type (0-Wall, 1-Berm):         0.0         6         Modium Trucks:         84.8%         4.9%         1.03%         1.84%           Barrier Type (0-Wall, 1-Berm):         0.0         0         Modium Trucks:         86.5%         2.7%         10.8%         0.74%           Centerline Dist. to Doserver:         0.0 feet         Noise Source Elevations (in feet)         0.0         Modium Trucks:         2.297         0.00         Medium Trucks:         8.0.06         Grade Adjustment:         0.0           Barrier Distance to Observer:         0.0 feet         Autos:         36.401         Medium Trucks:         36.157           Road Elevation:         0.0 feet         Autos:         36.157         Heavy Trucks:         36.157           FHWA Noise Model Calculations         VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fressel         Barrier Atten         Bern Artten           Autos:         66.51         -1.55         1.96         -1.20         -4.57         0.000         0.0000	Veh	icle Speed:	40 mph		Vehicle	Mix						
Site Data         Autos:         77.5%         12.9%         6.6%         97.42%           Barrier Height:         0.0         6.6%         97.42%         Medium Trucks:         84.8%         4.9%         10.3%         1.84%           Barrier Type (0-Wall, 1-Berm):         0.0         0.0         Medium Trucks:         84.8%         2.7%         10.8%         0.74%           Centerline Dist. to Barrier:         38.0 feet         Moise Source Elevations:         0.000         Medium Trucks:         2.7%         10.8%         0.74%           Diserver Height (Above Pad):         5.0 feet         Autos:         0.000         Medium Trucks:         2.297         Medium Trucks:         2.297           Observer Height (Above Pad):         5.0 feet         Autos:         8.006         Grade Adjustment:         0.0           Road Elevation:         0.0 feet         Autos:         36.167         Heavy Trucks:         36.161           Autos:         66.51         -1.65         1.96         -1.20         -4.57         0.000         0.000           Medium Trucks:         77.72         -18.89         2.01         -1.20         -4.57         0.000         0.000           Medium Trucks:         77.72         -18.89         2.01	Near/Far Lan	e Distance:	24 feet				Г	)av	Evenina	Niaht	Daily	
Barrier Height:         0.0 feet           Barrier Type (0-Wall, 1-Berm):         0.0           Centerline Dist. to Barrier:         38.0 feet           Barrier Distance to Observer:         30.0 feet           Barrier Distance to Observer:         0.0 feet           Road Grade:         0.0%           Left View:         -90.0 degrees           Right View:         90.0 degrees           Right View:         90.0 degrees           PHWA Noise Model Calculations         1.165           VehicleType         REMEL         Traffic Flow         Distance           VehicleType         REMEL         Traffic Flow         Distance           VehicleType         Legt Viehour         Top and barrier attenuation)         Bernier Atten           VehicleType         Leg Paek Hour         Top and barrier attenuation)         Energenergenergenergenergenergenergenerg	Site Data				1011			,	v .	v		
Barrier Type (0-Wall, 1-Berm):         0.0         Heavy Trucks:         86.5%         2.7%         10.8%         0.74%           Centerline Dist. to Desriver:         30.0 feet         Noise Source Elevations (in feet)         Autos:         0.0           Barrier Distance to Observer:         0.0 feet         Autos:         0.00         Medium Trucks:         2.297           Observer Height (Above Pad):         5.0 feet         Autos:         36.401         Medium Trucks:         36.157           Pad Elevation:         0.0 feet         Autos:         36.517         Heavy Trucks:         36.157           VehicleType         ReMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Bern Atten           Autos:         66.51         -1.65         1.96         -1.20         -4.57         0.000         0.000           Medium Trucks:         82.99         -22.85         2.00         -1.20         -4.57         0.000         0.000           Medium Trucks:         82.99         -22.85         2.00         -1.20         -4.57         0.000         0.000           Medium Trucks:         82.99         -22.85         2.00         -5.59         0.000         0.0000 <td< td=""><td>Par</td><td>ior Hoight:</td><td>0.0 foot</td><td></td><td>М</td><td>edium Tr</td><td></td><td></td><td></td><td></td><td>-</td></td<>	Par	ior Hoight:	0.0 foot		М	edium Tr					-	
Centerline Dist. to Barrier:         38.0 feet         Noise Source Elevations (in feet)           Centerline Dist. to Doserver:         30.0 feet         Autos:         0.000           Barrier Distance to Observer:         0.0 feet         Autos:         0.000           Deserver Height (Above Pad):         5.0 feet         Medium Trucks:         2.297           Pad Elevation:         0.0 feet         Lane Equivalent Distance (in feet)           Road Grade:         0.0%         Autos:         36.161           Rodad Grade:         0.0%         Autos:         36.181           FHWA Noise Model Calculations         Distance         Finite Road         Fresnel         Barrier Atten         Berner Atten           Autos:         66.51         -1.65         1.96         -1.20         -4.67         0.000         0.000           Heavy Trucks:         82.99         -22.85         2.00         -1.20         -4.67         0.000         0.000           Heavy Trucks:         82.99         -22.85         2.00         -1.20         -4.67         0.000         0.000           Umitigated Noise Levels (without Topo and barrier attenuation)         VehicleType         Leq Peak Hour         Leq Verying         Leq Night         Ldn         CNEL <td< td=""><td></td><td></td><td></td><td></td><td></td><td>Heavy Tr</td><td>ucks: 8</td><td>6.5%</td><td>2.7%</td><td>10.8%</td><td>0.74%</td></td<>						Heavy Tr	ucks: 8	6.5%	2.7%	10.8%	0.74%	
Centerline Dist. to Observer:         38.0 feet         Autos:         0.000           Barrier Distance to Observer:         0.0 feet         Medium Trucks:         2.297           Observer Height (Above Pad):         5.0 feet         Heavy Trucks:         8.0.06         Grade Adjustment:         0.0           Pad Elevation:         0.0 feet         Left View:         9.0.0 feet         Left View:         9.0.0 degrees           Right View:         90.0 degrees         Right View:         90.0 degrees         Finite Road         Fresnel         Barrier Atten         Berm Atten           Vehicle Type         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Atten           Autos:         66.51         -1.65         1.96         -1.20         -4.57         0.000         0.000           Medium Trucks:         77.72         -18.89         2.01         -1.20         -4.57         0.000         0.000           Medium Trucks:         82.99         -22.85         2.00         -1.20         -4.57         0.000         0.000           Unnitigated Noise Levels (without Topo and barrier attenuation)         Leq Rowinght         Ldn         CNEL           Autos:         65.6         63.7<												
Barrier Distance to Observer:         0.0 feet         Autos:         0.00           Observer Height (Above Pad):         5.0 feet         Medium Trucks:         2.297           Pad Elevation:         0.0 feet         Lane Equivalent Distance (in feet)         0.0           Road Grade:         0.0%         Autos:         36.401           Left View:         90.0 degrees         Medium Trucks:         36.157           While Trucks:         36.157         Heavy Trucks:         36.157           Heavy Trucks:         36.157         Heavy Trucks:         36.157           Vehicle Type         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Bern Atten           Autos:         66.51         -1.65         1.96         -1.20         -4.57         0.000         0.000           Medium Trucks:         82.99         -22.85         2.00         -1.20         -4.57         0.000         0.000           Medium Trucks:         82.99         -22.85         2.00         -1.20         -6.59         0.000         0.000           Medium Trucks:         59.6         58.1         51.8         50.2         58.7         58.9           Autos:         65.6<					Noise Se			•	et)			
Observer Height (Above Pad):         5.0 feet Pad Elevation:         0.0 feet 0.0 feet         Heavy Trucks:         2.297 8.006         Grade Adjustment:         0.0           Road Elevation:         0.0 feet         Lane Equivalent Distance (in feet)         Lane Equivalent Distance (in feet)           Left View:         -90.0 degrees         Medium Trucks:         36.401           Left View:         -90.0 degrees         Medium Trucks:         36.401           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten           Medium Trucks:         77.72         -18.89         2.01         -1.20         -4.87         0.000         0.000           Medium Trucks:         77.72         -18.89         2.01         -1.20         -4.87         0.000         0.000           Medium Trucks:         77.72         -18.69         2.01         -1.20         -4.87         0.000         0.000           Medium Trucks:         75.59         0.000         0.000         0.000         0.000         0.000         0.000         0.000         0.000         0.000         0.000         0.000         0.000         0.000         0.000         0.000         0.000         0.000         0.000 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>												
Pad Elevation:         0.0 feet         Ineary Index:         8.006         Grade Adjustment.         0.0           Road Elevation:         0.0 feet         0.0 feet         Lane Equivalent Distance (in feet)         Lane Equivalent Distance (in feet)           Road Elevation:         0.0 degrees         Autos:         36.01         Medium Trucks:         36.157           Heavy Trucks:         36.151         Heavy Trucks:         36.151         Heavy Trucks:         36.161           Vehicle Type         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Atten           Autos:         66.51         -1.65         1.96         -1.20         -4.57         0.000         0.000           Medium Trucks:         77.72         -18.89         2.01         -1.20         -4.67         0.000         0.000           Unnitigated Noise Levels (without Topo and barrier attenuation)         VehicleType         Leq Day         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         65.6         63.7         62.0         55.9         64.5         65.1           Medium Trucks:         59.6         58.1         51.8         50.2         51.7         60.1			***									
Road Grade:         0.0%         Autos:         36.401           Left View:         -90.0 degrees         Medium Trucks:         36.401           Heavy Trucks:         36.157         Heavy Trucks:         36.157           FHWA Noise Model Calculations         Distance         Finite Road         Fresnel         Barrier Atten           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten           Medium Trucks:         77.72         -18.69         2.01         -1.20         -4.57         0.000         0.000           Medium Trucks:         77.72         -18.69         2.01         -1.20         -4.87         0.000         0.000           Medium Trucks:         77.72         -18.69         2.01         -1.20         -4.87         0.000         0.000           Unnitigated Noise Levels (without Topo and barrier attenuation)         -22.85         2.00         -1.20         -5.59         0.000         0.000           Unnitigated Noise Levels (without Topo and barrier attenuation)         -4.87         0.000         0.000           Vehicle Type         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:		,			Heav	y Trucks	8: 8.00	06 (	Grade Adji	istment:	0.0	
Left View:         -90.0 degrees         Medium Trucks:         36.157           Right View:         90.0 degrees         Medium Trucks:         36.157           FHWA Noise Model Calculations         Email         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Atten           Vehicle Type         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Atten           Medium Trucks:         77.72         -18.89         2.01         -1.20         -4.57         0.000         0.000           Medium Trucks:         82.99         -22.85         2.00         -1.20         -4.57         0.000         0.000           Unnitigated Noise Levels (without Topo and barrier steruation)         VehicleType         Leq Day         Leq Right         Ldn         CNEL           Autos:         65.6         63.7         62.0         55.9         64.5         65.1           Medium Trucks:         59.6         58.1         51.8         50.2         58.7         58.9           Medium Trucks:         59.6         65.9         62.6         58.1         66.6         67.1           Medium Trucks:         61.0         59.5	Roa	d Elevation:	0.0 feet		Lane Eq	uivalent	Distance	e (in fe	eet)			
Right View:         90.0 degrees         Heavy Trucks:         36.181           FHWA Noise Model Calculations         Distance         Finite Road         Fresnel         Barrier Atten         Bern Atten           Autos:         66.51         -1.65         1.96         -1.20         -4.57         0.000         0.000           Medium Trucks:         77.72         -18.89         2.01         -1.20         -4.67         0.000         0.000           Heavy Trucks:         82.99         -22.85         2.00         -1.20         -4.67         0.000         0.000           Unnitigated Noise Levels (without Topo and barrier attenuation)         Vehicle Nypp         Leq Peak Hour         Leq Rvening         Leq Night         Ldn         CNEL           Autos:         65.6         63.7         62.0         55.9         66.5         65.1           Medium Trucks:         59.6         58.1         51.8         50.2         58.7         58.9           Heavy Trucks:         61.0         59.5         50.5         51.7         60.1         60.2           Vehicle Noise:         67.6         65.9         62.6         58.1         66.6         67.1           Medium Trucks:         59.0         50.5	R	oad Grade:	0.0%			Autos	36.40	01				
FHWA Noise Model Calculations         Environmentation           VehicleType         REIMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Atten           Autos:         66.51         -1.65         1.96         -1.20         -4.57         0.000         0.000           Medium Trucks:         77.72         -18.89         2.01         -1.20         -4.87         0.000         0.000           Heavy Trucks:         29.9         -22.85         2.00         -1.20         -5.59         0.000         0.000           Unnitigated Noise Levels (without Topo and barrier attenuation)          VehicleType         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         65.6         63.7         62.0         55.9         64.5         65.1           Medium Trucks:         65.6         63.7         62.0         55.7         69.1         60.2           Heavy Trucks:         61.0         59.5         50.5         51.7         60.1         60.2           Vehicle Noise:         67.6         65.9         62.6         58.1         66.6         67.1           Centerline Distance to Noise Con		Left View:	-90.0 degrees		Mediu	m Trucks	: 36.1	57				
VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Atten           Autos:         66.51         -1.65         1.96         -1.20         -4.57         0.000         0.000           Medium Trucks:         77.72         -18.89         2.01         -1.20         -4.57         0.000         0.000           Heavy Trucks:         82.99         -22.85         2.00         -1.20         -5.59         0.000         0.000           Unnitigated Noise Levels (without Topo and barrier attenuation)         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         65.6         63.7         62.0         55.9         64.5         65.1           Medium Trucks:         59.6         58.1         51.8         50.2         58.7         68.9           Heavy Trucks:         61.0         59.5         50.5         51.7         60.1         60.2           Vehicle Noise:         67.6         65.9         62.6         58.1         66.6         67.1           Centerline Distance to Noise Contour (in feet)		Right View:	90.0 degrees		Heav	y Trucks	36.1	81				
Autos:         66.51         -1.65         1.96         -1.20         -4.57         0.000         0.000           Medium Trucks:         77.72         -18.89         2.01         -1.20         -4.87         0.000         0.000           Heavy Trucks:         82.99         -22.85         2.00         -1.20         -4.87         0.000         0.000           Umritigate Moise Levels (without Topo and barier attenuation)         VehicleType         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         65.6         63.7         62.0         55.9         64.5         65.1           Medium Trucks:         59.6         58.1         51.8         50.2         58.7         58.9           Heavy Trucks:         61.0         59.5         50.5         51.7         60.1         60.2           Vehicle Noise:         67.6         65.9         62.6         58.1         66.6         67.1           Centerline Distance to Noise Contour (in feet)	FHWA Noise Mode	Calculations										
Medium Trucks:         77.72         -18.89         2.01         -1.20         -4.87         0.000         0.000           Heavy Trucks:         82.99         -22.85         2.00         -1.20         -5.59         0.000         0.000           Umitigated Noise Levels (without Topo and barrier attenuation         Leq Night         Ldn         CNEL           VehiceType         Leq Peak Hour         Leq Day         Leq Right         Ldn         CNEL           Autos:         55.6         63.7         62.0         55.9         64.5         65.1           Medium Trucks:         59.6         58.1         51.8         50.2         58.7         58.9           Heavy Trucks:         61.0         59.5         50.5         51.7         60.1         60.2           Vehicle Noise:         67.8         65.9         62.6         58.1         66.6         67.1           Centerline Distance to Noise Contour (in feet)         To dBA         65 dBA         60 dBA         55 dBA           Ldn:         23         49         105         226	VehicleType	REMEL	Traffic Flow D	Distance	Finite	Road	Fresne	l E	Barrier Atte	n Ben	m Atten	
Heavy Trucks:         82.99         -22.85         2.00         -1.20         -5.59         0.000         0.000           Unnitigated Noise Levels (without Topo and barrier attenuation)         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         65.6         63.7         62.0         55.9         64.5         65.1           Medium Trucks:         59.6         58.1         51.8         50.2         58.7         68.9           Heavy Trucks:         61.0         59.5         50.5         51.7         60.1         60.2           Vehicle Noise:         67.6         65.9         62.6         58.1         66.6         67.1           Centerline Distance to Noise Contour (in feet)         TO dBA         65 dBA         60 dBA         55 dBA           Ldn:         23         49         105         226	Autos:	66.51	-1.65	1.9	96	-1.20		4.57	0.0	00	0.000	
Unmitigated Noise Levels (without Topo and barrier attenuation)           VehicleType         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         65.6         63.7         62.0         55.9         64.5         65.1           Medium Trucks:         59.6         58.1         51.8         50.2         58.7         58.9           Heavy Trucks:         61.0         59.5         50.5         51.7         60.1         60.2           Vehicle Noise:         67.6         65.9         62.6         58.1         66.6         67.1           Centerline Distance to Noise Contour (in feet)           Lan:         70 dBA         65 dBA         60 dBA         55 dBA           Ldn:         23         49         105         226	Medium Trucks:	77.72	-18.89	2.0	01	-1.20		4.87	0.0	00	0.000	
Vehicle Type         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         65.6         63.7         62.0         55.9         64.5         65.1           Medium Trucks:         59.6         58.1         51.8         50.2         58.7         58.9           Heavy Trucks:         61.0         59.5         50.5         51.7         60.1         60.2           Vehicle Noise:         67.6         65.9         62.6         58.1         66.6         67.1           Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA           Ldm:         23         49         105         226	Heavy Trucks:	82.99	-22.85	2.0	00	-1.20	-	5.59	0.0	00	0.000	
Autos:         65.6         63.7         62.0         55.9         64.5         65.1           Medium Trucks:         59.6         58.1         61.8         50.2         58.7         58.9           Heavy Trucks:         51.0         59.5         50.5         51.7         60.1         60.2           Vehicle Noise:         67.6         65.9         62.6         58.1         66.6         67.1           Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA           Ldn:         23         49         105         226				rier atte	nuation)							
Medium Trucks:         59.6         58.1         51.8         50.2         58.7         58.9           Heavy Trucks:         61.0         59.5         50.5         51.7         60.1         60.2           Vehicle Noise:         67.6         65.9         62.6         58.1         66.6         67.1           Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA           Ldn:         23         49         105         226		1					•					
Heavy Trucks:         61.0         59.5         50.5         51.7         60.1         60.2           Vehicle Noise:         67.6         65.9         62.6         58.1         66.6         67.1           Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA           Ldn:         23         49         105         226												
Vehicle Noise:         67.6         65.9         62.6         58.1         66.6         67.1           Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA           Ldn:         23         49         105         226												
Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA           Ldn:         23         49         105         226												
TO dBA         65 dBA         60 dBA         55 dBA           Ldn:         23         49         105         226				9	62.6		58.1		66.6		67.1	
Ldn: 23 49 105 226	Centerline Distance	e to Noise Co	ntour (in feet)									
							-			-		
UNEL 24 52 112 242			CNEL		24	5	2		112	2	42	

Friday, November 22, 2019

Friday, November 22, 2019

	FHW	A-RD-77-108	HIGHV	VAY NO	DISE PF	REDICTI		EL			
Road Name	o: Interim Year e: Bedford Cyr nt: n/o Eagle G	n. Rd.					Name: E umber: 1		d Marketpla	ace	
	SPECIFIC IN	PUT DATA							INPUTS	5	
Highway Data				S	ite Con	ditions	(Hard =	10, So	ft = 15)		
Average Daily 1 Peak Hour F Poak H	Percentage:	0,542 vehicle 10% 1.054 vehicle					/ Icks (2 A Iks (3+ A	,	15 15 15		
	nicle Speed:	40 mph	5		1104	avy muc	N3 (0+ M	103).	10		
Near/Far Lan		24 feet		V	ehicle I			0	E contra e	Allenter	D-it.
01. 0.					veni	icleType		Day 77.5%	Evening 12.9%	Night 9.6%	Daily 97.42%
Site Data						ہ dium Tr		7.5% 34.8%	4.9%		
Bar Barrier Type (0-Wa	rier Height:	0.0 feet				leavy Tr		34.8% 36.5%	4.9% 2.7%	10.3% 10.8%	
Centerline Dis	. ,	38.0 feet			nisa Sr	, urce Fl	evations	(in fo	of)		
Centerline Dist. t	o Observer:	38.0 feet			0.00 00	Autos			01/		
Barrier Distance t	o Observer:	0.0 feet			Modiu	n Trucks					
Observer Height (A	,	5.0 feet				y Trucks			Grade Adj	ustment	: 0.0
	d Elevation:	0.0 feet			_						
	d Elevation:	0.0 feet		L	ane Eq		Distanc		eet)		
F	Road Grade:	0.0%				Autos	. 00.4				
	Left View: Right View:	-90.0 degre 90.0 degre				n Trucks v Trucks					
FHWA Noise Mode	Coloulations					-					
VehicleType	REMEL	Traffic Flow	Dista	2000	Finite	Pood	Fresn	~ 1	Barrier Atte	an Ro	rm Atten
Autos:	66.51	-1.21	Dista	1.96	1 mile	-1.20		4.57	0.0		0.000
Medium Trucks:	77.72	-18.45		2.01		-1.20		4.87	0.0		0.000
Heavy Trucks:	82.99	-22.40		2.00		-1.20		5.59	0.0	00	0.000
Unmitigated Noise	Levels (witho	out Topo and	barrier	attenu	ation)						
VehicleType	Leq Peak Hou	<ul> <li>Leq Day</li> </ul>	/ 1	Leq Eve	ening	Leq I	Night		Ldn	C	NEL
Autos:	66.		64.2		62.4		56.3		65.0		65.6
Medium Trucks:	60.		58.6		52.2		50.7		59.1		59.4
Heavy Trucks:	61.		60.0		50.9		52.2		60.5		60.7
Vehicle Noise:	68.		66.4		63.1		58.5		67.1		67.5
Centerline Distance	e to Noise Co	ntour (in feel	)	70 dl	24	65 (		~			dBA
			Ldn:	70 al		5			0 dBA 112		42 242
		C	Lan: NFL:	24		5	-		112		242 259
		0	VLL.	20		5	0		120	4	

	FHW.	A-RD-77-108 H	IIGHW	AY NO	ISE PREDICT	ION MOD	EL		
Road Name	o: Interim Year e: Temescal C nt: n/o Cajalco F	yn. Rd.				t Name: B Number: 1		larketpla	ce
SITE S	SPECIFIC INF	PUT DATA				NOISE M			
Highway Data				Sit	te Conditions	; (Hard = 1	10, Soft :	= 15)	
	Percentage: our Volume:	10% 1,717 vehicles			Medium Ti Heavy Tru	ucks (2 A	des):	15 15 15	
ver Near/Far Lan	nicle Speed:	45 mph 51 feet		Ve	hicle Mix				
Near/Far Lan	le Distance:	51 Teet			VehicleTyp	e L	Day E	/ening	Night Daily
Site Data						Autos: 7	7.5%	12.9%	9.6% 97.42%
Bar	rier Height:	0.0 feet			Medium 1	rucks: 8	84.8%	4.9%	10.3% 1.84%
Barrier Type (0-Wa		0.0			Heavy	rucks: 8	86.5%	2.7%	10.8% 0.74%
Centerline Dis	. ,	53.0 feet		No	ise Source E	lovationa	(in fact		
Centerline Dist. t	o Observer:	53.0 feet		INC	Auto		. /		
Barrier Distance t	o Observer:	0.0 feet							
Observer Height (A	Above Pad):	5.0 feet			Medium Truci				
0 1	d Elevation:	0.0 feet			Heavy Truck	ks: 8.0	06 G/	ade Adju	stment: 0.0
	d Elevation:	0.0 feet		La	ne Equivaler	t Distanc	e (in fee	t)	
F	Road Grade:	0.0%			Auto	os: 46.7	31		
	Left View:	-90.0 degrees			Medium Truci	ks: 46.5	41		
	Right View:	90.0 degrees	6		Heavy Truci	ks: 46.5	59		
FHWA Noise Mode	el Calculations								
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite Road	Fresne	el Ba	rrier Attei	n Berm Atten
Autos:	68.46	0.40		0.34	-1.20	-	4.66	0.00	0.00
Medium Trucks:	79.45	-16.84		0.36	-1.20		4.87	0.00	0.00
Heavy Trucks:	84.25	-20.80		0.36	-1.20	-	5.40	0.00	0.00
Unmitigated Noise	Levels (witho	ut Topo and b	arrier	attenua	ation)				
VehicleType	Leq Peak Hour	Leq Day	L	eq Eve	ning Leq	Night	Lo	In	CNEL
Autos:	68.0	) 6	6.1		64.3	58.3		66.9	67.
Medium Trucks:	61.8	3 6	0.3		53.9	52.4		60.8	61.
Heavy Trucks:	62.6	6 6	1.2		52.2	53.4		61.8	61.
Vehicle Noise:	69.8	3 6	8.1		64.9	60.3		68.8	69.
Centerline Distanc	e to Noise Cor	ntour (in feet)							
				70 dB	A 65	dBA	60 c	iBA 🛛	55 dBA
		L	dn:	44		95	20	5	441
		CN							

	FHV	VA-RD-77-108	HIGHV	VAY N	IOISE PR	EDICTIO	N MODE	ΞL			_
Scenari	o: Interim Yea	ar 2021				Project N	ame: Be	edford	d Marketpla	ace	
	e: Temescal (					Job Nur	nber: 12	2751			
Road Segmer	nt: s/o Cajalco	Rd.									
	SPECIFIC IN	IPUT DATA								5	
Highway Data				1	Site Con	ditions (H		· ·	ft = 15)		
Average Daily	Traffic (Adt):		s					itos:	15		
Peak Hour	Percentage:	10%				dium Truc			15		
	our Volume:	2,403 vehicle	s		Hea	avy Truck	s (3+ Ax	les):	15		
	hicle Speed:	45 mph			Vehicle I	Nix					
Near/Far Lai	ne Distance:	51 feet			Vehi	cleType	D	ay	Evening	Night	Daily
Site Data						Au	tos: 7	7.5%	12.9%	9.6%	97.42%
Bai	rier Height:	0.0 feet			Me	edium Tru	cks: 84	4.8%	4.9%	10.3%	1.84%
Barrier Type (0-W		0.0			F	leavy Tru	cks: 86	6.5%	2.7%	10.8%	0.74%
Centerline Dis		53.0 feet		7	Noise So	urce Ele	ations	(in fe	et)		
Centerline Dist.		53.0 feet				Autos:	0.00		,		
Barrier Distance		0.0 feet			Mediur	n Trucks:	2.29	7			
Observer Height (	,	5.0 feet			Heav	v Trucks:	8.00	6	Grade Adji	ustment:	0.0
	ad Elevation:	0.0 feet		H							
	ad Elevation:	0.0 feet		4	Lane Equ	uivalent L			eet)		
1	Road Grade:	0.0%				Autos:	46.73				
	Left View:	-90.0 degre				n Trucks:	46.54				
	Right View:	90.0 degre	es		Heav	y Trucks:	46.55	9			
FHWA Noise Mode	el Calculation	-									
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite		Fresnel		Barrier Atte		m Atten
Autos:	68.46	1.86		0.34		-1.20		1.66	0.0		0.00
Medium Trucks:	79.45	-15.38		0.36	-	-1.20		1.87	0.0		0.000
Heavy Trucks:	84.25	-19.34		0.36	6	-1.20	-5	5.40	0.0	00	0.00
Unmitigated Noise											
VehicleType	Leq Peak Hou			Leq E	vening	Leq N	~		Ldn		VEL
Autos:	69		67.6		65.8		59.7		68.4		69.0
Medium Trucks:	63		61.7		55.4		53.8		62.3		62.5
Heavy Trucks:	64		62.7		53.6		54.9		63.2		63.3
Vehicle Noise:	71	.3	69.6		66.4		61.7		70.3		70.
	ce to Noise C	ontour (in feet	)								
Centerline Distant				70 0	dBA	65 dE	3A	6	0 dBA	55	dBA
Centerline Distant											
Centerline Distant			Ldn: NFL :	5	5	119			256 275		52 92

	FHV	NA-RD-77-108	HIGHWA	Y NOISE	E PREDICTION	N MODEL			
	o: Interim Yea e: California A nt: w/o Master	Av.				ame: Bedfo nber: 12751	rd Marketpla	ace	
SITE	SPECIFIC IN	NPUT DATA			NO	ISE MODE	L INPUTS	5	
Highway Data				Site	Conditions (H	ard = 10, S	oft = 15)		
Average Daily	Traffic (Adt):	5,912 vehicles	3			Autos	15		
Peak Hour	Percentage:	10%			Medium Truck	ks (2 Axles):	15		
Peak H	our Volume:	591 vehicles	6		Heavy Trucks	(3+ Axles).	15		
Vef	hicle Speed:	40 mph		Vohi	cle Mix				
Near/Far Lar	ne Distance:	14 feet		-	VehicleType	Day	Evening	Night	Daily
Site Data					Aut		•	9.6%	97.42%
		0.0 feet		_	Medium Truc			10.3%	1.84%
Barrier Type (0-Wa	rier Height:	0.0 teet			Heavy Truc			10.8%	0.74%
Centerline Dis		34.0 feet							
Centerline Dist. t		34.0 feet		Nois	e Source Elev	ations (in f	eet)		
Barrier Distance t		0.0 feet			Autos:	0.000			
Observer Height (/		5.0 feet			edium Trucks:	2.297			
U 1	d Elevation:	0.0 feet		F	leavy Trucks:	8.006	Grade Adju	ustment:	0.0
	d Elevation:	0.0 feet		Lane	Equivalent D	istance (in	feet)		
	Road Grade:	0.0%			Autos:	33.645			
	Left View:	-90.0 degree	2	Me	dium Trucks:	33.381			
	Right View:	90.0 degree			leavy Trucks:	33.407			
FHWA Noise Mode	el Calculation	IS							-
VehicleType	REMEL	Traffic Flow	Distanc	e Fi	nite Road	Fresnel	Barrier Atte	en Berr	n Atten
Autos:	66.51	-3.72	:	2.48	-1.20	-4.53	0.0	00	0.000
Medium Trucks:	77.72	-20.96	:	2.53	-1.20	-4.86	0.0	00	0.000
Heavy Trucks:	82.99	-24.92	:	2.52	-1.20	-5.67	0.0	00	0.000
Unmitigated Noise									
	Leq Peak Hou	1 1		r Evenin			Ldn		IEL
Autos:	64		52.2	-	60.4	54.3	63.0		63.6
Medium Trucks:	58		56.6	-	60.2	48.7	57.1		57.4
Heavy Trucks:	59		58.0		8.9	50.2	58.5		58.7
Vehicle Noise:	66		64.4	6	51.1	56.5	65.1		65.5
Centerline Distance	e to Noise C	ontour (in feet)		70 dBA	65 dB	4	60 dBA	57	dBA
			Ldn:	16	65 dB 34	PN .	50 dBA 74		ава 60
			Lan: IFL:	16 17	34 37		74 79		50 71
		Cr	VLL.	17	37		19	14	1

Friday, November 22, 2019

Friday, November 22, 2019

FH	IWA-RD-77-108	HIGHW	AY N	DISE PF	REDICTI	ON MOI	DEL			
Scenario: Interim Ye								d Marketpl	ace	
Road Name: California					Job Ni	umber: *	12751			
Road Segment: e/o Maste	ers Dr.									
SITE SPECIFIC I	NPUT DATA							L INPUT	S	
Highway Data			S	ite Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily Traffic (Adt):	7,897 vehicle	s					Autos:	15		
Peak Hour Percentage:	10%				dium Tru		/	15		
Peak Hour Volume:	790 vehicle	s		He	avy Truc	ks (3+ A	xles):	15		
Vehicle Speed:	40 mph		v	ehicle I	Mix					
Near/Far Lane Distance:	14 feet		-	Veh	icleType		Day	Evening	Night	Daily
Site Data					A	utos:	77.5%	12.9%	9.6%	97.42%
Barrier Height:	0.0 feet			Me	edium Tr	ucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm):	0.0			ŀ	leavy Tr	ucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier:	34.0 feet		٨	loise So	ource El	evations	s (in fe	et)		
Centerline Dist. to Observer:	34.0 feet				Autos	s: 0.0	000			
Barrier Distance to Observer:	0.0 feet			Mediu	m Trucks	: 2.2	297			
Observer Height (Above Pad):	5.0 feet			Heav	y Trucks	: 8.0	006	Grade Adj	ustment	: 0.0
Pad Elevation:	0.0 feet			ono Ea	uivalent	Distant	o (in i	fa a f		
Road Elevation: Road Grade:	0.0 feet		-	ane Eq	Autos			eel)		
Road Grade: Left View:	0.0%			Madiu	n Trucks	. 00.0				
Right View:	-90.0 degre 90.0 degre				y Trucks					
Ū	ů	63			,					
FHWA Noise Model Calculatio VehicleType REMEL	ns Traffic Flow	Dista		Finite	Deed	Fresn	-1	Barrier Att		m Atten
VehicleType REMEL Autos: 66.5		Dista	2.48		-1.20		ei -4.53	Barrier Atto 0.0		m Atten 0.000
Medium Trucks: 77.7			2.40		-1.20		-4.86	0.0		0.000
Heavy Trucks: 82.9			2.53		-1.20		-5.67	0.0		0.000
Unmitigated Noise Levels (wit	hout Topo and	barrier	atteni	uation)						
VehicleType Leq Peak Ho	our Leg Day	/ L	eq Ev	, ening	Leq I	Vight		Ldn	C	NEL
Autos: 6	5.3	63.4		61.7		55.6		64.2	2	64.8
Medium Trucks: 5	i9.3	57.8		51.5		49.9		58.4	Ļ	58.6
Heavy Trucks: 6	0.7	59.2		50.2		51.5		59.8	3	59.9
Vehicle Noise: 6	57.3	65.6		62.3		57.8		66.3	3	66.8
Centerline Distance to Noise (	Contour (in feel	)	70.0			10.4				10.4
		I day	70 d		65 0		6	i0 dBA		dBA
		Ldn:	19		4	2		90	1	93
	~	NFL:	21		4	~		96		207

	FHW	A-RD-77-108 H	IIGHW	AY NO	ISE PREDICI	ION MOD	EL		
Scenari	o: Interim Year	2021			Projec	t Name: B	edford Marke	place	
	e: El Cerrito Re				Job I	Number: 12	2751		
Road Segmer	nt: w/o Bedford	Cyn. Rd.							
	SPECIFIC IN	PUT DATA					ODEL INPU	TS	
Highway Data				Si	te Conditions	; (Hard = 1	0, Soft = 15)		
Average Daily	Traffic (Adt): 2	7,108 vehicles				A	utos: 15		
Peak Hour	Percentage:	10%			Medium T	ucks (2 Ax	des): 15		
Peak H	our Volume:	2,711 vehicles			Heavy Tru	icks (3+ Ax	des): 15		
Vel	hicle Speed:	40 mph		V	ehicle Mix				
Near/Far Lar	ne Distance:	36 feet			VehicleTyp	0 1	Day Evening	Nig	ht Daily
Site Data					venicieryp		7.5% 12.9%		6% 97.42%
				_	Medium		4.8% 4.9%		3% 1.84%
	rier Height:	0.0 feet			Heavy		4.0% 4.9% 6.5% 2.7%		3% 1.847 8% 0.749
Barrier Type (0-W	. ,	0.0			neavy	TUCKS. O	0.3% 2.75	o 10.	070 0.747
Centerline Dis		44.0 feet		N	oise Source E	levations	(in feet)		
Centerline Dist.		44.0 feet			Auto	os: 0.00	00		
Barrier Distance		0.0 feet			Medium Truci	ks: 2.29	97		
Observer Height (J	,	5.0 feet			Heavy Truci	ks: 8.00	6 Grade A	djustm	ent: 0.0
	d Elevation:	0.0 feet		_	,			<i>.</i>	
	d Elevation:	0.0 feet		Lá	ane Equivaler		, ,		
F	Road Grade:	0.0%			Auto				
	Left View:	-90.0 degree:	6		Medium Truci				
	Right View:	90.0 degrees	6		Heavy Truci	ks: 40.20	62		
FHWA Noise Mode	el Calculations	;							
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite Road	Fresne	Barrier A	Atten	Berm Atten
Autos:	66.51	2.89		1.28	-1.20	-	4.61 (	0.000	0.00
Medium Trucks:	77.72	-14.35		1.31	-1.20		4.87 (	0.000	0.00
Heavy Trucks:	82.99	-18.30		1.31	-1.20	-	5.50 (	0.000	0.00
Unmitigated Noise	e Levels (witho	out Topo and b	arrier	attenu	ation)				
VehicleType	Leq Peak Hour	r Leq Day	L	eq Eve	ning Leo	Night	Ldn		CNEL
Autos:	69.		7.6		65.8	59.8		3.4	69.
Medium Trucks:	63.	56	2.0		55.6	54.1	62	2.5	62.
Heavy Trucks:	64.	8 6	3.4		54.3	55.6	6	3.9	64.
Vehicle Noise:	71.	5 6	9.8		66.5	61.9	7	0.5	70.
Centerline Distance	ce to Noise Co	ntour (in feet)							
				70 dE		dBA	60 dBA		55 dBA
			dn:	47		102	220		473
		CN		47 51		102	235		4/5

	FHV	/A-RD-77-108 HI	GHWAY	NOISE PF	EDICTIO	N MÖDEL		
	o: Interim Yea e: El Cerrito R nt: e/o Bedford	d.				ame: Bedi nber: 1275	ord Marketpla	ace
SITE S	SPECIFIC IN	PUT DATA					EL INPUTS	;
Highway Data				Site Con	ditions (H	lard = 10,	Soft = 15)	
Average Daily	Traffic (Adt): 2	8,244 vehicles				Auto		
	Percentage:	10%				ks (2 Axles	,	
	our Volume:	2,824 vehicles		Hei	avy Trucks	s (3+ Axles	s): 15	
	nicle Speed:	40 mph		Vehicle I	Nix			
Near/Far Lar	e Distance:	36 feet		Vehi	cleType	Day	Evening	Night Daily
Site Data					Au	tos: 77.5	% 12.9%	9.6% 97.42%
Bar	rier Height:	0.0 feet		Me	edium True	cks: 84.8	% 4.9%	10.3% 1.84%
Barrier Type (0-Wa	•	0.0		ŀ	leavy Tru	cks: 86.5	% 2.7%	10.8% 0.74%
Centerline Dis	t. to Barrier:	44.0 feet		Noise Sc	urce Elev	ations (in	feet)	
Centerline Dist. t	o Observer:	44.0 feet			Autos:	0.000	,	
Barrier Distance t	o Observer:	0.0 feet		Mediu	n Trucks:	2.297		
Observer Height (/	Above Pad):	5.0 feet			v Trucks:	8.006	Grade Adiu	istment: 0.0
	d Elevation:	0.0 feet					,	
	d Elevation:	0.0 feet		Lane Eq		)istance (i	n feet)	
F	Road Grade:	0.0%			Autos:	40.460		
	Left View:	-90.0 degrees			n Trucks:	40.241		
	Right View:	90.0 degrees		Heav	y Trucks:	40.262		
FHWA Noise Mode	el Calculation:	s						
VehicleType	REMEL	Traffic Flow	Distance	Finite		Fresnel	Barrier Atte	n Berm Atten
Autos:	66.51	3.07		28	-1.20	-4.6		
Medium Trucks:	77.72	-14.17		31	-1.20	-4.8		
Heavy Trucks:	82.99	-18.12	1.	31	-1.20	-5.5	0 0.00	0.00
Unmitigated Noise								
	Leq Peak Hou		,	Evening	Leq Ni	•	Ldn	CNEL
Autos:	69	•••		66.0		59.9	68.6	69.
Medium Trucks:	63			55.8		54.2	62.7	62.
Heavy Trucks:	65		.0	54.5		55.8	64.1	64.
Vehicle Noise:	71		.9	66.7		62.1	70.7	71.
Centerline Distance	e to Noise Co	ontour (in feet)		) dBA	6E -1	24	60 dBA	55 dBA
		1 a		49	65 dE 105		226	55 dBA 487
		La CNF		49 52	105		226	487

	FH\	NA-RD-77-108	HIGHV	VAY NC	ISE PRED	ICTION I	NODEL			
Road Nam	io: Interim Yea e: El Cerrito F nt: e/o I-15 SE	Rd.					e: Bedfor er: 12751	d Marketpla	ace	
SITE	SPECIFIC IN	NPUT DATA				NOIS	E MODE	L INPUTS	5	
Highway Data				S	ite Conditi	ons (Har	d = 10, So	oft = 15)		
Average Daily	Traffic (Adt):	18,329 vehicles	6				Autos:	15		
Peak Hour	Percentage:	10%			Mediun	n Trucks	(2 Axles):	15		
Peak H	our Volume:	1,833 vehicles	6		Heavy	Trucks (3	+ Axles):	15		
Vel	hicle Speed:	40 mph		V	ehicle Mix					
Near/Far Lar	ne Distance:	36 feet			Vehicle	Type	Dav	Evening	Night	Dailv
Site Data					Venieren	Autos		•	9.6%	
Bar	rier Height:	0.0 feet			Mediu	m Trucks	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-W		0.0			Heav	/y Trucks	: 86.5%	2.7%	10.8%	0.74%
Centerline Dis		44.0 feet				- 51	(l 6	4)		
Centerline Dist.	to Observer:	44.0 feet		N	oise Sourc			eet)		
Barrier Distance	to Observer:	0.0 feet				Autos:	0.000			
Observer Height ()	Above Pad);	5.0 feet			Medium Tr		2.297	Our de Adi		0.0
0,1	ad Elevation:	0.0 feet			Heavy Ti	'UCKS:	8.006	Grade Adji	ustment:	0.0
Roa	ad Elevation:	0.0 feet		Li	ane Equiva	lent Dis	tance (in	feet)		
,	Road Grade:	0.0%				Autos:	40.460			
	Left View:	-90.0 degree	s		Medium Tr	rucks:	40.241			
	Right View:	90.0 degree	es		Heavy Ti	rucks:	40.262			
FHWA Noise Mode	el Calculation	IS								
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite Roa	nd Fr	esnel	Barrier Atte	en Ben	m Atten
Autos:	66.51	1.19		1.28	-1	.20	-4.61	0.0	00	0.000
Medium Trucks:	77.72	-16.05		1.31	-1	.20	-4.87	0.0	00	0.000
Heavy Trucks:	82.99	-20.00		1.31	-1	.20	-5.50	0.0	00	0.000
Unmitigated Noise	e Levels (with	out Topo and	barrier	r attenu	ation)					
VehicleType	Leq Peak Hou	ur Leq Day		Leq Eve	ening	Leq Nigh	t i	Ldn		VEL
Autos:			65.9		64.1		58.1	66.7		67.3
Medium Trucks:			60.3		53.9		52.4	60.8		61.1
Heavy Trucks:	63	3.1	61.7		52.6	ļ	53.9	62.2		62.4
Vehicle Noise:	69	9.8	68.1		64.8		50.2	68.8		69.2
Centerline Distant	ce to Noise C	ontour (in feet	)		ġ.					
				70 dE	BA	65 dBA	6	60 dBA		dBA
			Ldn:	36		79		169	-	65
		CI	VEL:	39		84		181	3	90

Friday, November 22, 2019

Friday, November 22, 2019

	FHW	A-RD-77-108	HIGHWA	Y NC	DISE PR	EDICT	ION MOI	DEL			
	: Interim Year : El Cerrito Rd : e/o I-15 NB F						Name: I lumber:		d Marketpl	ace	
SITE S	PECIFIC INF	PUT DATA				Ν	NOISE N	10DE	L INPUT	s	
Highway Data				S	ite Con	ditions	(Hard =	10, So	oft = 15)		
Average Daily T Peak Hour P Peak Ho	ercentage:	0,909 vehicles 10% 1,091 vehicles					ucks (2 A cks (3+ A	/	15 15 15		
Vehi	icle Speed:	40 mph		V	ehicle N	<i>Ni</i> v					
Near/Far Lane	e Distance:	36 feet		-		cleType	<b>`</b>	Dav	Evening	Night	Daily
Site Data				-	10/11			77.5%	•	9.6%	
Borr	ier Height:	0.0 feet			Me	dium T	rucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wa	ll, 1-Berm):	0.0			H	leavy T	rucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist.		44.0 feet		N	oise So	urce E	levation	s (in fe	et)		
Centerline Dist. to		44.0 feet				Auto	s: 0.0	000			
Barrier Distance to		0.0 feet			Mediun	n Truck	s: 2.2	297			
Observer Height (A	,	5.0 feet			Heav	y Truck	s: 8.0	006	Grade Adj	iustment	: 0.0
	l Elevation:	0.0 feet			ano Equ	uivalon	t Distand	o (in	foot)		
	l Elevation: oad Grade:	0.0 feet 0.0%		L	ane Lyi	Auto			eel)		
R	l eft View:		_		Mediur						
	Right View:	-90.0 degree 90.0 degree				y Truck					
FHWA Noise Model	Calculations										
VehicleType	REMEL	Traffic Flow	Distanc	е	Finite	Road	Fresn	el	Barrier Att	en Be	rm Atten
Autos:	66.51	-1.06		1.28		-1.20		-4.61	0.0	000	0.000
Medium Trucks:	77.72	-18.30		1.31		-1.20		-4.87		000	0.000
Heavy Trucks:	82.99	-22.26		1.31		-1.20		-5.50	0.0	000	0.000
Unmitigated Noise			-							1	
	eq Peak Hour			y Eve	ening	Leq	Night		Ldn		NEL
Autos:	65.5		63.6		61.9		55.8		64.4		65.0
Medium Trucks:	59.5		58.0		51.7		50.1		58.6	-	58.8
Heavy Trucks: Vehicle Noise:	60.8		59.4 55.8		50.4 62.5		51.6 58.0		60.0 66.5	-	60.1 67.0
					o2.5		58.0		06.5	)	07.0
Centerline Distance	e to Noise Cor	nour (in feet)		70 dl	BA	65	dBA	6	0 dBA	55	dBA
		I	dn:	26	1	Ę	56	1	120	1	258
		CA	IEL:	28		6	50		128	2	276

	FHWA-	RD-77-108 HIG	HWAY N	IOISE PREDICT	ION MODEL		
Scenario: Ini Road Name: Ea Road Segment: e/	agle Glen Pk	wy.			t Name: Bedfe Number: 1275		ce
SITE SPEC	CIFIC INPU	IT DATA			NOISE MOD	EL INPUTS	
Highway Data			4	Site Conditions	; (Hard = 10, \$	Soft = 15)	
Average Daily Traffic Peak Hour Perce Peak Hour V Vehicle S	entage: olume: 2,0	161 vehicles 10% 186 vehicles 40 mph		Heavy Tru	Autos rucks (2 Axles, icks (3+ Axles,	): 15	
Near/Far Lane Dis	- p	36 feet	Ľ	Vehicle Mix			
				VehicleTyp	,	0	Night Daily
Site Data Barrier I	leight:	0.0 feet		Medium	Autos: 77.5 Trucks: 84.8		9.6% 97.42% 10.3% 1.84%
Barrier Type (0-Wall, 1-	Berm):	0.0		Heavy	rucks: 86.5	% 2.7%	10.8% 0.749
Centerline Dist. to I	Barrier:	14.0 feet	H	Noise Source E	levations (in	foot)	
Centerline Dist. to Ob	server:	14.0 feet	- F	Auto		leety	
Barrier Distance to Ob	server:	0.0 feet		Medium Truci			
Observer Height (Above	e Pad):	5.0 feet		Heavy Truci		Grada Adiu	stment: 0.0
Pad Ele	vation:	0.0 feet		neavy muci	s. 0.000	Grade Auju	sumern. 0.0
Road Ele	vation:	0.0 feet	1	Lane Equivaler	nt Distance (in	1 feet)	
Road	Grade:	0.0%		Auto	os: 40.460		
Lei	ft View: -9	0.0 degrees		Medium Truci	ks: 40.241		
Righ	t View:	90.0 degrees		Heavy Truck	ks: 40.262		
FHWA Noise Model Ca	culations						
VehicleType RE	MEL Tr	affic Flow D	listance	Finite Road	Fresnel	Barrier Atte	n Berm Atten
Autos:	66.51	1.75	1.2	8 -1.20	-4.6	1 0.00	0.00
Medium Trucks:	77.72	-15.48	1.3	1 -1.20	-4.87	7 0.00	0.00
Heavy Trucks:	82.99	-19.44	1.3	1 -1.20	-5.50	0.00	0.00
Unmitigated Noise Lev	els (without	Topo and bar	rier atten	uation)			
VehicleType Leq I	Peak Hour	Leq Day	Leg Ev	vening Leq	Night	Ldn	CNEL
Autos:	68.3	66.4	i.	64.7	58.6	67.2	67.
Medium Trucks:	62.3	60.8		54.5	52.9	61.4	61.
Heavy Trucks:	63.7	62.2	2	53.2	54.5	62.8	62.
Vehicle Noise:	70.4	68.6	;	65.3	60.8	69.3	69.
Centerline Distance to	Noise Conte	our (in feet)					
			70 0	dBA 65	dBA	60 dBA	55 dBA
		Ldn	: 4	0	86	185	398
			: 4		92	198	426

FHWA-RD-77-108 HI	GHWAY	NOISE PF	EDICTIO	N MODEL		
Scenario: Interim Year 2021					ord Marketpla	се
Road Name: Eagle Glen Pkwy.			Job Nur	nber: 1275	1	
Road Segment: e/o Bedford Cyn. Rd.						
SITE SPECIFIC INPUT DATA					EL INPUTS	
Highway Data		Site Con	ditions (H	lard = 10, 3	Soft = 15)	
Average Daily Traffic (Adt): 35,209 vehicles				Auto	s: 15	
Peak Hour Percentage: 10%				ks (2 Axles		
Peak Hour Volume: 3,521 vehicles		Hei	avy Truck	s (3+ Axles	): 15	
Vehicle Speed: 45 mph		Vehicle I	Nix			
Near/Far Lane Distance: 76 feet		Veh	cleType	Day	Evening	Night Daily
Site Data				tos: 77.5	•	9.6% 97.42%
Barrier Height: 0.0 feet		Me	dium Tru	cks: 84.8	% 4.9%	10.3% 1.84%
Barrier Type (0-Wall, 1-Berm): 0.0		ŀ	leavy Tru	cks: 86.5	% 2.7%	10.8% 0.74%
Centerline Dist. to Barrier: 65.0 feet		Noise Sc	urce Fle	vations (in	feet)	
Centerline Dist. to Observer: 65.0 feet			Autos:		1000	
Barrier Distance to Observer: 0.0 feet		Modiu	n Trucks:			
Observer Height (Above Pad): 5.0 feet			y Trucks:	8.006	Grade Adiu	stment: 0.0
Pad Elevation: 0.0 feet						
Road Elevation: 0.0 feet		Lane Eq		Distance (i	n feet)	
Road Grade: 0.0%			Autos:	52.972		
Left View: -90.0 degrees			n Trucks:	52.804		
Right View: 90.0 degrees		Heav	y Trucks:	52.821		
FHWA Noise Model Calculations						
VehicleType REMEL Traffic Flow	Distance	Finite	Road	Fresnel	Barrier Atte	n Berm Atten
Autos: 68.46 3.52	-0.	48	-1.20	-4.7	0.00	0.00
Medium Trucks: 79.45 -13.72	-0.	46	-1.20	-4.8	8 0.00	0.00
Heavy Trucks: 84.25 -17.68	-0.	46	-1.20	-5.3	0.00	0.00
Unmitigated Noise Levels (without Topo and ba						
VehicleType Leq Peak Hour Leq Day		Evening	Leq N		Ldn	CNEL
Autos: 70.3 68.		66.6		60.6	69.2	69.8
Medium Trucks: 64.1 62.	-	56.2		54.7	63.1	63.3
Heavy Trucks: 64.9 63.	-	54.5		55.7	64.1	64.3
Vehicle Noise: 72.1 70.	4	67.2		62.6	71.1	71.
Centerline Distance to Noise Contour (in feet)		1				
		) dBA	65 dE		60 dBA	55 dBA
Ldi		77	166		358	771
CNE		83	178		384	827

	FHW	/A-RD-77-108	HIGHWA	Y NOISE F	REDICT	ON MODEL		
	io: Interim Yea						ford Marketpla	ace
	e: Cajalco Rd.				Job N	umber: 1278	51	
Road Segmer	nt: e/o I-15 SB	Ramps						
	SPECIFIC IN	PUT DATA					DEL INPUTS	6
Highway Data				Site Co	nditions	(Hard = 10,	Soft = 15)	
Average Daily	Traffic (Adt): 3	0,671 vehicle	s			Auto	s: 15	
Peak Hour	Percentage:	10%				icks (2 Axles		
Peak H	our Volume:	3,067 vehicle	s	Н	eavy Truc	cks (3+ Axles	s): 15	
	hicle Speed:	45 mph		Vehicle	Mix			
Near/Far Lai	ne Distance:	76 feet		Ve	hicleType	Day	Evening	Night Daily
Site Data						Autos: 77.5	5% 12.9%	9.6% 97.42%
Bai	rier Heiaht:	0.0 feet		٨	Aedium T	rucks: 84.8	3% 4.9%	10.3% 1.84%
Barrier Type (0-W		0.0			Heavy T	rucks: 86.5	5% 2.7%	10.8% 0.74%
Centerline Dis	st. to Barrier:	65.0 feet		Noise	Cource E	evations (in	(feet)	
Centerline Dist.	to Observer:	65.0 feet		110/36 0	Auto		1000	
Barrier Distance	to Observer:	0.0 feet		Modi	Im Truck			
Observer Height (	Above Pad):	5.0 feet			in Truck		Grade Adii	ustment: 0.0
Pa	ad Elevation:	0.0 feet						
Roa	ad Elevation:	0.0 feet		Lane E	quivalen	t Distance (i	n feet)	
I	Road Grade:	0.0%			Auto			
	Left View:	-90.0 degree	es		um Truck			
	Right View:	90.0 degre	es	Hea	wy Truck	s: 52.821		
FHWA Noise Mod	el Calculations	;						
VehicleType	REMEL	Traffic Flow	Distan	e Finit	e Road	Fresnel	Barrier Atte	en Berm Atten
Autos:	68.46	2.92		0.48	-1.20	-4.7	0.0	00 0.000
Medium Trucks:	79.45	-14.32		0.46	-1.20	-4.8	8 0.0	00 0.000
Heavy Trucks:	84.25	-18.28		0.46	-1.20	-5.3	0 0.0	00 0.000
Unmitigated Noise								
VehicleType	Leq Peak Hou			q Evening		Night	Ldn	CNEL
	69	7	67.8	66.	-	60.0	68.6	
Autos:							62.5	62.7
Medium Trucks:	63.	-	62.0	55.	-	54.1		
Medium Trucks: Heavy Trucks:	63. 64.	3	62.9	53.	9	55.1	63.5	63.6
Medium Trucks:	63.	3			9			63.6
Medium Trucks: Heavy Trucks:	63. 64. 71.	3 5	62.9 69.8	53. 66.	3	55.1 62.0	63.5 70.5	63.6
Medium Trucks: Heavy Trucks: Vehicle Noise:	63. 64. 71.	3 5 ntour (in feet	62.9 69.8	53.5 66.0 70 dBA	65	55.1 62.0	63.5 70.5 60 dBA	63.6 71.0 55 dBA
Medium Trucks: Heavy Trucks: Vehicle Noise:	63. 64. 71.	3 5 ntour (in feet	62.9 69.8	53. 66.	65 1	55.1 62.0	63.5 70.5	63.6

Friday, November 22, 2019

Friday, November 22, 2019

	FHW	A-RD-77-108	HIGHV	VAY NO	OISE PF	REDICTI		EL			
	<ul> <li>D: Interim Year</li> <li>e: Cajalco Rd.</li> <li>t: e/o I-15 NB</li> </ul>						Name: E umber: 1		Marketpla	ce	
SITE S	SPECIFIC IN	PUT DATA				Ν	IOISE M	ODEL	INPUTS		
Highway Data				S	Site Con	ditions	(Hard = 1	10, Soft	= 15)		
Average Daily T Peak Hour F Peak Ho	Percentage:	5,178 vehicle 10% 3,518 vehicle					A Jcks (2 A cks (3+ A		15 15 15		
Veh	icle Speed:	45 mph	-	L				,			
Near/Far Lan		76 feet		v	Vehicle I Veh	<b>Mix</b> icleType	. 1	Dav E	vening	Night	Dailv
Site Data								7.5%	12.9%	9.6%	97.42%
Barrier Type (0-Wa	rier Height: all, 1-Berm):	0.0 feet 0.0				edium Ti Heavy Ti		34.8% 36.5%	4.9% 2.7%	10.3% 10.8%	1.84% 0.74%
Centerline Dis	t. to Barrier:	65.0 feet			laina Cr		levations	(in feet	41		
Centerline Dist. to Barrier Distance to Observer Height (A	o Observer:	65.0 feet 0.0 feet 5.0 feet		<u>n</u>	Mediui	Auto m Truck	s: 0.0 s: 2.2	00 97	y rade Adju	stment:	0.0
	d Elevation:	0.0 feet									
	d Elevation:	0.0 feet		L	ane Eq		t Distanc		et)		
R	Road Grade:	0.0%				Auto	0. 02.0				
	Left View: Right View:	-90.0 degre 90.0 degre				m Truck ry Truck					
FHWA Noise Mode	l Calculations	i									
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresne	el Ba	arrier Atte	n Ber	m Atten
Autos:	68.46	3.51		-0.48		-1.20	-	4.70	0.00	0	0.000
Medium Trucks:	79.45	-13.73		-0.46		-1.20		4.88	0.00	-	0.000
Heavy Trucks:	84.25	-17.68		-0.46		-1.20	-	5.30	0.00	0	0.000
Unmitigated Noise											
	Leq Peak Hou			Leq Ev		Leq	Night	L	dn	CI	VEL
Autos:	70.		68.4		66.6		60.6		69.2		69.8
Medium Trucks:	64.		62.6		56.2		54.6		63.1		63.3
Heavy Trucks: Vehicle Noise:	64. 72	-	63.5 70.4		54.5 67.2		55.7 62.6		64.1 71.1		64.2 71.6
Centerline Distanc		•			07.2		02.0		71.1		71.0
Centernile Distanc	e to moise co	mour (III leel	,	70 d	BA	65	dBA	60	dBA	55	dBA
			Ldn:	77	,	1	66	3	58	7	70
		C	NEL:	83	3	1	78	3	83	8	26

	FHW	A-RD-77-108	HIGH	WAY NO	ISE PREDI	CTION	MODEL					
Scenario: Int Road Name: Ca Road Segment: e/c	jalco Rd.				Project Name: Bedford Marketplace Job Number: 12751							
SITE SPEC	IFIC IN	PUT DATA				NOIS	E MODE		s			
Highway Data				Si	te Conditio							
Average Daily Traffic	(Adt): 2	1,465 vehicles	5				Autos	15				
Peak Hour Perce	ntage:	10%			Medium	Trucks	(2 Axles)	15				
Peak Hour Ve	olume:	2,147 vehicles	5		Heavy	rucks (	3+ Axles).	15				
Vehicle S	Speed:	45 mph		Ve	ehicle Mix							
Near/Far Lane Dis	tance:	76 feet		Ve	VehicleT	me	Dav	Evening	Night	Daily		
Site Data					10110101	Auto			9.6%			
	laimh4	0.0 feet			Mediur	1 Trucks	s: 84.8%	4.9%	10.3%	1.849		
Barrier H Barrier Type (0-Wall, 1-		0.0 teet 0.0				/ Trucks			10.8%			
Centerline Dist. to E		65.0 feet		_					-			
Centerline Dist. to Obs		65.0 feet		No	oise Source			eet)				
Barrier Distance to Ob		0.0 feet				utos:	0.000					
Observer Height (Above		5.0 feet			Medium Tri		2.297					
Pad Fle		0.0 feet			Heavy Tri	icks:	8.006	Grade Ad	ustment:	0.0		
Road Ele	vation:	0.0 feet		Lá	ne Equiva	ent Dis	tance (in	feet)				
Road	Grade:	0.0%			A	utos:	52.972					
Lef	t View:	-90.0 degree	s		Medium Tri	icks:	52.804					
Righ	t View:	90.0 degree	s		Heavy Tr	icks:	52.821					
FHWA Noise Model Cal	culations											
VehicleType RE	MEL	Traffic Flow	Dist	tance	Finite Roa	1 F	resnel	Barrier Att	en Ber	m Atter		
Autos:	68.46	1.37		-0.48	-1.3	20	-4.70	0.0	000	0.00		
Medium Trucks:	79.45	-15.87		-0.46	-1.		-4.88		000	0.00		
Heavy Trucks:	84.25	-19.83		-0.46	-1.:	20	-5.30	0.0	000	0.00		
Unmitigated Noise Leve	els (witho	ut Topo and	barrie	r attenua	ation)							
,, ,	Peak Hour			Leq Eve	0	eq Nigh		Ldn		VEL		
Autos:	68.		56.2		64.5		58.4	67.0		67		
Medium Trucks:	61.	-	50.4		54.0		52.5	61.0		61		
Heavy Trucks:	62.	-	51.3		52.3		53.6	61.9		62		
Vehicle Noise:	70.		58.2		65.1		60.4	69.0	)	69		
Centerline Distance to	Voise Co	ntour (in feet,	)									
			L	70 dE	8A	65 dBA		60 dBA		dBA		
			Ldn:	55 59		119		257		54		
			IFI :			128		276		94		

FHWA-RD-77-108 F	IGHWA	Y NOISE P	REDICTIO	N MODEL			
<i>Scenario:</i> Interim Year 2021 <i>Road Name:</i> Cajalco Rd. <i>Road Segment:</i> e/o Temescal Cyn. Rd.				ame: Bedf nber: 1275	ord Marketpla	ace	
SITE SPECIFIC INPUT DATA					EL INPUTS	5	
Highway Data		Site Co	nditions (H	ard = 10, :	Soft = 15)		
Average Daily Traffic (Adt): 22,844 vehicles				Auto	s: 15		
Peak Hour Percentage: 10%		М	edium Trucl	ks (2 Axles	): 15		
Peak Hour Volume: 2,284 vehicles		Н	eavy Trucks	(3+ Axles	): 15		
Vehicle Speed: 45 mph		Vehicle	Mix				
Near/Far Lane Distance: 76 feet		Ve	hicleType	Day	Evening	Night	Daily
Site Data			Au	tos: 77.5	% 12.9%	9.6%	97.42%
Barrier Height: 0.0 feet		٨	ledium Truc	ks: 84.8	% 4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0			Heavy Truc	ks: 86.5	% 2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 65.0 feet		Noise	ource Elev	ations (in	foot)		
Centerline Dist. to Observer: 65.0 feet		110/30 0	Autos:	0.000	1001)		
Barrier Distance to Observer: 0.0 feet		Medi	im Trucks:	2.297			
Observer Height (Above Pad): 5.0 feet			vv Trucks:	8.006	Grade Adj	ustment:	0.0
Pad Elevation: 0.0 feet					,		
Road Elevation: 0.0 feet		Lane E	quivalent D		n feet)		
Road Grade: 0.0%		14-16	Autos: Im Trucks:	52.972 52.804			
Left View: -90.0 degrees				52.804			
Right View: 90.0 degrees		пеа	vy Trucks:	52.021			
FHWA Noise Model Calculations		1					
VehicleType REMEL Traffic Flow	Distanc		e Road	Fresnel	Barrier Atte		n Atten
Autos: 68.46 1.64		0.48	-1.20	-4.7			0.000
Medium Trucks: 79.45 -15.60		0.46 0.46	-1.20 -1.20	-4.8 -5.3			0.000
Heavy Trucks: 84.25 -19.56				-0.3	0 0.0	00	0.000
Unmitigated Noise Levels (without Topo and b VehicleType Leg Peak Hour Leg Day		tenuation) TEvening	Leg Ni	aht	l dn	<u></u>	IEL
	5.5	4 Evening 64.8		58.7	67.3		67.9
	).7	54.3		52.8	61.2		61.5
	1.6	52.0	-	53.8	62.2		62.3
	3.5	65.4	-	60.7	69.2		69.7
Centerline Distance to Noise Contour (in feet)							
		70 dBA	65 dE	A	60 dBA	55 0	dBA
					0.00		78
L	dn:	58	124		268	5/	18

	FHW	A-RD-77-108	HIGH	NAY N	OISE PI	REDICTI		EL	_	_	_
Road Nam	io: Interim Yea ne: Masters Dr. nt: n/o Californi		oject				Name: E ımber: 1		d Marketpl	ace	
SITE	SPECIFIC IN	PUT DATA				N	OISE M	ODE		S	
Highway Data				5	Site Con	ditions	Hard =	10, So	ft = 15)		
Average Daily	Traffic (Adt):	5.069 vehicles	3				A	utos:	15		
Peak Hour	Percentage:	10%			Me	dium Tru	cks (2 A	xles):	15		
Peak H	lour Volume:	507 vehicles	6		He	avy Truc	ks (3+ A	xles):	15		
Ve	hicle Speed:	40 mph			Vehicle		-	-			
Near/Far La	ne Distance:	14 feet		-		icleType		Day	Evening	Night	Daily
Site Data					ven			7.5%	12.9%		97.42%
						edium Tr		34.8%		9.0%	
	rrier Height:	0.0 feet				Heavy Tr		36.5%		10.3%	
Barrier Type (0-W		0.0								10.070	0.7470
Centerline Dis		34.0 feet		1	Voise Se	ource Ele	evations	(in fe	et)		
Centerline Dist.		34.0 feet				Autos	: 0.0	00			
Barrier Distance		0.0 feet			Mediu	m Trucks	: 2.2	97			
Observer Height (	,	5.0 feet			Heav	y Trucks	: 8.0	06	Grade Adj	ustment	: 0.0
	ad Elevation: ad Elevation:	0.0 feet 0.0 feet			ano Eo	uivalent	Distanc	o (in f	ioot)		
	Road Grade:	0.0%		- F	Lane Ly	Autos			001/		
	Left View:	-90.0 degree			Modiu	m Trucks					
	Right View:	90.0 degree				/v Trucks					
	Ngni view.	50.0 degree	50		near	ly mucha	. 00.4	07			
FHWA Noise Mod	el Calculations	5									
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresne	e/	Barrier Atte	en Ber	m Atten
Autos:	66.51	-4.39		2.48	3	-1.20	-	4.53	0.0	00	0.000
Medium Trucks:	77.72	-21.63		2.53	3	-1.20	-	4.86	0.0	00	0.000
Heavy Trucks:	82.99	-25.58		2.52	2	-1.20	-	5.67	0.0	00	0.000
Unmitigated Noise	e Levels (witho	out Topo and	barrie	r atten	uation)						
VehicleType	Leq Peak Hou	r Leq Day	·	Leq Ev	/ening	Leq I	Vight		Ldn		NEL
Autos:	63.	-	61.5		59.7		53.7		62.3		62.9
Medium Trucks:	57.		55.9		49.5		48.0		56.5		56.7
Heavy Trucks:	58.		57.3		48.3		49.5		57.9		58.0
Vehicle Noise:	65.	4	63.7		60.4		55.9		64.4	ļ	64.8
Centerline Distan	ce to Noise Co	ntour (in feet,	)								
				70 c		65 0		6	0 dBA		dBA
			Ldn:	14		3			67		44
		CI	VEL:	1	5	3	3		72	1	54

Friday, November 22, 2019

Friday, November 22, 2019

	FHW	/A-RD-77-108	HIGH	IWAY N	IOISE PF	REDICTI	ON MOD	DEL			
Road Nam	o: Interim Yea e: Masters Dr. nt: s/o Californi		oject				Name: E umber: 1		d Marketpl	ace	
SITE	SPECIFIC IN	PUT DATA							L INPUTS	S	
Highway Data					Site Con	ditions	(Hard =	10, So	oft = 15)		
	Percentage:	0,153 vehicle 10% 1.015 vehicle					/ Icks (2 A Iks (3+ A	/	15 15 15		
	hicle Speed:	40 mph	5				A3 (0+ A	xics).	10		
Near/Far Lar		14 feet		-	Vehicle I Veh	<b>Mix</b> icleType		Dav	Evening	Night	Daily
Site Data								77.5%	•	9.6%	
Bar Barrier Type (0-Wa	r <b>ier Height:</b> all, 1-Berm):	0.0 feet 0.0				edium Ti Heavy Ti		84.8% 86.5%		10.3% 10.8%	
Centerline Dis	t. to Barrier:	34.0 feet		F	Noise Sr	urce El	evations	in fe	of)		
	to Observer: Above Pad): ad Elevation:	34.0 feet 0.0 feet 5.0 feet 0.0 feet			Mediui Heav	Auto: m Truck: ry Truck:	s: 0.0 s: 2.2 s: 8.0	100 197 106	, Grade Adj	ustment	: 0.0
	d Elevation:	0.0 feet		-	Lane Eq		Distanc		eet)		
F	Road Grade: Left View: Right View:	0.0% -90.0 degree 90.0 degree				Auto: m Truck: y Truck:	s: 33.3	881			
FHWA Noise Mode	el Calculations	5		1							
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresn	el .	Barrier Atte	en Bei	m Atten
Autos:	66.51	-1.37		2.4	8	-1.20		4.53	0.0	000	0.000
Medium Trucks:	77.72	-18.61		2.5	3	-1.20		-4.86	0.0	000	0.000
Heavy Trucks:	82.99	-22.57		2.5	2	-1.20		-5.67	0.0	000	0.000
Unmitigated Noise	e Levels (with	out Topo and	barrie	er atter	uation)						
VehicleType	Leq Peak Hou			Leq E	vening	Leq	Night		Ldn	-	NEL
Autos:	66.	4	64.5		62.8		56.7		65.3	3	65.9
Medium Trucks:	60.	4	58.9		52.6		51.0		59.5	5	59.7
Heavy Trucks:	61.	8	60.3		51.3		52.5		60.9	)	61.0
Vehicle Noise:	68.		66.7		63.4		58.9		67.4	1	67.9
Centerline Distance	e to Noise Co	ntour (in feet	)	70	10.4	05	-10.4		0.00		-10.4
			Ldn:		dBA		dBA	6	0 dBA		dBA
			Lan: NFL :	_	3 4		9 3		106 114		29 245
		CI	VCL.	2	4	5	0		114	2	:40

		/A-RD-77-108									
	o: Interim Yea		oject				Name: B		Marketpl	ace	
	e: Masters Dr.					Job N	lumber: 1	2751			
Road Segmer	t: n/o Bennet	Av.									
	SPECIFIC IN	PUT DATA					IOISE M			5	
Highway Data				S	ite Cond	ditions	(Hard = 1	0, So	,		
Average Daily	Traffic (Adt):	7,784 vehicles	s				A	utos:	15		
Peak Hour	Percentage:	10%			Mea	lium Tr	ucks (2 Ax	(les):	15		
Peak H	our Volume:	778 vehicles	s		Hea	vy Tru	cks (3+ Ax	des):	15		
Vel	nicle Speed:	40 mph		V	ehicle N	liv					
Near/Far Lar	ne Distance:	14 feet				leType	\ r	Dav	Evening	Night	Daily
Site Data					veni			7.5%	12.9%	9.6%	
					Ma	dium T		4.8%	4.9%	10.3%	1.849
	rier Height:	0.0 feet						4.0% 6.5%	2.7%	10.3%	0.749
Barrier Type (0-Wa	. ,	0.0			н	eavy T	rucks: 8	0.5%	2.7%	10.8%	0.74%
Centerline Dis		34.0 feet		N	oise So	urce E	levations	(in fe	et)		
Centerline Dist. t		34.0 feet				Auto	s: 0.00	00			
Barrier Distance t	o Observer:	0.0 feet			Mediun	n Truck	s: 2.29	97			
Observer Height (/	Above Pad):	5.0 feet				/ Truck			Grade Adj	ustment.	0.0
Pa	d Elevation:	0.0 feet									
Roa	d Elevation:	0.0 feet		L	ane Equ	iivalen	t Distance	e (in fe	eet)		
F	Road Grade:	0.0%				Auto	s: 33.64	45			
	Left View:	-90.0 degree	es		Mediun	n Truck	s: 33.3	81			
	Right View:	90.0 degree	es		Heavy	/ Truck	s: 33.40	07			
FHWA Noise Mode	el Calculation:	5									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite I	Road	Fresne	l E	Barrier Atte	en Ber	m Atten
Autos:	66.51	-2.53		2.48		-1.20	-	4.53	0.0	00	0.00
Medium Trucks:	77.72	-19.77		2.53		-1.20		4.86	0.0	00	0.00
Heavy Trucks:	82.99	-23.72		2.52		-1.20	-	5.67	0.0	00	0.00
Unmitigated Noise	Levels (with	out Topo and	barri	er attenu	ation)						
VehicleType	Leq Peak Hou	r Leq Day	r	Leq Eve	ening	Leq	Night		Ldn	CI	NEL
Autos:	65.	.3	63.4		61.6		55.5	_	64.2		64.
Medium Trucks:	59.	.3	57.8		51.4		49.9		58.3		58.
Heavy Trucks:	60.	.6	59.2		50.1		51.4		59.7		59.
Vehicle Noise:	67.	.3	65.6		62.3		57.7		66.3		66.
Centerline Distand	e to Noise Co	ontour (in feet	)								
				70 dł			dBA	60	) dBA		dBA
			Ldn:	19		4	11		89	1	92
			VFI :								

	FHW	/A-RD-77-108	HIGHW	AY N	OISE PR	EDICTIO	N MOD	EL			
	o: Interim Yea e: Masters Dr. nt: n/o Eagle G		roject			Project N Job Nur			d Marketpla	ace	
	SPECIFIC IN	PUT DATA								S	
Highway Data				s	Site Con	ditions (H	lard = 1	10, So	ft = 15)		
Average Daily	• •	7,346 vehicle	s					utos:	15		
Peak Hour I	0	10%				lium Truc			15		
	our Volume:	735 vehicle	s		Hea	avy Trucks	s (3+ A	kles):	15		
	nicle Speed:	40 mph		V	/ehicle I	<i>lix</i>					
Near/Far Lar	e Distance:	14 feet			Vehi	cleType	1	Dav	Evening	Night	Dailv
Site Data							tos: 7	7.5%	12.9%	9.6%	97.42%
Par	rier Height:	0.0 feet			Me	dium True	cks: 8	34.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wa	all, 1-Berm):	0.0			ŀ	leavy Tru	cks: 8	86.5%	2.7%	10.8%	0.74%
Centerline Dis		34.0 feet		٨	loise So	urce Elev	ations	(in fe	et)		
Centerline Dist. t		34.0 feet				Autos:	0.0	00			
Barrier Distance t		0.0 feet			Mediur	n Trucks:	2.2	97			
Observer Height (/	,	5.0 feet			Heav	V Trucks:	8.0	06	Grade Adj	ustment	: 0.0
	d Elevation:	0.0 feet		_							
	d Elevation:	0.0 feet		L	ane Equ	ivalent D			eet)		
F	Road Grade:	0.0%				Autos:	33.6				
	Left View: Right View:	-90.0 degre 90.0 degre				n Trucks: y Trucks:	33.3 33.4				
FHWA Noise Mode	Calculation:										
VehicleType	REMEL	, Traffic Flow	Dista	nce	Finite	Road	Fresne	e/ I	Barrier Atte	en Ber	rm Atten
Autos:	66.51	-2.78		2.48	3	-1.20	-	4.53	0.0	00	0.000
Medium Trucks:	77.72	-20.02		2.53	3	-1.20	-	4.86	0.0	00	0.000
Heavy Trucks:	82.99	-23.97		2.52	2	-1.20	-	5.67	0.0	00	0.000
Unmitigated Noise	Levels (with			attenı	uation)						
VehicleType	Leq Peak Hou	r Leq Da	/ L	.eq Ev	ening	Leq Ni	ght		Ldn	C	NEL
Autos:	65	0	63.1		61.3		55.3		63.9	)	64.5
	59	0	57.5		51.2		49.6		58.1		58.3
Medium Trucks:			58.9		49.9		51.1		59.5	5	59.6
Medium Trucks: Heavy Trucks:	60	3					67.6		00.0		66.5
Heavy Trucks: Vehicle Noise:	67	.0	65.3		62.0		57.5		66.0	)	00.
Heavy Trucks:	67	.0									
Heavy Trucks: Vehicle Noise:	67	.0	t)	70 d	IBA	65 dE		6	0 dBA	55	i dBA
Heavy Trucks: Vehicle Noise:	67	0 ontour (in fee		70 d 18 20	IBA 3	65 dE 40 43		6		55	

	FHW/	A-RD-77-108 HI	GHWAY	NOISE PI	REDICTI	ON MODE	L		
Road Nam	io: Interim Year ne: Bedford Cyn. nt: s/o El Cerrito	Rd.	ct			Name: Be umber: 12	dford Marketpl 751	ace	
SITE	SPECIFIC INP	UT DATA			N	OISE MO	DEL INPUTS	s	
Highway Data				Site Cor	nditions	(Hard = 10	, Soft = 15)		
Peak Hour	Traffic (Adt): 10 Percentage: lour Volume: 1	,401 vehicles 10% .040 vehicles				Au Icks (2 Axle ks (3+ Axle	,		
	hicle Speed:			110	avy mu	NS (37 MAR	-3). 13		
	nicie Speeu. ne Distance:	40 mph		Vehicle	Mix				
ivear/r-ar La	ne Distance:	24 feet		Veh	icleType	Da	ay Evening	Night	Daily
Site Data					A	utos: 77	.5% 12.9%	9.6%	97.42%
Ba	rrier Height:	0.0 feet		M	edium Tr	ucks: 84	.8% 4.9%	10.3%	1.84%
Barrier Type (0-W	•	0.0			Heavy Tr	ucks: 86	.5% 2.7%	10.8%	0.74%
Centerline Di	st. to Barrier:	38.0 feet		Noise S	ource El	evations (	in foot)		
Centerline Dist.	to Observer:	38.0 feet		NUISE 3	Auto		-		
Barrier Distance	to Observer:	0.0 feet		Mar dia	m Trucks				
Observer Height (	Above Pad):	5.0 feet			m Trucks vy Trucks			untmont	0.0
Pi	ad Elevation:	0.0 feet		nea	vy mucks	s. 8.00t	Graue Auj	usuneni.	0.0
Roi	ad Elevation:	0.0 feet		Lane Eq	uivalent	Distance	(in feet)		
	Road Grade:	0.0%			Autos	s: 36.40	1		
	Left View:	-90.0 degrees		Mediu	m Trucks	36.15	7		
	Right View:	90.0 degrees		Hear	vy Trucks	36.18	1		
FHWA Noise Mod	el Calculations								
VehicleType	REMEL	Traffic Flow	Distance	Finite	Road	Fresnel	Barrier Atte	en Ber	m Atten
Autos:	66.51	-1.27	1.9	96	-1.20	-4.	57 0.0	00	0.000
Medium Trucks:	77.72	-18.51	2.0	01	-1.20	-4.	.87 0.0	00	0.000
Heavy Trucks:	82.99	-22.46	2.0	00	-1.20	-5.	59 0.0	00	0.000
Unmitigated Nois	e Levels (withou	ıt Topo and ba	rrier atte	nuation)					
VehicleType	Leq Peak Hour	Leq Day	Leq E	vening	Leq	Night	Ldn	CI	VEL
Autos:	66.0	64	.1	62.3		56.3	64.9	)	65.5
Medium Trucks:	60.0	58	.5	52.1		50.6	59.1		59.3
Heavy Trucks:	61.3	59	.9	50.9		52.1	60.5	5	60.6
Vehicle Noise:	68.0	66	.3	63.0		58.5	67.0	)	67.5
Centerline Distan	ce to Noise Con	tour (in feet)							
				dBA	65		60 dBA		dBA
		Ld		24	5	-	111	-	40
		CNE	L:	26	5	5	119	2	57

Friday, November 22, 2019

Friday, November 22, 2019

	FHV	VA-RD-77-108	HIGH	WAY NO	DISE PF	REDICTIO		EL						
Road Nam	Scenario: Interim Year 2021 Plus Project Road Name: Bedford Cyn. Rd. Road Segment: n/o Georgetown Dr.					Project Name: Bedford Marketplace Job Number: 12751								
	SPECIFIC IN	IPUT DATA			NOISE MODEL INPUTS									
Highway Data				S	ite Con	ditions (	Hard = 1	10, So	ft = 15)					
	Traffic (Adt): Percentage: our Volume:	9,790 vehicle 10% 979 vehicle				dium Truc avy Truck	cks (2 A	/	15 15 15					
Vei	hicle Speed:	40 mph			ehicle l									
Near/Far Lar	ne Distance:	24 feet		V		icleType		Dav	Evening	Night	Daily			
Site Data					Ven			7.5%	12.9%	9.6%				
		0.0 feet			Me	dium Tri		34.8%	4.9%	10.3%				
Barrier Type (0-W		0.0			ŀ	leavy Tru		36.5%	2.7%	10.8%	0.74%			
Centerline Dis		38.0 feet		Λ	loise Sc	ource Ele	vations	(in fe	et)		-			
Centerline Dist.		38.0 feet				Autos.	: 0.0	00	,		-			
Barrier Distance		0.0 feet			Mediur	n Trucks.	2.2	97						
Observer Height (	Above Pad): ad Elevation:	5.0 feet 0.0 feet			Heav	y Trucks.	8.0	06	Grade Adj	ustment	: 0.0			
	ad Elevation:	0.0 feet		1	ane Eq	uivalent	Distanc	e (in f	eet)					
	Road Grade:	0.0%				Autos			,					
	Left View:	-90.0 deare	00		Mediu	n Trucks								
	Right View:	90.0 degre			Heav	y Trucks.								
FHWA Noise Mode	el Calculation	s												
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fresne	el l	Barrier Att	en Bei	rm Atten			
Autos:	66.51	-1.53		1.96		-1.20	-	4.57	0.0	00	0.00			
Medium Trucks:	77.72	-18.77		2.01		-1.20	-	4.87	0.0	00	0.000			
Heavy Trucks:	82.99	-22.73		2.00		-1.20	-	5.59	0.0	00	0.000			
Unmitigated Noise	e Levels (with	out Topo and	barrie	r atteni	lation)									
VehicleType	Leq Peak Hou			Leq Ev	~	Leq N			Ldn	-	NEL			
Autos:	65		63.8		62.1		56.0		64.6		65.3			
Medium Trucks:	59		58.2		51.9		50.3		58.8		59.0			
Heavy Trucks:	61		59.7		50.6		51.9		60.2		60.3			
Vehicle Noise:	67		66.0		62.8		58.2		66.7	,	67.2			
Centerline Distant	ce to Noise Co	ontour (in feet	9	70 d	DA I	65 d	DA	6	0 dBA	55	dBA			
			Ldn:	23		50			107		231			
		C	NFI :	25		53			107		231			
		0		20		00	,		110	4				

	FHW	/A-RD-77-108	HIGH	IWAY NC	ISE PRE	DICT	ION MODEL								
Scenario	Scenario: Interim Year 2021 Plus Project						Project Name: Bedford Marketplace								
Road Name	e: Bedford Cyr	n. Rd.				Job N	lumber: 1275	51							
Road Segmen	t: n/o Eagle G	ilen Pkwy.													
	SPECIFIC IN	PUT DATA			NOISE MODEL INPUTS										
Highway Data				S	ite Cond	itions	(Hard = 10,	Soft = 15)							
Average Daily 7	Fraffic (Adt): 1	0,852 vehicle	s				Auto	is: 15							
Peak Hour F	Percentage:	10%			Medi	um Tr	ucks (2 Axles	s): 15							
Peak Ho	our Volume:	1,085 vehicle	s		Heav	y Tru	cks (3+ Axles	s): 15							
Veh	icle Speed:	40 mph		14	ehicle Mi	~									
Near/Far Lan	e Distance:	24 feet			Vehicl		e Dav	Evening	Night	Daily					
Site Data					Venici		Autos: 77.5	0		97.429					
					Mod		rucks: 84.8		10.3%	1.849					
	rier Height:	0.0 feet					rucks: 04.0		10.3%	0.749					
Barrier Type (0-Wa		0.0			110	avy i	100.c	2.170	10.070	0.747					
Centerline Dis		38.0 feet		N	Noise Source Elevations (in feet)										
Centerline Dist. te		38.0 feet				Auto	s: 0.000								
Barrier Distance to		0.0 feet			Medium	Truck	s: 2.297								
Observer Height (A	,	5.0 feet 0.0 feet			Heavy	Truck	s: 8.006	Grade Adj	ustment:	0.0					
Pa	-														
	d Elevation:	0.0 feet		La	ane Equi		t Distance (i	n teet)							
F	Road Grade:	0.0%				Auto									
	Left View:	-90.0 degre			Medium										
	Right View:	90.0 degre	es		Heavy	Iruck	s: 36.181								
FHWA Noise Mode	Calculation														
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite R	oad	Fresnel	Barrier Att	en Bern	n Atten					
Autos:	66.51	-1.08		1.96		-1.20	-4.5	7 0.0	00	0.00					
Medium Trucks:	77.72	-18.32		2.01		-1.20	-4.8		00	0.00					
Heavy Trucks:	82.99	-22.28		2.00		-1.20	-5.5	9 0.0	00	0.00					
Unmitigated Noise															
21	Leq Peak Hou			Leq Eve	•	Leq	Night	Ldn	CN						
Autos:	66.		64.3		62.5		56.5	65.1		65.					
Medium Trucks:	60.	-	58.7		52.3		50.8	59.2		59.					
Heavy Trucks:	61.	-	60.1		51.1		52.3	60.7		60.					
Vehicle Noise:	68	-	66.5		63.2		58.7	67.2	2	67.					
Centerline Distanc	e to Noise Co	ntour (in feet	)	70.3			10.4		==						
			L	70 dE	3A		dBA	60 dBA	55 c						
			Ldn:	25			53	115	24	7					
		-	NFI :	26			57	123	26						

	FHV	VA-RD-77-108	HIGH	WAY N	IOISE PR	EDICTIO	N MODE	L			
	<ul> <li>b: Interim Yea</li> <li>c: Temescal 0</li> <li>c: n/o Cajalco</li> </ul>	Cyn. Rd.	roject			Project N Job Nun			Marketpla	ace	
	PECIFIC IN	IPUT DATA							INPUTS	6	
Highway Data				1	Site Con	ditions (H		· ·	,		
Average Daily 7	. ,		es					tos:	15		
Peak Hour F		10%				dium Truck			15		
	our Volume:	1,723 vehicle	es		Hea	avy Trucks	s (3+ Axl	es):	15		
	icle Speed:	45 mph			Vehicle I	Nix					
Near/Far Lan	e Distance:	51 feet			Vehi	cleType	Da	ay	Evening	Night	Daily
Site Data						Au	tos: 77	.5%	12.9%	9.6%	97.42%
Bar	rier Height:	0.0 feet			Me	dium Truc	cks: 84	.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wa	•	0.0			ŀ	leavy Truc	cks: 86	5.5%	2.7%	10.8%	0.74%
Centerline Dis		53.0 feet		7	Noise So	urce Elev	ations (	in fe	et)		
Centerline Dist. to		53.0 feet				Autos:	0.00	0	,		
Barrier Distance te		0.0 feet			Mediur	n Trucks:	2.29	7			
Observer Height (A	,	5.0 feet			Heav	y Trucks:	8.00	6 (	Grade Adji	ustment:	0.0
	d Elevation:	0.0 feet		-							
	d Elevation:	0.0 feet		4	Lane Equ	uivalent D			eet)		
F	load Grade:	0.0%				Autos:	46.73				
	Left View: Right View:	-90.0 degre 90.0 degre				n Trucks: y Trucks:	46.54 46.55				
FHWA Noise Mode	Calculation	e									
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fresnel	E	Barrier Atte	en Ber	m Atten
Autos:	68.46	0.41		0.34	4	-1.20	-4	.66	0.0	00	0.000
Medium Trucks:	79.45	-16.83		0.36	6	-1.20	-4	.87	0.0	00	0.000
Heavy Trucks:	84.25	-20.78		0.36	6	-1.20	-5	.40	0.0	00	0.000
Unmitigated Noise											
,,	Leq Peak Hou		/	Leq E	•	Leq Ni			Ldn		VEL
Autos:	68		66.1		64.3		58.3		66.9		67.5
Medium Trucks:	61		60.3		53.9		52.4		60.8		61.1
Heavy Trucks:	62	-	61.2		52.2		53.4		61.8		61.9
Vehicle Noise:	69		68.1		65.0		60.3		68.8		69.3
Centerline Distanc	e to Noise Co	ontour (in fee	t)	70		65 dF		<i>C</i> <sup>2</sup>	) <i>d</i> D /	55	dD A
				70 c			6A		) dBA		dBA
		_	Ldn: NFL:	4		95 102			205 220		43 75

	FHV	VA-RD-77-108	HIGHWA	Y NOISE	PREDICTIO	N MODE	L					
	e: Temescal (		oject			lame: Be mber: 12	edford Marketp 751	lace				
	SPECIFIC IN	IPUT DATA		NOISE MODEL INPUTS								
Highway Data				Site Conditions (Hard = 10, Soft = 15)								
Average Daily	Traffic (Adt):	24,091 vehicle	6			AL	itos: 15					
Peak Hour	Percentage:	10%		Λ	Aedium Truc	ks (2 Axi	les): 15					
Peak H	our Volume:	2,409 vehicles	6	1	Heavy Truck	s (3+ Ax	les): 15					
Vel	hicle Speed:	45 mph		Vehic	e Mix							
Near/Far Lar	ne Distance:	51 feet			ehicleType	D	ay Evening	Night	Daily			
Site Data				-			7.5% 12.9%	9.6%				
Pa	rier Height:	0.0 feet			Medium Tru	cks: 84	1.8% 4.9%	10.3%	1.84%			
Barrier Type (0-W	•	0.0			Heavy Tru	cks: 86	6.5% 2.7%	10.8%	0.74%			
Centerline Dis		53.0 feet										
Centerline Dist.		53.0 feet		Noise	Source Ele		, ,					
Barrier Distance	to Observer:	0.0 feet			Autos:							
Observer Height ()	Above Pad):	5.0 feet			lium Trucks:				0.0			
	d Elevation:	0.0 feet		He	avy Trucks:	8.00	6 Grade Ad	justment:	0.0			
Roa	d Elevation:	0.0 feet		Lane I	Equivalent L	Distance	(in feet)					
F	Road Grade:	0.0%			Autos:	46.73	1					
	Left View:	-90.0 degree	es	Med	lium Trucks:	46.54	1					
	Right View:	90.0 degree	es	He	avy Trucks:	46.55	9					
FHWA Noise Mode	el Calculation	s										
VehicleType	REMEL	Traffic Flow	Distand	e Fini	ite Road	Fresnel	Barrier Att	en Ber	m Atten			
Autos:	68.46	1.87		0.34	-1.20	-4	.66 0.0	000	0.000			
Medium Trucks:	79.45	-15.37		0.36	-1.20	-4	.87 0.0	000	0.000			
Heavy Trucks:	84.25	-19.33		0.36	-1.20	-5	.40 0.0	000	0.000			
Unmitigated Noise	e Levels (with	out Topo and	barrier at	tenuation	ı)							
VehicleType	Leq Peak Hou	ur Leq Day	Le	q Evening	Leq N	ight	Ldn	CI	VEL			
Autos:	69	0.5	67.6	65	.8	59.7	68.4	4	69.0			
Medium Trucks:	63		61.7	55		53.8	62.3		62.5			
Heavy Trucks:	64		62.7	53	.6	54.9	63.		63.4			
Vehicle Noise:	71	.3	69.6	66	.4	61.7	70.	3	70.7			
Centerline Distant	e to Noise Co	ontour (in feet			_							
				70 dBA	65 dE		60 dBA		dBA			
			Ldn:	55	119		257		53			
		CI	VEL:	59	128	3	275	5	93			

Friday, November 22, 2019

Friday, November 22, 2019

	FHW	A-RD-77-108	HIGHW	AY N	DISE PF	REDICT		DEL							
Road Name	Scenario: Interim Year 2021 Plus Project Road Name: California Av. Road Segment: w/o Masters Dr.						Project Name: Bedford Marketplace Job Number: 12751								
SITE S	SPECIFIC IN	PUT DATA			NOISE MODEL INPUTS										
Highway Data				S	ite Cor	nditions	(Hard =	10, So	ft = 15)						
Average Daily 1	raffic (Adt):	5,954 vehicle	s				,	Autos:	15						
Peak Hour F	Percentage:	10%			Me	dium Tr	ucks (2 A	xles):	15						
Peak Ho	our Volume:	595 vehicle	s		He	avy Tru	cks (3+ A	xles):	15						
Veh	icle Speed:	40 mph		N.	ehicle	Mix									
Near/Far Lan	e Distance:	14 feet		-		icleType	a	Dav	Evening	Night	Dailv				
Site Data					1011			77.5%	12.9%	9.6%					
	rier Heiaht:	0.0 feet			М	edium T		84.8%	4.9%	10.3%					
Barrier Type (0-Wa		0.0 teet 0.0						86.5%		10.8%					
Centerline Dis	t. to Barrier:	34.0 feet			loise Si	ource F	levation	: (in fe	et)		-				
Centerline Dist. t	o Observer:	34.0 feet		-	0.00 0	Auto		000	01/						
Barrier Distance t	o Observer:	0.0 feet			Mediu	m Truck									
Observer Height (A	Above Pad):	5.0 feet				/y Truck			Grade Adj	ustment	0.0				
Pa	d Elevation:	0.0 feet													
	d Elevation:	0.0 feet		L	ane Eq		t Distand		eet)						
F	Road Grade:	0.0%				Auto									
	Left View:	-90.0 degre	es			m Truck									
	Right View:	90.0 degre	es		Heav	/y Truck	(s: 33.4	107							
FHWA Noise Mode	l Calculations	i									-				
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresn	el E	Barrier Att	en Bei	rm Atten				
Autos:	66.51	-3.69		2.48		-1.20		-4.53		000	0.000				
Medium Trucks:	77.72	-20.93		2.53		-1.20		-4.86		000	0.000				
Heavy Trucks:	82.99	-24.89		2.52		-1.20		-5.67	0.0	000	0.000				
Unmitigated Noise															
,1	Leq Peak Hou			eq Ev			Night		Ldn		NEL				
Autos:	64.	-	62.2		60.4		54.4		63.0		63.6				
Medium Trucks:	58.	-	56.6		50.2		48.7		57.2	-	57.4				
Heavy Trucks:	59.		58.0		49.0		50.2		58.6		58.7				
Vehicle Noise:	66.	-	64.4		61.1		56.6		65.1		65.5				
Centerline Distance	e to Noise Co	ntour (in feet	)	70 d	DA.	e <sup>e</sup>	dBA	-	0 dBA	FF	dBA				
			I dn:	16			ивн 35	0	74		160				
			VFL:	10			30 37		74 80		160				
		0	¥66.	17			51		00		112				

	FHW	A-RD-77-108 I	IIGHW	AY NO			L						
Road Name	o: Interim Year e: California A t: e/o Masters		ject		Project Name: Bedford Marketplace Job Number: 12751								
SITE S	SPECIFIC IN	PUT DATA			NOISE MODEL INPUTS								
Highway Data				Si	Site Conditions (Hard = 10, Soft = 15)								
Average Daily T Peak Hour I Peak Ho	, ,	7,917 vehicles 10% 792 vehicles				Au ucks (2 Axle cks (3+ Axle	es): 15						
Veh	icle Speed:	40 mph		Ve	hicle Mix								
Near/Far Lan	e Distance:	14 feet			VehicleType	e Da	y Evening	Night Daily					
Site Data							.5% 12.9%	9.6% 97.42%					
	rier Height:	0.0 feet		_	Medium T		.8% 4.9%	10.3% 1.84%					
Barrier Type (0-Wa		0.0 reet 0.0			Heavy T	rucks: 86	.5% 2.7%	10.8% 0.749					
Centerline Dis	. ,	34.0 feet		_									
Centerline Dist. t		34.0 feet		No	Noise Source Elevations (in feet)								
Barrier Distance t		0.0 feet			Auto								
Observer Height (A		5.0 feet			Medium Truck								
0 1	d Elevation:	0.0 feet			Heavy Truck	s: 8.006	Grade Ad	ljustment: 0.0					
	d Elevation: d Elevation:	0.0 feet		La	ne Equivalen	t Distance	(in feet)						
	Road Grade:	0.0%		-	Auto		,						
	Left View:	-90.0 degree			Medium Truck								
	Right View:	90.0 degree			Heavy Truck								
FHWA Noise Mode	a Calculations												
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite Road	Fresnel	Barrier Att	ten Berm Atten					
Autos:	66.51	-2.45		2.48	-1.20	-4.	53 0.0	000 0.00					
Medium Trucks:	77.72	-19.69		2.53	-1.20	-4.	86 0.0	0.00 0.00					
Heavy Trucks:	82.99	-23.65		2.52	-1.20	-5.	67 0.0	000 0.00					
Unmitigated Noise	Levels (witho	ut Topo and L	arrier	attenua	tion)								
VehicleType	Leq Peak Hou	Leq Day	L	eq Eve	ning Leq	Night	Ldn	CNEL					
Autos:	65.	3 6	3.4		61.7	55.6	64.3	2 64.					
Medium Trucks:	59.	4 5	7.8		51.5	49.9	58.4	4 58.					
Heavy Trucks:	60.	7 5	9.2		50.2	51.5	59.	8 59.					
Vehicle Noise:	67.	4 6	5.6		62.3	57.8	66.	3 66.					
Centerline Distanc	e to Noise Co	ntour (in feet)											
				70 dB	A 65	dBA	60 dBA	55 dBA					
		1	dn:	19		12	90	194					
		-											

	FHW	A-RD-77-108 H	IIGH	WAY N	OISE PR	EDICTIC	ON MOD	EL			
Road Nam	o: Interim Yea e: El Cerrito R nt: w/o Bedford		ject				Vame: B mber: 1:		d Marketpla	ace	
	SPECIFIC IN	PUT DATA								5	
Highway Data					Site Con	ditions (		· ·	,		
Average Daily	. ,							utos:	15		
	Percentage:	10%				dium Tru	,		15		
		2,729 vehicles			Hea	avy Truck	(3+ Ax	(les):	15		
	nicle Speed:	40 mph			Vehicle I	Nix					
Near/Far Lar	e Distance:	36 feet			Vehi	cleType	Ľ	Day	Evening	Night	Daily
Site Data						A	utos: 7	7.5%	12.9%	9.6%	97.42%
Bar	rier Heiaht:	0.0 feet			Me	edium Tru	icks: 8	4.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wa	all, 1-Berm):	0.0			F	leavy Tru	icks: 8	6.5%	2.7%	10.8%	0.74%
Centerline Dis	t. to Barrier:	44.0 feet			Noise So	urce Ele	vations	(in fe	et)		
Centerline Dist. t	o Observer:	44.0 feet				Autos			.,		
Barrier Distance t	o Observer:	0.0 feet			Mediur	n Trucks					
Observer Height (/	Above Pad):	5.0 feet				y Trucks			Grade Adju	ustment.	: 0.0
	d Elevation:	0.0 feet		-							
	d Elevation:	0.0 feet		1	Lane Equ				eet)		
F	Road Grade:	0.0%				Autos					
	Left View:	-90.0 degree				n Trucks					
	Right View:	90.0 degree	5		Heav	y Trucks	40.26	52			
FHWA Noise Mode											
VehicleType	REMEL	Traffic Flow	Disi	tance	Finite		Fresne		Barrier Atte		m Atten
Autos:	66.51	2.92		1.28	-	-1.20		4.61	0.0		0.000
Medium Trucks:	77.72	-14.32		1.3		-1.20		4.87	0.0		0.000
Heavy Trucks:	82.99	-18.27		1.3	1	-1.20	4	5.50	0.0	00	0.000
Unmitigated Noise			arrie								
VehicleType Autos:	Leq Peak Hou		7.0	Leq Ev	/ening 65.8	Leq N	v		Ldn 68.4		NEL
Autos: Medium Trucks:	69. 63.		7.6 2.0		55.6		59.8 54.1		62.6		69.0 62.8
Heavy Trucks:	64.		2.0 3.4		55.0 54.4		54.1 55.6		62.0 64.0		64.1
Vehicle Noise:	71.		3.4 9.8		66.5		62.0		70.5		71.0
			9.8		00.0		62.0		70.5		71.0
Centerline Distand	e to Noise Co	ntour (in feet)	1	70 (	ID A	65 0	DA I	0	0 dBA	FF	dBA
		,	dn:	70 0		10		0	221		48A
		-			-		-		221		509
		CN		5		11					

	FHW	A-RD-77-108	HIGHW	AY N	OISE PF	REDICTIO		EL							
Road Nar	Scenario: Interim Year 2021 Plus Project Road Name: El Cerrito Rd. Road Segment: e/o Bedford Cyn. Rd.						Project Name: Bedford Marketplace Job Number: 12751								
SITE	SPECIFIC INF	PUT DATA			NOISE MODEL INPUTS										
Highway Data				S	Site Conditions (Hard = 10, Soft = 15)										
Average Daily	Traffic (Adt): 28	3.326 vehicle	5				A	utos: 15							
• •	Percentage:	10%			Me	dium Tru	cks (2 Ax	les): 15							
Peak I	Hour Volume: 2	2,833 vehicle	3		He	avy Truck	ks (3+ Ax	les): 15							
Ve	ehicle Speed:	40 mph						,							
Near/Far La	ne Distance:	36 feet		v	/ehicle										
					Ven	icleType		ay Eveni	-	·	Daily				
Site Data				_		A edium Tri		7.5% 12.9 4.8% 4.9			7.42% 1.84%				
	arrier Height:	0.0 feet													
Barrier Type (0-V		0.0			,	Heavy Tru	JCKS: 8	6.5% 2.3	7% 10	0.8%	0.74%				
	ist. to Barrier:	44.0 feet		٨	loise So	ource Ele	vations	(in feet)							
Centerline Dist.		44.0 feet				Autos	: 0.00	00							
Barrier Distance		0.0 feet			Mediu	m Trucks									
Observer Height	· ,	5.0 feet			Heav	v Trucks	: 8.00	6 Grade	Adjusti	nent: 0	0.0				
	ad Elevation:	0.0 feet							,						
Ro	ad Elevation:	0.0 feet		L	.ane Eq			e (in feet)							
	Road Grade:	0.0%				Autos									
	Left View:	-90.0 degree	s			m Trucks									
	Right View:	90.0 degree	es		Heav	/y Trucks	: 40.26	52							
FHWA Noise Mod	lel Calculations										-				
VehicleType		Traffic Flow	Dista			Road	Fresne			Berm					
Autos.		3.08		1.28		-1.20	-4	4.61	0.000		0.000				
Medium Trucks.		-14.16		1.31		-1.20		4.87	0.000		0.000				
Heavy Trucks.	82.99	-18.11		1.31		-1.20	-{	5.50	0.000		0.000				
Unmitigated Nois			-												
VehicleType	Leq Peak Hour			eq Ev	v	Leq N	•	Ldn		CNE					
Autos.			67.8		66.0		60.0		68.6		69.2				
Medium Trucks.			62.2		55.8		54.3		62.7		62.9				
Heavy Trucks			63.6		54.5		55.8		64.1		64.3				
Vehicle Noise:	71.7	, 	70.0		66.7		62.1		70.7		71.1				
Centerline Distan	ice to Noise Cor	ntour (in feet	)	=0	0.1	05									
				70 d		65 0		60 dBA		55 dE					
			Ldn:	49		10 11	-	226		487					
		CI	VEL:	52	<u> </u>	11	2	242		522	-				

Friday, November 22, 2019

Friday, November 22, 2019

	FHV	/A-RD-77-108	HIGH	WAY NO	DISE PF	REDICT		EL							
Road Nam	Scenario: Interim Year 2021 Plus Project Road Name: El Cerrito Rd. Road Segment: e/o I-15 SB Ramps						Project Name: Bedford Marketplace Job Number: 12751								
	SPECIFIC IN	PUT DATA			NOISE MODEL INPUTS										
Highway Data				s	ite Con	ditions	(Hard =	10, So	ft = 15)						
Average Daily	Traffic (Adt): 1	8,411 vehicle	s				A	lutos:	15						
Peak Hour	Percentage:	10%			Me	dium Tri	ucks (2 A	xles):	15						
	our Volume:	1,841 vehicle	s		Hei	avy Tru	cks (3+ A	xles):	15						
	hicle Speed:	40 mph		v	ehicle l	Mix									
Near/Far La	ne Distance:	36 feet			Veh	icleType		Day	Evening	Night	Daily				
Site Data							Autos:	77.5%	12.9%	9.6%	97.42%				
Bai	rrier Heiaht:	0.0 feet			Me	edium T	rucks: 8	34.8%	4.9%	10.3%	1.84%				
Barrier Type (0-W		0.0			ŀ	leavy T	rucks: 8	36.5%	2.7%	10.8%	0.74%				
Centerline Dis		44.0 feet		Ν	loise Sc	ource E	levations	(in fe	et)						
Centerline Dist.		44.0 feet				Auto	s: 0.0	00							
Barrier Distance		0.0 feet			Mediur	n Truck	s: 2.2	97							
Observer Height (		5.0 feet			Heav	y Truck	s: 8.0	06	Grade Adji	ustment	: 0.0				
	ad Elevation:	0.0 feet			ano Eg	uivalon	t Distanc	o (in f	oot)						
	ad Elevation: Road Grade:	0.0 feet 0.0%		-	ane Ly	Auto			eel)						
	Left View:	-90.0 degre			Modiu	n Truck									
	Right View:	90.0 degre				y Truck									
FHWA Noise Mod	el Calculation	s													
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fresn	e/ I	Barrier Atte	en Bei	m Atten				
Autos:	66.51	1.21		1.28		-1.20	-	4.61	0.0	00	0.000				
Medium Trucks:	77.72	-16.03		1.31		-1.20	-	4.87	0.0	00	0.000				
Heavy Trucks:	82.99	-19.98		1.31		-1.20		5.50	0.0	00	0.000				
Unmitigated Noise															
VehicleType	Leq Peak Hou			Leq Ev	~	Leq	Night		Ldn		NEL				
Autos:	67	-	65.9		64.1		58.1		66.7		67.3				
Medium Trucks:	61	-	60.3		53.9		52.4		60.8		61.1				
Heavy Trucks:	63		61.7		52.7		53.9		62.3		62.4				
Vehicle Noise:	69	-	68.1		64.8		60.3		68.8		69.2				
Centerline Distant	ce to Noise Co	ontour (in feet	)	70 d	R4	65	dBA	6	0 dBA	55	dBA				
			I dn:	37			79		170		366				
		C	NEL:	39			34		182	-	392				
				50											

FHWA-RD-77-108 HIGH	AY NOISE PREDICTION MODEL									
Scenario: Interim Year 2021 Plus Project Road Name: El Cerrito Rd. Road Segment: e/o I-15 NB Ramps	Project Name: Bedford Marketplace Job Number: 12751									
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS									
Highway Data	Site Conditions (Hard = 10, Soft = 15)									
Average Daily Traffic (Adt): 10,991 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 1.099 vehicles	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15									
Vehicle Speed: 40 mph	Vehicle Mix									
Near/Far Lane Distance: 36 feet										
	VehicleType Day Evening Night Dai									
Site Data	Autos: 77.5% 12.9% 9.6% 97.4									
Barrier Height: 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.8									
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.7									
Centerline Dist. to Barrier: 44.0 feet	Noise Source Elevations (in feet)									
Centerline Dist. to Observer: 44.0 feet	Autos: 0.000									
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 2.297									
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006 Grade Adjustment: 0.0									
Pad Elevation: 0.0 feet										
Road Elevation: 0.0 feet	Lane Equivalent Distance (in feet)									
Road Grade: 0.0%	Autos: 40.460									
Left View: -90.0 degrees	Medium Trucks: 40.241									
Right View: 90.0 degrees	Heavy Trucks: 40.262									
FHWA Noise Model Calculations										
VehicleType REMEL Traffic Flow Dist	nce Finite Road Fresnel Barrier Atten Berm Atte									
Autos: 66.51 -1.03	1.28 -1.20 -4.61 0.000 0.									
Medium Trucks: 77.72 -18.27	1.31 -1.20 -4.87 0.000 0.									
Heavy Trucks: 82.99 -22.22	1.31 -1.20 -5.50 0.000 0.									
Unmitigated Noise Levels (without Topo and barrie										
VehicleType Leq Peak Hour Leq Day	Leq Evening Leq Night Ldn CNEL									
Autos: 65.6 63.7	61.9 55.8 64.5 6									
Medium Trucks: 59.6 58.1	51.7 50.1 58.6 5									
Heavy Trucks: 60.9 59.5	50.4 51.7 60.0 6									
Vehicle Noise: 67.6 65.8	62.6 58.0 66.6 6									
Centerline Distance to Noise Contour (in feet)										
	70 dBA 65 dBA 60 dBA 55 dBA									
Ldn:	26 56 120 259									
CNFL:	28 60 129 278									

_	FHW	A-RD-77-108 I	HIGHV	VAY N	IOISE PR	REDICTIO	N MOI	DEL			
Road Name	o: Interim Year e: Eagle Glen F t: e/o Masters	Pkwy.	ject			Project N Job Nur			d Marketpl	ace	
SITE S	SPECIFIC INF	PUT DATA							L INPUTS	S	
Highway Data					Site Con	ditions (H	lard =	10, Se	oft = 15)		
Average Daily 1	raffic (Adt): 2	1,109 vehicles					/	Autos:	15		
Peak Hour F	Percentage:	10%			Med	dium Truc	ks (2 A	xles):	15		
Peak Ho	our Volume:	2,111 vehicles			Hea	avy Truck	s (3+ A	xles):	15		
Veh	icle Speed:	40 mph		-	Vehicle I	Mix					
Near/Far Lan	e Distance:	36 feet		-		icleType	1	Day	Evening	Night	Daily
Site Data					VCIII			77.5%	•		97.42%
		0.0 feet			Me	dium Tru		84.8%		10.3%	
Barrier Type (0-Wa	rier Height:	0.0 feet				leavy Tru		86.5%		10.8%	
Centerline Dis		44.0 feet									
Centerline Dist. t		44.0 feet		1	Noise So	ource Elev			eet)		
Barrier Distance t	o Observer:	0.0 feet				Autos:	0.0				
Observer Height (A		5.0 feet				n Trucks:	2.2				
0 1	d Flevation:	0.0 feet			Heav	y Trucks:	8.0	006	Grade Adj	ustment	: 0.0
Roa	d Elevation:	0.0 feet			Lane Equ	uivalent L	Distand	e (in	feet)		
F	Road Grade:	0.0%			,	Autos:	40.4	, 160	,		
	Left View:	-90.0 degree	s		Mediur	n Trucks:	40.2	241			
	Right View:	90.0 degree	s		Heav	y Trucks:	40.2	262			
FHWA Noise Mode	Calculations										
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresn	el	Barrier Atte	en Bei	m Atten
Autos:	66.51	1.81		1.2	8	-1.20		-4.61	0.0	000	0.000
Medium Trucks:	77.72	-15.43		1.3	1	-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	82.99	-19.39		1.3	1	-1.20		-5.50	0.0	000	0.000
Unmitigated Noise	Levels (witho	ut Topo and I	barrier	atten	nuation)						
VehicleType	Leq Peak Hour	Leq Day	1	Leq E	vening	Leq N	ight		Ldn	С	NEL
Autos:	68.4	4 θ	6.5		64.7		58.7		67.3		67.9
Medium Trucks:	62.4		0.9		54.5		53.0		61.4	ŀ	61.7
Heavy Trucks:	63.7	76	2.3		53.3		54.5		62.9	)	63.0
Vehicle Noise:	70.4	4 6	8.7		65.4		60.9		69.4	ļ	69.8
	e to Noise Co	ntour (in feet)									
Centerline Distanc					dBA	65 dF		1 7	SO dBA	55	dBA
Centerline Distanc							3A				
Centerline Distanc			.dn:	4	0 3	86 92	3A		186 199	4	101 129

ht Doilu
ht Daily
.6% 97.42% .3% 1.84%
.3% 1.84% .8% 0.74%
070 0.7470
ent: 0.0
Berm Atten
0.000
0.000
0.000
CNEL
70.0
63.5
64.4
71.7
55 dBA
55 dBA 793 850

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	FH\	WA-RD-77-108	HIGH	IWAY NO	DISE PI	REDICT	ION MODEL			
	e: Cajalco Rd		oject				t Name: Bed lumber: 127		etplace	•
SITE S	PECIFIC IN	NPUT DATA				ſ	NOISE MOL	DEL INPU	JTS	
Highway Data				S	ite Cor	nditions	(Hard = 10,	Soft = 15)		
Average Daily T Peak Hour F Peak Ho	, ,	31,546 vehicle 10% 3,155 vehicle					Auto ucks (2 Axle: cks (3+ Axle:	s): 15		
Veh	icle Speed:	45 mph		V	ehicle/	Mix				
Near/Far Lan	e Distance:	76 feet		- F		nicleType	e Dav	Evenin	a Ni	ight Dail
Site Data							Autos: 77.		~	9.6% 97.42
Par	ier Height:	0.0 feet			М	ledium T	rucks: 84.8	3% 4.9	% 1	0.3% 1.84
Barrier Type (0-Wa	II, 1-Berm):	0.0				Heavy T	rucks: 86.	5% 2.7	% 1	0.8% 0.74
Centerline Dist		65.0 feet		٨	loise S	ource E	levations (ir	i feet)		
Centerline Dist. to Barrier Distance to Observer Height (A Pao	o Observer:	65.0 feet 0.0 feet 5.0 feet 0.0 feet				Auto m Truck vy Truck	is: 2.297	Grade	Adjust	ment: 0.0
Road	d Elevation:	0.0 feet		L	ane Eq	uivalen	t Distance (	n feet)		
R	oad Grade:	0.0%				Auto	s: 52.972			
	Left View: Right View:	-90.0 degree 90.0 degree				m Truck vy Truck	02.001			
FHWA Noise Mode	I Calculation	IS								
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresnel	Barrier	Atten	Berm Atte
Autos:	68.46	3.04		-0.48		-1.20	-4.7	0	0.000	0.0
Medium Trucks:	79.45	-14.20		-0.46		-1.20	-4.8	8	0.000	0.0
Heavy Trucks:	84.25	-18.16		-0.46		-1.20	-5.3	0	0.000	0.0
Unmitigated Noise	Levels (with	out Topo and	barri	er attenu	lation)					
VehicleType	Leq Peak Ho	ur Leq Day	/	Leq Ev	ening	Leq	Night	Ldn		CNEL
Autos:	69	9.8	67.9		66.2		60.1	6	8.7	69
Medium Trucks:	63	3.6	62.1		55.7		54.2	6	2.6	62
Heavy Trucks:	64	1.4	63.0		54.0		55.2	6	3.6	63
Vehicle Noise:	71	1.7	69.9		66.8		62.1	7	0.6	7'
Centerline Distance	e to Noise C	ontour (in feet	)						-	
			L	70 d			dBA	60 dBA		55 dBA
			Ldn:	72			54	332		716
		Ci	NEL:	77		1	66	357		768

		A-RD-77-108		IWAY NO							
	o: Interim Yea		oject				Name: Be		Marketpl	ace	
	e: Cajalco Rd.					Job N	umber: 12	2751			
Road Segmer	t: e/o I-15 NB	Ramps									
	SPECIFIC IN	PUT DATA					IOISE MO			5	
Highway Data				S	ite Con	ditions	(Hard = 1	0, Sofi	t = 15)		
Average Daily	Traffic (Adt): 3	5,426 vehicles	5					utos:	15		
Peak Hour	Percentage:	10%			Med	lium Tru	ucks (2 Ax	les):	15		
Peak H	our Volume:	3,543 vehicles	6		Hea	avy Truo	cks (3+ Ax	les):	15		
Vel	nicle Speed:	45 mph		V	ehicle N	liv					
Near/Far Lar	e Distance:	76 feet		-		cleType		ay E	Evening	Night	Daily
Site Data					1011			7.5%	12.9%	9.6%	
Box	rier Heiaht:	0.0 feet			Me	dium T	rucks: 8	4.8%	4.9%	10.3%	1.84
Barrier Type (0-Wa		0.0 teet 0.0		1		leavy T		6.5%	2.7%	10.8%	
Centerline Dis		65.0 feet									
Centerline Dist. t		65.0 feet		N	oise So		levations		et)		
Barrier Distance t		0.0 feet				Auto					
Observer Height (/		5.0 feet			Mediun						
0 1	d Elevation:	0.0 feet			Heav	v Truck	s: 8.00	06 G	Grade Adj	ustment:	0.0
	d Elevation: d Elevation:	0.0 feet		1	ane Fai	iivalen	t Distance	íin fe	et)		
	Coad Grade:	0.0%		-	ano Eqe	Auto			01)		
,	Left View:	-90.0 degree			Mediun			-			
	Right View:	90.0 degree				v Truck					
	Night view.	90.0 degree	:5		neav,	y much	3. 02.02	- '			
FHWA Noise Mode	el Calculation										
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite I		Fresne		arrier Atte		m Atter
Autos:	68.46	3.54		-0.48		-1.20		4.70	0.0		0.00
Medium Trucks:	79.45	-13.70		-0.46		-1.20		4.88	0.0		0.00
Heavy Trucks:	84.25	-17.65		-0.46		-1.20	-8	5.30	0.0	00	0.00
Unmitigated Noise	Levels (with	out Topo and	barrie	er attenu	ation)						
,1	Leq Peak Hou	1 1		Leq Eve	~	Leq	Night	L	dn		VEL
Autos:	70.		68.4		66.7		60.6		69.2		69
Medium Trucks:	64		62.6		56.2		54.7		63.1		63
Heavy Trucks:	64	9 (	63.5		54.5		55.7		64.1		64
Vehicle Noise:	72	2	70.4		67.3		62.6		71.1		71
Centerline Distand	e to Noise Co	ntour (in feet)	)								
			L	70 di	BA	65	dBA	60	dBA	55	dBA
			Ldn:	77		1	67	3	359	7	74

	FHW	/A-RD-77-108	HIGH	WAY N	IOISE PR	EDICTIO	N MODEI			
	<ul> <li>D: Interim Yea</li> <li>D: Cajalco Rd.</li> <li>t: e/o Grand C</li> </ul>		oject				ame: Beo nber: 127	iford Marketpla 51	ace	
SITE S	PECIFIC IN	PUT DATA						DEL INPUTS	6	
Highway Data					Site Con	ditions (H	lard = 10,	Soft = 15)		
Average Daily 1	raffic (Adt): 2	1,713 vehicles	s				Aut	os: 15		
Peak Hour F	Percentage:	10%			Med	lium Truc	ks (2 Axle	s): 15		
Peak Ho	our Volume:	2,171 vehicles	s		Hea	avy Truck	s (3+ Axle	s): 15		
	icle Speed:	45 mph		F	Vehicle I	<i>lix</i>				
Near/Far Lan	e Distance:	76 feet		F	Vehi	cleType	Da	y Evening	Night	Daily
Site Data							tos: 77.	, i	9.6%	97.429
Bar	rier Height:	0.0 feet			Me	dium Tru	cks: 84.	8% 4.9%	10.3%	1.849
Barrier Type (0-Wa	•	0.0			F	leavy Tru	cks: 86.	5% 2.7%	10.8%	0.749
Centerline Dis		65.0 feet		-	Noise Sc	urce Elev	vations (i	n foot)		
Centerline Dist. t	o Observer:	65.0 feet		÷	140136 30	Autos:		,		
Barrier Distance t	o Observer:	0.0 feet			Madium	n Trucks:	2.297			
Observer Height (A	bove Pad):	5.0 feet				v Trucks:	8.006		istment <sup>.</sup>	0.0
Pa	d Elevation:	0.0 feet						,	aoumonia.	0.0
Roa	d Elevation:	0.0 feet		-	Lane Equ		Distance (	,		
F	oad Grade:	0.0%				Autos:	52.972			
	Left View:	-90.0 degree				n Trucks:	52.804			
	Right View:	90.0 degree	es		Heav	y Trucks:	52.821			
FHWA Noise Mode	Calculation	5								
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite		Fresnel	Barrier Atte		m Atten
Autos:	68.46	1.42		-0.4	-	-1.20	-4.			0.00
Medium Trucks:	79.45	-15.82		-0.4	-	-1.20	-4.			0.00
Heavy Trucks:	84.25	-19.78		-0.4	6	-1.20	-5.	30 0.0	00	0.00
Unmitigated Noise										
	Leq Peak Hou			Leq E	vening	Leq N	•	Ldn		IEL
Autos:	68.	-	66.3		64.5		58.5	67.1		67.
Medium Trucks:	62.	-	60.5		54.1		52.6	61.0		61.
Heavy Trucks:	62.	-	61.4		52.4		53.6	62.0		62.
Vehicle Noise:	70.	-	68.3		65.1		60.5	69.0		69.
Centerline Distanc	e to Noise Co	ntour (in feet	)	70	-/04	05 "		00-104		-10.4
					dBA	65 dE		60 dBA		dBA
			Ldn: VFI :	-	i6 i0	120		259 278		58 99

	FHW	A-RD-77-108	HIGHW	AY NO	OISE PI	REDICTIO		EL			
Road Nar	<i>rio:</i> Interim Year ne: Cajalco Rd. ent: e/o Temesca		oject				Vame: B Imber: 12		Marketpla	ce	
SITE	SPECIFIC INF	PUT DATA				N	OISE M	ODEL	INPUTS		
Highway Data				S	Site Cor	ditions (	Hard = 1	0, Soft	= 15)		
Average Daily	Traffic (Adt): 22	2.968 vehicle	5				A	utos:	15		
• •	Percentage:	10%			Me	dium Tru	cks (2 Ax	(les):	15		
Peak I	Hour Volume: 2	2,297 vehicle	6		He	avy Truc	ks (3+ Ax	des):	15		
Ve	ehicle Speed:	45 mph						,			
Near/Far La	ane Distance:	76 feet		v	/ehicle						
					ven	icleType		_	•	Night	Daily
Site Data				_		A edium Tri		7.5% 4.8%	12.9% 4.9%	9.6% 10.3%	97.42%
	arrier Height:	0.0 feet						4.8% 6.5%	4.9% 2.7%	10.3%	0.74%
Barrier Type (0-V		0.0				Heavy Tr	JCKS: 8	0.5%	2.1%	10.8%	0.74%
	ist. to Barrier:	65.0 feet		٨	loise Se	ource Ele	evations	(in feet	)		
Centerline Dist.		65.0 feet				Autos	: 0.00	00			
Barrier Distance		0.0 feet			Mediu	m Trucks	2.29	97			
Observer Height	· /	5.0 feet			Heav	v Trucks	: 8.00	06 G	rade Adju	stment:	0.0
	Pad Elevation:	0.0 feet									
Ro	ad Elevation:	0.0 feet		L	.ane Eq	uivalent			et)		
	Road Grade:	0.0%				Autos					
	Left View:	-90.0 degree	es			m Trucks					
	Right View:	90.0 degree	es		Heav	/y Trucks	52.82	21			
FHWA Noise Mod	del Calculations										
VehicleType	REMEL	Traffic Flow	Distar			Road	Fresne		arrier Atte		n Atten
Autos		1.66		-0.48	1	-1.20	-4	4.70	0.00	00	0.000
Medium Trucks		-15.58		-0.46		-1.20		4.88	0.00		0.000
Heavy Trucks	84.25	-19.53		-0.46	i	-1.20	-{	5.30	0.00	00	0.000
Unmitigated Nois											
VehicleType	Leq Peak Hour			eq Ev	ening	Leq I	•	L	dn	CN	
Autos			66.5		64.8		58.7		67.3		67.9
Medium Trucks			60.7		54.3		52.8		61.3		61.5
Heavy Trucks			61.6		52.6		53.8		62.2		62.3
Vehicle Noise.			68.5		65.4		60.7		69.3		69.7
Centerline Distar	nce to Noise Cor	ntour (in feet	)	70 -	D A	65 0	04		dBA		0.4
			L day	70 d		65 C			39 39	55 0	
			Ldn: VEL:	58 62		12	-	20		58 62	
		CI	VEL.	62	<u>-</u>	13	4	20	59	62	2

Friday, November 22, 2019

Friday, November 22, 2019

	FHV	VA-RD-77-108	HIGH	IWAY N	IOISE PI	REDICTIO		DEL			
	io: Horizon Ye								d Marketpl	ace	
	e: Masters Dr					Job NL	Imber: '	2751			
Road Segme	nt: n/o Califorr	na Av.									
	SPECIFIC IN	IPUT DATA							L INPUT	S	
Highway Data					Site Cor	nditions (	Hard =	10, So	oft = 15)		
Average Daily	Traffic (Adt):	8,000 vehicle	s					Autos:	15		
Peak Hour	Percentage:	10%				dium Tru		/	15		
Peak H	lour Volume:	800 vehicle	s		He	avy Truci	ks (3+ A	xles):	15		
	hicle Speed:	40 mph			Vehicle	Mix					
Near/Far La	ne Distance:	14 feet		-		icleType		Dav	Evening	Night	Daily
Site Data							utos:	77.5%	0	9.6%	
Bai	rrier Height:	0.0 feet			М	edium Tri	ucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-W	•	0.0				Heavy Tri	ucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dis		34.0 feet			Noise S	ource Ele	evations	s (in fe	et)		
Centerline Dist.		34.0 feet				Autos	: 0.0	00	1		
Barrier Distance	to Observer:	0.0 feet			Mediu	m Trucks	: 2.2	97			
Observer Height (	,	5.0 feet			Hear	vy Trucks	: 8.0	06	Grade Adj	ustment	: 0.0
	ad Elevation:	0.0 feet		_							
	ad Elevation:	0.0 feet		1	Lane Eq	uivalent			eet)		
	Road Grade:	0.0%				Autos	. 00.0				
	Left View:	-90.0 degre				m Trucks					
	Right View:	90.0 degre	es		Hear	/y Trucks	: 33.4	107			
FHWA Noise Mod		-									
VehicleType	REMEL	Traffic Flow		stance		Road	Fresn		Barrier Att		rm Atten
Autos:	66.51	-2.41		2.4	-	-1.20		4.53		000	0.000
Medium Trucks:	77.72			2.5		-1.20		4.86		000	0.000
Heavy Trucks:	82.99	-23.60		2.5		-1.20		-5.67	0.0	000	0.000
Unmitigated Nois											
VehicleType Autos:	Leq Peak Hou 65		63.5	Leq E	ening 61.7	Leq I	vignt 55.7		Ldn 64.3	-	NEL 64.9
Medium Trucks:	59		63.5 57.9		51.5		50.0		64.3 58.4		58.7
Heavy Trucks:	55		57.9 59.3		51.5 50.3		50.0		58.4		58. <i>1</i> 60.0
Vehicle Noise:	60		59.3 65.7		50.3 62.4		51.5		59.9	·	60.0
					62.4		57.8		66.4		00.0
Centerline Distan	ce to Noise C	ontour (in feel	<i>1</i>	70 0	dBA	65 c	IBA	6	0 dBA	55	dBA
			Ldn:	2		42			91		195
		С	NEL:	2	-	4	-		97		209
		-		-			-			-	

FHWA-I	RD-77-108 HIGI	HWAY N	OISE PRED		DEL	
Scenario: Horizon Year 2	035		Pro	oject Name: I	Bedford Marketp	ace
Road Name: Masters Dr.			Jo	b Number: *	12751	
Road Segment: s/o California A	ν.					
SITE SPECIFIC INPU	T DATA				ODEL INPUT	S
Highway Data		5	Site Conditi	ons (Hard =	10, Soft = 15)	
Average Daily Traffic (Adt): 8,8	00 vehicles			,	Autos: 15	
Peak Hour Percentage:	10%		Mediur	n Trucks (2 A	xles): 15	
Peak Hour Volume: 8	80 vehicles		Heavy	Trucks (3+ A	xles): 15	
Vehicle Speed:	40 mph		Vehicle Mix			
Near/Far Lane Distance:	14 feet	Ľ	Vehicle	lime.	Day Evening	Night Daily
Site Data			venicie		77.5% 12.9%	9.6% 97.42%
			14-15-		84.8% 4.9%	10.3% 1.849
Barrier Height:	0.0 feet					
Barrier Type (0-Wall, 1-Berm):	0.0		Hea	/y Trucks:	86.5% 2.7%	10.8% 0.74%
	4.0 feet	1	Voise Sourd	e Elevations	s (in feet)	
	4.0 feet			Autos: 0.0	000	
Barrier Distance to Observer:	0.0 feet		Medium T	ucks: 2.2	297	
Observer Height (Above Pad):	5.0 feet		Heavy T	ucks: 8.0	06 Grade Ad	ustment: 0.0
Pad Elevation:	0.0 feet		,			
Road Elevation:	0.0 feet	1		lent Distand	, ,	
Road Grade:	0.0%			Autos: 33.6		
Left View: -9	0.0 degrees		Medium T			
Right View: 9	0.0 degrees		Heavy T	ucks: 33.4	407	
FHWA Noise Model Calculations						
VehicleType REMEL Tra	affic Flow Di	stance	Finite Roa	d Fresn	el Barrier Att	en Berm Atten
Autos: 66.51	-1.99	2.48	3 -1	.20	-4.53 0.0	0.00
Medium Trucks: 77.72	-19.23	2.53	3 -1	.20	-4.86 0.0	0.00
Heavy Trucks: 82.99	-23.19	2.52	2 -1	.20	-5.67 0.0	0.00
Unmitigated Noise Levels (without			,			
VehicleType Leq Peak Hour	Leq Day	Leq Ev	•	Leq Night	Ldn	CNEL
Autos: 65.8	63.9		62.1	56.1		
Medium Trucks: 59.8	58.3		51.9	50.4		
Heavy Trucks: 61.1	59.7		50.7	51.9	60.3	3 60.
Vehicle Noise: 67.8	66.1		62.8	58.3	66.8	67
Centerline Distance to Noise Conto	our (in feet)				I	1
	l	70 c		65 dBA	60 dBA	55 dBA
	Ldn:	2	1	45	97	208
	CNFL:	23		48	103	223

	FHV	VA-RD-77-108	HIGHWA	Y NOISE F	REDICTIO	MODEL			
Road Nam	io: Horizon Ye le: Masters Dr nt: n/o Bennet					ame: Bedfi nber: 1275	ord Marketpla 1	ace	
	SPECIFIC IN	IPUT DATA			NO	ISE MOD	EL INPUTS	;	
Highway Data				Site Co	nditions (H	ard = 10, \$	Soft = 15)		
Average Daily	Traffic (Adt):	6,400 vehicles	3			Auto	s: 15		
Peak Hour	Percentage:	10%		M	edium Trucl	s (2 Axles	): 15		
Peak H	our Volume:	640 vehicles	6	н	eavy Trucks	(3+ Axles	): 15		
Ve	hicle Speed:	40 mph		Vehicle	Mix				
Near/Far La	ne Distance:	14 feet			hicleType	Dav	Evening	Night D	Dailv
Site Data					Au	tos: 77.5	% 12.9%	9.6% 97	.42%
Bai	rrier Height:	0.0 feet		/	Aedium Truc	ks: 84.8	% 4.9%	10.3% 1	.84%
Barrier Type (0-W	•	0.0			Heavy True	ks: 86.5	% 2.7%	10.8% 0	).74%
Centerline Dis	st. to Barrier:	34.0 feet		Noise S	Source Elev	ations (in	feet)		
Centerline Dist.	to Observer:	34.0 feet			Autos:	0.000			
Barrier Distance	to Observer:	0.0 feet		Modi	im Trucks:	2.297			
Observer Height (	Above Pad):	5.0 feet			avy Trucks:	8.006	Grade Adiu	istment: 0.0	0
Pa	ad Elevation:	0.0 feet					,		-
	ad Elevation:	0.0 feet		Lane E	quivalent D		n feet)		
1	Road Grade:	0.0%			Autos:	33.645			
	Left View:	-90.0 degree			um Trucks:	33.381			
	Right View:	90.0 degree	es	Hea	wy Trucks:	33.407			
FHWA Noise Mod	el Calculation	s							
VehicleType	REMEL	Traffic Flow	Distan		e Road	Fresnel	Barrier Atte	-	
Autos:	66.51	-3.38		2.48	-1.20	-4.53			0.000
Medium Trucks:	77.72	-20.62		2.53	-1.20	-4.86			0.000
Heavy Trucks:	82.99	-24.57		2.52	-1.20	-5.6	7 0.00	00 00	0.000
Unmitigated Nois			barrier a	tenuation					
VehicleType	Leq Peak Hou			q Evening	Leq Ni		Ldn	CNEL	
Autos:	64		62.5	60.		54.7	63.3		63.9
Medium Trucks:	58		56.9	50.	-	49.0	57.5		57.7
Heavy Trucks:	59		58.3	49.	-	50.5	58.9		59.0
	66	.4	64.7	61.	4	56.9	65.4		65.9
Vehicle Noise:						-		-	
Vehicle Noise: Centerline Distant	ce to Noise C	ontour (in feet)	<u> </u>		1				
	ce to Noise C			70 dBA	65 dE	A	60 dBA	55 dBA	4
	ce to Noise C		Ldn:	70 dBA 17 18	65 dE 36 39	A	60 dBA 78 84	55 dBA 168 180	4

	FHV	VA-RD-77-108	HIGHW	AY NO	DISE PR	EDICTI	ON MOI	DEL			
	<ul> <li>D: Horizon Ye</li> <li>Masters Dr</li> <li>t: n/o Eagle G</li> </ul>						Name:   umber:		d Marketpl	ace	
	SPECIFIC IN	IPUT DATA							L INPUT	5	
Highway Data				S	ite Cond	ditions	(Hard =	10, So	oft = 15)		
Average Daily 1	raffic (Adt):	6,100 vehicles	;					Autos:	15		
Peak Hour F	Percentage:	10%			Med	lium Tru	cks (2 A	(xles):	15		
Peak Ho	our Volume:	610 vehicles			Hea	vy Truc	ks (3+ A	(xles):	15		
Veh	icle Speed:	40 mph		v	ehicle N	lix					
Near/Far Lan	e Distance:	14 feet		-		cleType		Day	Evening	Night	Daily
Site Data					Verne			77.5%	•	9.6%	
Bar	rier Height:	0.0 feet			Me	dium Tr	ucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wa	•	0.0			н	eavy Tr	ucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dis		34.0 feet			loise So			- (l 6	41		
Centerline Dist. to	o Observer:	34.0 feet		N	ioise So				eet)		
Barrier Distance to	o Observer:	0.0 feet			Medium	Autos		000 297			
Observer Height (A	bove Pad):	5.0 feet							Grade Adj	unternet	0.0
Pa	d Elevation:	0.0 feet			Heavy	/ Trucks	. 8.0	006	Grade Adj	usuneni.	0.0
Roa	d Elevation:	0.0 feet		L	ane Equ	ivalent	Distand	ce (in	feet)		
F	load Grade:	0.0%				Autos	: 33.0	645			
	Left View:	-90.0 degree	s		Medium	n Trucks	: 33.	381			
	Right View:	90.0 degree	s		Heavy	/ Trucks	: 33.4	407			
FHWA Noise Mode	Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite F	Road	Fresn	el	Barrier Atte	en Ber	m Atten
Autos:	66.51	-3.59		2.48		-1.20		-4.53	0.0	00	0.000
Medium Trucks:	77.72	-20.82		2.53		-1.20		-4.86	0.0	00	0.000
Heavy Trucks:	82.99	-24.78		2.52		-1.20		-5.67	0.0	00	0.000
Unmitigated Noise	Levels (with	out Topo and I	barrier	attenu	ation)						
VehicleType	Leq Peak Hou	Ir Leq Day	L	.eq Eve	ening	Leq I	Vight		Ldn		VEL
Autos:	64		52.3		60.5		54.5		63.1		63.7
Medium Trucks:	58		56.7		50.4		48.8		57.3		57.5
Heavy Trucks:	59	-	58.1		49.1		50.3		58.7		58.8
Vehicle Noise:	66	.2 6	64.5		61.2		56.7	,	65.2	2	65.6
Centerline Distanc	e to Noise Co	ontour (in feet)								T	
				70 di		65 0		6	60 dBA		dBA
			.dn:	16		3			76		63
		CN	IEL:	17		3	В		81	1	74

Friday, November 22, 2019

Friday, November 22, 2019

	FHW	A-RD-77-108	HIGHW	AY NO	DISE PF	REDICTI	ON MOI	DEL			
	: Horizon Yea : Bedford Cyn : s/o El Cerrite	. Rd.					Name: E umber: '		d Marketpl	ace	
SITE S	PECIFIC IN	PUT DATA							L INPUTS	s	
Highway Data				S	ite Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily T Peak Hour P	, ,	4,500 vehicle 10%	s		Me	dium Tru	icks (2 A	Autos: xles):	15 15		
Peak Ho	ur Volume:	1,450 vehicle	s		He	avy Truc	ks (3+ A	xles):	15		
Vehi	icle Speed:	40 mph		v	ehicle l	Mix					
Near/Far Lane	e Distance:	24 feet		-		icleType		Dav	Evening	Night	Dailv
Site Data							lutos:	77.5%		9.6%	97.42%
Barr	ier Heiaht:	0.0 feet			Me	edium Tr	ucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wa		0.0			ŀ	leavy Tr	ucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist.		38.0 feet		Ν	loise So	ource El	evations	s (in fe	eet)		
Centerline Dist. to		38.0 feet				Autos	s: 0.0	000	1		
Barrier Distance to	Observer:	0.0 feet			Mediu	m Trucks	: 2.2	297			
Observer Height (A	,	5.0 feet			Heav	y Trucks	s: 8.0	006	Grade Adj	ustment	: 0.0
	d Elevation:	0.0 feet					Distant				
	d Elevation:	0.0 feet		L	ane Eq	Autos	Distanc		reet)		
R	oad Grade: Left View:	0.0%			Modiu	m Trucks	. 00				
	Right View:	-90.0 degre 90.0 degre				ry Trucks					
FHWA Noise Model	Calculations										
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresn	el	Barrier Atte	en Be	rm Atten
Autos:	66.51	0.17		1.96		-1.20		-4.57	0.0	000	0.000
Medium Trucks:	77.72	-17.06		2.01		-1.20		-4.87	0.0		0.000
Heavy Trucks:	82.99	-21.02		2.00		-1.20		-5.59	0.0	000	0.000
Unmitigated Noise											
	eq Peak Hour			eq Ev		Leq	Night		Ldn	-	NEL
Autos:	67.	-	65.6		63.8		57.7		66.4		67.0
Medium Trucks:	61.	-	60.0		53.6		52.0		60.5		60.7
Heavy Trucks: Vehicle Noise:	62.	-	61.4 67.7		52.3 64.5		53.6 59.9		61.9		62.1 68.9
Centerline Distance		-	••••		20		20.0		20.0		20.0
Contenine Distance	5 10 110/36 00	nour (III leel	/	70 d	BA	65 (	dBA	6	0 dBA	55	dBA
			Ldn:	30	)	6	5	1	139	3	300
		C	NEL:	32		6	9		149	3	321

FHW	A-RD-77-108 HIG	HWAY N	OISE PREDI		EL	
Scenario: Horizon Year	2035		Proj	ect Name: B	edford Marketpla	ce
Road Name: Bedford Cyn.	Rd.		Jo	b Number: 12	2751	
Road Segment: n/o Georgeto	wn Dr.					
SITE SPECIFIC INF	UT DATA				DEL INPUTS	
Highway Data		1	Site Conditio	ns (Hard = 1	0, Soft = 15)	
Average Daily Traffic (Adt): 14	,500 vehicles			A	utos: 15	
Peak Hour Percentage:	10%		Medium	Trucks (2 Ax	<i>les):</i> 15	
Peak Hour Volume: 1	,450 vehicles		Heavy	rucks (3+ Ax	<i>les):</i> 15	
Vehicle Speed:	40 mph	-	Vehicle Mix			
Near/Far Lane Distance:	24 feet	-	VehicleT	(no ) [	ay Evening	Night Daily
Site Data			venicier		7.5% 12.9%	9.6% 97.42%
			Modium		4.8% 4.9%	10.3% 1.849
Barrier Height:	0.0 feet				4.0% 4.9% 6.5% 2.7%	10.3% 1.84%
Barrier Type (0-Wall, 1-Berm):	0.0		Heav	/ Trucks: 8	0.5% 2.7%	10.8% 0.74%
Centerline Dist. to Barrier:	38.0 feet	1	Noise Source	Elevations	(in feet)	
Centerline Dist. to Observer:	38.0 feet		A	utos: 0.00	0	
Barrier Distance to Observer:	0.0 feet		Medium Tri	icks: 2.29	7	
Observer Height (Above Pad):	5.0 feet		Heavy Tr	icks: 8.00	6 Grade Adju	stment: 0.0
Pad Elevation:	0.0 feet		,			
Road Elevation:	0.0 feet	1	Lane Equiva		. ,	
Road Grade:	0.0%			utos: 36.40		
Left View:	-90.0 degrees		Medium Tri			
Right View:	90.0 degrees		Heavy Tri	icks: 36.18	31	
FHWA Noise Model Calculations						
VehicleType REMEL	Traffic Flow D	listance	Finite Roa	f Fresne	Barrier Atte	n Berm Atten
Autos: 66.51	0.17	1.96	6 -1.	20 -4	4.57 0.00	0.00
Medium Trucks: 77.72	-17.06	2.01	1 -1.3	20 -4	4.87 0.00	0.00
Heavy Trucks: 82.99	-21.02	2.00	0 -1.	20 -3	5.59 0.00	00.00
Unmitigated Noise Levels (without			,			
VehicleType Leq Peak Hour	Leq Day	Leq Ev	0	eq Night	Ldn	CNEL
Autos: 67.5			63.8	57.7	66.4	67.
Medium Trucks: 61.5			53.6	52.0	60.5	60.
Heavy Trucks: 62.8	61.4		52.3	53.6	61.9	62.
Vehicle Noise: 69.5	67.7	,	64.5	59.9	68.5	68
Centerline Distance to Noise Cor	ntour (in feet)	1				
		70 c		65 dBA	60 dBA	55 dBA
	Ldn:	: 31	0	65	139	300
	CNEL	: 3:		69	149	321

FHWA-RD-77-108 HIGHWA	Y NOISE PREDICTION MODEL
Scenario: Horizon Year 2035 Road Name: Bedford Cyn. Rd. Road Segment: n/o Eagle Glen Pkwy.	Project Name: Bedford Marketplace Job Number: 12751
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS
Highway Data	Site Conditions (Hard = 10, Soft = 15)
Average Daily Traffic (Adt): 14,200 vehicles	Autos: 15
Peak Hour Percentage: 10%	Medium Trucks (2 Axles): 15
Peak Hour Volume: 1,420 vehicles	Heavy Trucks (3+ Axles): 15
Vehicle Speed: 40 mph	Vehicle Mix
Near/Far Lane Distance: 24 feet	VehicleType Day Evening Night Daily
Site Data	Autos: 77.5% 12.9% 9.6% 97.42%
Barrier Height: 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%
Centerline Dist. to Barrier: 38.0 feet	Noise Source Elevations (in feet)
Centerline Dist. to Observer: 38.0 feet	Autos: 0.000
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 2.297
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8,006 Grade Adjustment: 0.0
Pad Elevation: 0.0 feet	
Road Elevation: 0.0 feet	Lane Equivalent Distance (in feet)
Road Grade: 0.0%	Autos: 36.401
Left View: -90.0 degrees Right View: 90.0 degrees	Medium Trucks: 36.157 Heavy Trucks: 36.181
FHWA Noise Model Calculations	
VehicleType REMEL Traffic Flow Distance	e Finite Road Fresnel Barrier Atten Berm Atten
Autos: 66.51 0.08	1.96 -1.20 -4.57 0.000 0.00
Medium Trucks: 77.72 -17.15	2.01 -1.20 -4.87 0.000 0.00
Heavy Trucks: 82.99 -21.11	2.00 -1.20 -5.59 0.000 0.00
Unmitigated Noise Levels (without Topo and barrier at	,
	r Evening Leq Night Ldn CNEL
Autos: 67.4 65.5	63.7 57.6 66.3 66.
Medium Trucks: 61.4 59.9	53.5 52.0 60.4 60.
Heavy Trucks: 62.7 61.3	52.2 53.5 61.8 62.
Vehicle Noise: 69.4 67.7	64.4 59.8 68.4 68.
Centerline Distance to Noise Contour (in feet)	70 dBA 65 dBA 60 dBA 55 dBA
	00 UDA 00 UDA 55 0BA
	20 64 127 205
Ldn: CNFL :	30         64         137         295           32         68         147         316

	FHV	VA-RD-77-108	HIGHW	AY NO	OISE PR	REDICT	ON MODE				
Road Nan	<i>io:</i> Horizon Ye ne: Temescal ( nt: n/o Cajalco	Cyn. Rd.					Name: Beo umber: 127	lford Marketp 51	lace		
SITE	SPECIFIC IN	IPUT DATA				N	IOISE MO	DEL INPUT	S		
Highway Data				S	Site Con	ditions	(Hard = 10,	Soft = 15)			
Average Daily	Traffic (Adt):	26,500 vehicle	s				Aut	os: 15			
Peak Hour	Percentage:	10%			Mee	dium Tru	icks (2 Axle	s): 15			
Peak F	lour Volume:	2,650 vehicle	s		Hea	avy Truc	ks (3+ Axle	s): 15			
Ve	hicle Speed:	45 mph		L.	/ehicle l	Mix					
Near/Far La	ne Distance:	51 feet		Ľ		icleType	Da	V Evening	Nig	ht	Daily
Site Data					veni		Autos: 77.		· ·		07.42%
					Ma	, dium T				.0% s .3%	1.84%
	rrier Height:	0.0 feet				leavy T				.8%	0.74%
Barrier Type (0-W		0.0			'	icavy n	uons. 00.	2.170	10.	070	0.7470
Centerline Di		53.0 feet		٨	Voise So	ource E	evations (i	n feet)			
Centerline Dist.		53.0 feet				Auto	s: 0.000				
Barrier Distance		0.0 feet 5.0 feet			Mediur	n Truck	s: 2.297				
Observer Height (	ad Elevation:	0.0 feet			Heav	y Truck	s: 8.006	Grade Ad	ljustm	ent: (	0.0
	ad Elevation: ad Elevation:	0.0 feet		1	ano Fa	uivalon	Distance (	in foot)			
	au Elevalion. Road Grade:	0.0%		F	une Ly	Auto		millery			
	Left View:	-90.0 degree			Modiur	n Truck					
	Right View:	90.0 degre				y Truck					
EHWA Noise Mod	lel Calculation	e									
FHWA Noise Mod		-	Distar	nce	Finite	Road	Fresnel	Barrier At	ten	Berm	Atten
FHWA Noise Mod VehicleType Autos:	REMEL	s Traffic Flow 2.28	Distar		Finite	Road -1.20	Fresnel	Barrier At		Berm	Atten
VehicleType	REMEL 68.46	Traffic Flow	Distar	nce 0.34 0.36	ŀ		Fresnel -4. -4.	66 0.	<i>ten</i> 000 000	Berm	0.000
VehicleType Autos:	REMEL 68.46 79.45	Traffic Flow 2.28	Distar	0.34	4 3	-1.20	-4.	66 0. 37 0.	000	Berm	0.000
VehicleType Autos: Medium Trucks: Heavy Trucks:	REMEL 68.46 79.45 84.25	Traffic Flow 2.28 -14.96 -18.91		0.34 0.36 0.36	4 3 3	-1.20 -1.20	-4. -4.	66 0. 37 0.	000 000	Berm	0.000
VehicleType Autos: Medium Trucks: Heavy Trucks:	REMEL 68.46 79.45 84.25	<i>Traffic Flow</i> 2.28 -14.96 -18.91 <i>out Topo and</i>	barrier a	0.34 0.36 0.36 attent	4 3 3	-1.20 -1.20 -1.20	-4. -4.	66 0. 37 0.	000 000	Berm	0.000
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos:	REMEL 68.46 79.45 84.25 e Levels (with Leq Peak Hou 69	Traffic Flow           2.28           -14.96           -18.91           out Topo and           ir         Leq Day           .9	<b>barrier</b> a / L	0.34 0.36 0.36 attent	uation) rening 66.2	-1.20 -1.20 -1.20	-4. -4. -5. Night 60.2	66 0.' 37 0.' 40 0.' <u>Ldn</u> 68.	000 000 000 8		0.000 0.000 0.000
VehicleType Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Nois</b> VehicleType	REMEL 68.46 79.45 84.25 e Levels (with Leq Peak Hou 69	Traffic Flow           2.28           -14.96           -18.91           out Topo and           ir         Leq Day           .9	barrier a	0.34 0.36 0.36 attent	uation)	-1.20 -1.20 -1.20	-4. -4. -5.	66 0. 37 0. 40 0. Ldn	000 000 000 8		0.000 0.000 0.000
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos:	REMEL 68.46 79.45 84.25 e Levels (with Leq Peak Hou 69 63	Traffic Flow           2.28           -14.96           -18.91           out Topo and           r           Leq Day           .9           .7	<b>barrier</b> a / L	0.34 0.36 0.36 attent	uation) rening 66.2	-1.20 -1.20 -1.20	-4. -4. -5. Night 60.2	66 0.' 37 0.' 40 0.' <u>Ldn</u> 68.	000 000 000 8 7		0.000 0.000 0.000 EL 69.4 62.9
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks:	REMEL 68.46 79.45 84.25 <b>e Levels (with</b> Leq Peak Hou 69 63 64	Traffic Flow           2.28           -14.96           -18.91           out Topo and           rr           Leq Day           .9           .7           .5	barrier a / L 68.0 62.1	0.34 0.36 0.36 attent	uation) vening 66.2 55.8	-1.20 -1.20 -1.20	-4. -4. -5. Night 60.2 54.2	66 0. 87 0. 40 0. <u>Ldn</u> 68. 62.	000 000 000 8 7 6		0.000 0.000 0.000 EL 69.4 62.9 63.8
VehicleType Autos: Medium Trucks: Heavy Trucks: Unnitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks:	REMEL 68.46 79.45 84.25 e Levels (with Leq Peak Hou 69 63 64 71	Traffic Flow           2.28           -14.96           -18.91           Out Topo and           r           Leq Day           .9           .7           .5           .7	barrier a / L/ 68.0 62.1 63.1 70.0	0.34 0.36 0.36 attenu eq Ev	uation) rening 66.2 55.8 54.0 66.8	-1.20 -1.20 -1.20 <i>Leq</i>	-4.1 -4.1 -5.7 Night 60.2 54.2 55.3 62.2	36         0.1           37         0.1           40         0.1            68.           62.         63.           70.         70.	000 000 000 8 7 6	CNE	0.000 0.000 0.000 EL 69.4 63.8 71.2
VehicleType Autos: Medium Trucks: Heavy Trucks: Unnitigated Noiss VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	REMEL 68.46 79.45 84.25 e Levels (with Leq Peak Hou 69 63 64 71	Traffic Flow           2.28           -14.96           -18.91           Out Topo and           r         Leq Day           .9           .7           .5           .7           ontour (in feet)	barrier a / Li 68.0 62.1 63.1 70.0	0.34 0.36 0.36 attenu eq Ev	uation) rening 66.2 55.8 54.0 66.8	-1.20 -1.20 -1.20 <i>Leq</i> 65	-4.1 -5.7 Night 60.2 54.2 55.3 62.2 dBA	66 0.0 67 0.0 68. 68. 62. 63. 70. 60 dBA	000 000 000 8 7 6		0.000 0.000 0.000 EL 69.4 62.9 63.8 71.2
Vehicle Type Autos: Medium Trucks: Heavy Trucks: Unnitigated Nois Vehicle Type Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	REMEL 68.46 79.45 84.25 e Levels (with Leq Peak Hou 69 63 64 71	Traffic Flow           2.28           -14.96           -18.91           out Topo and           r	barrier a / L/ 68.0 62.1 63.1 70.0	0.34 0.36 0.36 attenu eq Ev	uation) rening 66.2 55.8 54.0 66.8	-1.20 -1.20 -1.20 <i>Leq</i> 65	-4.1 -4.1 -5.7 Night 60.2 54.2 55.3 62.2	36         0.1           37         0.1           40         0.1            68.           62.         63.           70.         70.	000 000 000 8 7 6	CNE	0.000 0.000 0.000 <u>69.4</u> 63.8 71.2 BA

Friday, November 22, 2019

Friday, November 22, 2019

	FHV	WA-RD-77-108	HIGH	WAY NO	DISE PF	REDICTIO	N MODE	L					
Scenario: Horizon Year 2035 Road Name: Temescal Cyn. Rd. Road Segment: s/o Cajalco Rd.					Project Name: Bedford Marketplace Job Number: 12751								
	SPECIFIC IN	IPUT DATA						DEL INPUT	s				
Highway Data				S	ite Con	ditions (H	lard = 10	, Soft = 15)					
Peak Hour	Traffic (Adt): Percentage: our Volume:	21,000 vehicles 10% 2,100 vehicles				dium Truck avy Trucks	ks (2 Axle	,					
Vel	hicle Speed:	45 mph			ehicle	Mix							
Near/Far Lar	ne Distance:	51 feet		V		icleType	Da	y Evening	Night	Dailv			
Site Data					, on			.5% 12.9%	9.6%	. ,			
Par	rier Heiaht:	0.0 feet			М	edium Trud	cks: 84	.8% 4.9%	10.3%	1.84%			
Barrier Type (0-Wa		0.0			I	Heavy True	cks: 86	.5% 2.7%	10.8%	0.74%			
Centerline Dis		53.0 feet		N	loise So	ource Elev	ations (i	in feet)					
Centerline Dist. t	to Observer:	53.0 feet				Autos:	0.000	)		-			
Barrier Distance t	to Observer:	0.0 feet			Mediu	m Trucks:	2 297	,					
Observer Height (/	Above Pad):	5.0 feet			Heav	vy Trucks:	8.006	Grade Ad	iustment.	: 0.0			
	ad Elevation:	0.0 feet											
Roa	ad Elevation:	0.0 feet		L	ane Eq	uivalent D	)istance	(in feet)					
F	Road Grade:	0.0%				Autos:	46.731						
	Left View:	-90.0 degre				m Trucks:	46.541						
	Right View:	90.0 degre	es		Heav	y Trucks:	46.559	9					
FHWA Noise Mode	el Calculation	IS								-			
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresnel	Barrier Att	en Ber	rm Atten			
Autos:	68.46	1.27		0.34		-1.20	-4.	66 0.0	000	0.000			
Medium Trucks:	79.45			0.36		-1.20			000	0.000			
Heavy Trucks:	84.25	-19.92		0.36		-1.20	-5.	40 0.0	000	0.000			
Unmitigated Noise						_							
	Leq Peak Hou			Leq Eve		Leq Ni	~	Ldn	-	NEL			
Autos:		3.9	67.0		65.2		59.1	67.8	-	68.4			
Medium Trucks:		62.6 61.1			54.8		53.2 61.7			61.9			
Heavy Trucks: 63.5		62.1	53.0				62.6		62.8				
Vehicle Noise:		).7	69.0		65.8		61.1	69.7	7	70.1			
Centerline Distance	ce to Noise C	ontour (in feet	)										
			L	70 d		65 dE		60 dBA		dBA			
			Ldn:	50		109			234 505				
		С	NEL:	54		117		251	5	542			

	FHW	/A-RD-77-108 F	IIGHWA	Y NO	ISE PREDIC	ION MO	DDEL						
Scenario: Horizon Year 2035 Road Name: California Av. Road Segment: w/o Masters Dr.					Project Name: Bedford Marketplace Job Number: 12751								
SITE SI	PECIFIC IN	PUT DATA				NOISE	MODE	L INPUT	s				
Highway Data				Si	te Condition:	(Hard	= 10, S	oft = 15)					
Average Daily Tr	affic (Adt):	8,300 vehicles					Autos	: 15					
Peak Hour Pe	, ,	10%			Medium T	ucks (2	Axles):	15					
Peak Hou	ır Volume:	830 vehicles			Heavy Tru	icks (3+	Axles).	15					
Vehi	cle Speed:	40 mph		14	hicle Mix								
Near/Far Lane	Distance:	14 feet		Ve	VehicleTyp	~	Dav	Evening	Night	Daily			
Site Data				_	venicieryp	Autos:	77.5%	•	9.6%				
				_	Medium		84.8%		10.3%	1.849			
	er Height:	0.0 feet			Heavy				10.3%				
Barrier Type (0-Wal		0.0							10.070	0.747			
Centerline Dist.		34.0 feet		No	oise Source E	levatio	ns (in f	eet)					
Centerline Dist. to Barrier Distance to		34.0 feet			Aut	os: 0	.000						
		0.0 feet			Medium Trucks: 2.297								
Observer Height (Al	,	5.0 feet			Heavy Truc	ks: E	.006	Grade Adj	ustment:	0.0			
	Elevation: Elevation:	0.0 feet		1.	no Equivalo	t Dicta	nco (in	foot)					
	Elevation: bad Grade:	0.0 feet 0.0%		Le	Lane Equivalent Distance (in feet) Autos: 33.645								
R	I eft View:				Medium Trucks: 33.381								
ŀ	Right View:	-90.0 degrees 90.0 degrees			Heavy Truc		3.407						
FHWA Noise Model	Calculation					_							
VehicleType	REMEL	Traffic Flow	Distan	ce	Finite Road	Fres	inel	Barrier Att	en Ber	m Atten			
Autos:	66.51	-2.25		2.48	-1.20		-4.53	0.0	000	0.00			
Medium Trucks:	77.72	-19.49		2.53	-1.20		-4.86		000	0.00			
Heavy Trucks:	82.99	-23.44		2.52	-1.20		-5.67	0.0	000	0.00			
Unmitigated Noise	Levels (with	out Topo and b	arrier a	ttenu	ation)								
,	eq Peak Hou			q Eve	0	Night		Ldn		VEL			
Autos:	65.		3.6		61.9	55		64.4		65.			
Medium Trucks:	59.				51.7	50.1		58.6		58.			
Heavy Trucks:	60.		59.5		50.4	51.7		60.0		60.			
Vehicle Noise:	67.		5.8		62.5	58	.0	66.5	5	67.			
Centerline Distance	to Noise Co	ntour (in feet)											
				70 dE		dBA		60 dBA		dBA			
			dn:	20		43		93		00			
		CN	FI:	21		46		99	2	14			

	FHV	/A-RD-77-108	HIGHW.	AY NO	ISE PF	REDICTIO	ON MC	DEL					
Scenario: Horizon Year 2035 Road Name: California Av. Road Segment: e/o Masters Dr.					Project Name: Bedford Marketplace Job Number: 12751								
	SPECIFIC IN	PUT DATA							L INPUT	s			
Highway Data				Si	te Con	ditions (	Hard :	= 10, So	oft = 15)				
Average Daily	Traffic (Adt): 1	0,800 vehicle	s					Autos:	15				
Peak Hour	Percentage:	10%			Me	dium Tru	cks (2	Axles):	15				
Peak H	lour Volume:	1,080 vehicle	s		He	avy Truci	ks (3+	Axles):	15				
Ve	hicle Speed:	40 mph		Ve	hicle l	Mix							
Near/Far La	ne Distance:	14 feet			Veh	icleType	1	Day	Evening	Night	Daily		
Site Data						A	utos:	77.5%	12.9%	9.6%	97.429		
Ba	rrier Height:	0.0 feet			Me	edium Tri	ucks:	84.8%	4.9%	10.3%	1.84%		
Barrier Type (0-W	/all, 1-Berm):	0.0			ŀ	leavy Tri	ucks:	86.5%	2.7%	10.8%	0.74%		
Centerline Di		34.0 feet		No	oise Sc	ource Ele	evatio	ns (in fe	et)				
Centerline Dist.		34.0 feet				Autos	: 0	.000	,				
Barrier Distance	to Observer:	0.0 feet			Mediu	n Trucks	2	.297					
Observer Height (Above Pad): 5.0 feet					Heavy Trucks: 8,006 Grade Adjustment: 0.0								
	ad Elevation:	0.0 feet											
	ad Elevation:	0.0 feet		La	Lane Equivalent Distance (in feet)								
	Road Grade:	0.0%				Autos		.645					
	Left View:	-90.0 degree	es			n Trucks		.381					
	Right View:	90.0 degree	es		Heav	y Trucks	: 33	.407					
FHWA Noise Mod	el Calculation	s											
VehicleType	REMEL	Traffic Flow	Distar	nce	Finite	Road	Fres	nel	Barrier Att	en Ber	m Atten		
Autos:	66.51	-1.11		2.48		-1.20		-4.53	0.0	000	0.00		
Medium Trucks:		-18.34		2.53		-1.20		-4.86	0.0	000	0.00		
Heavy Trucks:	82.99	-22.30		2.52		-1.20		-5.67	0.0	000	0.00		
Unmitigated Nois								_					
VehicleType	Leq Peak Hou			eq Eve	~	Leq I	· ·		Ldn		NEL		
Autos:			64.8		63.0		57.	-	65.	-	66.		
Medium Trucks:				52.8		• · · •		-	59.7		60.		
Heavy Trucks:		2.0 60.6		51.6		52.8		-	61.2		61.		
Vehicle Noise:	68	.7	67.0		63.7		59.	.2	67.	7	68.		
	ce to Noise Co	ontour (in feet	)	70 . 20		05	0.4		0.0		-10.4		
Centerline Distan			1	70 dB	64	65 c	ıВA	6	0 dBA	55	dBA		
Centerline Distan			느	0.4							0.0		
Centerline Distan			Ldn: VFL:	24 26	1	5 5!			111 118	_	38 55		

	FHV	VA-RD-77-108 I	HIGHWA	Y NOISE P	REDICT		EL	_	_	_		
Road Nam	io: Horizon Ye e: El Cerrito F nt: w/o Bedfor	Rd.				Name: B lumber: 1		d Marketpl	ace			
	SPECIFIC IN	IPUT DATA						INPUTS	5			
Highway Data				Site Cor	nditions	(Hard = 1	10, So	ft = 15)				
Average Daily	Traffic (Adt):	29,000 vehicles				A	utos:	15				
Peak Hour	Percentage:	10%		Me	edium Tru	ucks (2 A)	xles):	15				
Peak H	lour Volume:	2,900 vehicles		He	avy Truc	cks (3+ A	xles):	15				
Ve	hicle Speed:	40 mph		Vehicle	Misc							
Near/Far La	ne Distance:	36 feet					Davi	Evening	Night	Dailu		
Site Data				ver	nicleType		Day 77.5%	Evening	9.6%	Daily		
					ر ledium T		34.8%	12.9% 4.9%	9.6%	97.42% 1.84%		
	rrier Height:	0.0 feet			Heavy T		36.5%		10.3%	0.74%		
Barrier Type (0-W		0.0			neavy 1	IUCKS. C	50.3%	2.170	10.0%	0.74%		
Centerline Dis		44.0 feet		Noise S	ource E	levations	(in fe	et)				
Centerline Dist.		44.0 feet			Auto	s: 0.0	00					
Barrier Distance		0.0 feet		Medium Trucks: 2.297								
Observer Height (	,	5.0 feet		Hea	vy Truck	s: 8.0	06	Grade Adj	ustment:	0.0		
	ad Elevation:	0.0 feet										
Road Elevation: 0.0 feet				Lane Eq		t Distanc		eet)				
	Road Grade:	0.0%			Auto							
	Left View:	-90.0 degree			m Truck							
	Right View:	90.0 degree	s	Hea	vy Truck	s: 40.2	62					
FHWA Noise Mod	el Calculation	s										
VehicleType	REMEL	Traffic Flow	Distanc	e Finite	Road	Fresne	el L	Barrier Atte	en Ber	m Atten		
Autos:	66.51	3.18		1.28	-1.20	-	4.61	0.0	00	0.000		
Medium Trucks:	77.72	-14.05		1.31	-1.20	-	4.87	0.0	00	0.000		
Heavy Trucks:	82.99	-18.01		1.31	-1.20	-	5.50	0.0	00	0.000		
Unmitigated Noise	e Levels (with	out Topo and L	oarrier at	tenuation)								
VehicleType	Leq Peak Hou	ır Leq Day	Leo	q Evening	Leq	Night		Ldn	CI	VEL		
Autos:	69	0.8 6	7.9	66.1		60.1		68.7		69.3		
Medium Trucks:	63	1.8 6	2.3	55.9	1	54.4		62.8	3	63.1		
Heavy Trucks:	65	i.1 6	3.7	54.6	i	55.9		64.2	2	64.4		
Vehicle Noise:	71	71.8 70.1		66.8	62.2		2 70.8		3	71.2		
Centerline Distan	ce to Noise C	ontour (in feet)										
				70 dBA		dBA		0 dBA		dBA		
		L	dn:	50	1	07		230	4	95		
		CN	EL:	53	1	14		246	5	30		

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FH	WA-RD-77-108	B HIGH	WAY NO	OISE PF	REDICTI	ON MOD	EL			
Scenario: Horizon Y Road Name: El Cerrito Road Segment: e/o Bedfor	Rd.					Name: E umber: 1		arketplac	e	
SITE SPECIFIC I	NPUT DATA				N	OISE M	ODEL II	NPUTS		
Highway Data			S	Site Con	ditions	(Hard = :	10, Soft =	= 15)		
Average Daily Traffic (Adt): Peak Hour Percentage: Peak Hour Volume:	35,100 vehicle 10% 3,510 vehicle					A Icks (2 A ks (3+ A	kles):	15 15 15		
Vehicle Speed:	40 mph			/ehicle l	Mise					
Near/Far Lane Distance:	36 feet				icleType		Dav Ev	ening N	light	Dailv
Site Data				10/1				12.9%	9.6%	97.42%
Barrier Height:	0.0 feet			Me	edium Tr	ucks: 8	34.8%	4.9% 1	0.3%	1.84%
Barrier Type (0-Wall, 1-Berm):	0.0			ŀ	leavy Tr	ucks: 8	86.5%	2.7% 1	0.8%	0.74%
Centerline Dist. to Barrier:	44.0 feet		٨	loise Sc	ource El	evations	(in feet)			
Centerline Dist. to Observer:	44.0 feet				Autos	s: 0.0	00			
Barrier Distance to Observer:	0.0 feet			Mediur	n Trucks	: 2.2	97			
Observer Height (Above Pad):	5.0 feet			Heav	y Trucks	: 8.0	06 Gra	ade Adjus	tment:	0.0
Pad Elevation:	0.0 feet		,	one Fa	ukualant	Distanc	e (in feet			
Road Elevation:	0.0 feet		L	ane Eq	Autos			)		
Road Grade:	0.0%			Madiu	n Trucks					
Right View:	-90.0 degre 90.0 degre				y Trucks					
FHWA Noise Model Calculation	15									
VehicleType REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresne	el Bar	rier Atten	Berr	n Atten
Autos: 66.51	4.01		1.28		-1.20	-	4.61	0.000	)	0.000
Medium Trucks: 77.72			1.31		-1.20		4.87	0.000		0.000
Heavy Trucks: 82.99			1.31		-1.20	-	5.50	0.000	)	0.000
Unmitigated Noise Levels (with										
VehicleType Leq Peak Ho			Leq Ev	~	Leq I	•	Ld		CN	IEL
	0.6	68.7		66.9		60.9		69.5		70.1
	4.6	63.1		56.7		55.2		63.6		63.9
	5.9 2.6	64.5		55.5		56.7		65.1		65.2
	2.0	70.9		67.6		63.1		71.6		72.0
Centerline Distance to Noise C	ontour (in fee	t)	70 d	BA	65 (	1RA	60 d	BA	55	dBA
		Ldn:	56		12		26			32
	C	NEL:	60		13		27		-	02

	FHW	/A-RD-77-108	HIGH	IWAY NO	DISE PREI	DICTI	ON MODEI	-		
Scenari	o: Horizon Yea	ar 2035			Pi	oject	Name: Bec	ford Marketpl	ace	
Road Nam	e: El Cerrito R	d.				lob N	umber: 127	51		
Road Segmer	nt: e/o I-15 SB	Ramps								
	SPECIFIC IN	PUT DATA						DEL INPUT	S	
Highway Data				S	ite Condi	ions	(Hard = 10,	Soft = 15)		
Average Daily	Traffic (Adt): 2	7,100 vehicle	s				Aut	os: 15		
Peak Hour	Percentage:	10%			Mediu	m Tri	ıcks (2 Axle	s): 15		
Peak H	our Volume:	2,710 vehicle	s		Heavy	/ Truc	ks (3+ Axle	s): 15		
Vel	hicle Speed:	40 mph		V	ehicle Mix					
Near/Far Lar	ne Distance:	36 feet			Vehicle		Da	v Evening	Night	Daily
Site Data					Venicie		Autos: 77	0	9.6%	
					1 de - 10		rucks: 84.		9.0% 10.3%	1.849
	rier Height:	0.0 feet								
Barrier Type (0-W		0.0			Hea	avy n	rucks: 86.	5% 2.7%	10.8%	0.74%
Centerline Dis		44.0 feet		N	oise Sour	ce E	evations (i	n feet)		
Centerline Dist.		44.0 feet				Auto	s: 0.000	,		
Barrier Distance	to Observer:	0.0 feet			Medium	Truck	s: 2.297			
Observer Height (	Above Pad):	5.0 feet			Heavy	Truck	s: 8.006	Grade Ad	ustment:	0.0
	d Elevation:	0.0 feet			,			,		
Roa	d Elevation:	0.0 feet		L	ane Equiv		t Distance (	in feet)		
F	Road Grade:	0.0%				Auto				
	Left View:	-90.0 degree	es		Medium	Truck	s: 40.241			
	Right View:	90.0 degree	es		Heavy	Fruck	s: 40.262			
FHWA Noise Mode	el Calculations									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite Ro	ad	Fresnel	Barrier Att	en Ben	n Atten
Autos:	66.51	2.89		1.28	-	1.20	-4.0	61 0.0	000	0.00
Medium Trucks:	77.72	-14.35		1.31	-	1.20	-4.8	37 0.0	000	0.00
Heavy Trucks:	82.99	-18.30		1.31	-	1.20	-5.8	50 0.0	000	0.00
Unmitigated Noise					,					
,1	Leq Peak Hou			Leq Eve	ů.	Leq	Night	Ldn		IEL
Autos:	69.		67.6		65.8		59.8	68.4		69.0
Medium Trucks:	63.		62.0		55.6		54.1	62.5		62.
Heavy Trucks:	64.	8	63.4		54.3		55.6	63.9	)	64.
Vehicle Noise:	71.	5	69.8		66.5		61.9	70.5	5	70.
Centerline Distance	e to Noise Co	ntour (in feet	)							
				70 dł			dBA	60 dBA		dBA
			Ldn: NFL:	47 51			02 09	220 235		73 07

FHWA-RD-77-108 HI	GHWAY NOISE	PREDICTION MC	DDEL		
Scenario: Horizon Year 2035 Road Name: El Cerrito Rd. Road Segment: e/o I-15 NB Ramps		Project Name: Job Number:	Bedford Marke 12751	etplace	
SITE SPECIFIC INPUT DATA		NOISE	MODEL INPU	JTS	
Highway Data	Site Co	onditions (Hard :	= 10, Soft = 15	)	
Average Daily Traffic (Adt): 17,200 vehicles			Autos: 15		
Peak Hour Percentage: 10%	L.	ledium Trucks (2	Axles): 15		
Peak Hour Volume: 1,720 vehicles	ŀ	leavy Trucks (3+	Axles): 15		
Vehicle Speed: 40 mph	Vehicle	Mix			
Near/Far Lane Distance: 36 feet		hicleType	Day Evenir	ng Night	Daily
Site Data		Autos:	77.5% 12.9	% 9.6%	6 97.429
Barrier Height: 0.0 feet		Medium Trucks:	84.8% 4.9	% 10.3%	6 1.849
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks:	86.5% 2.7	% 10.8%	6 0.749
Centerline Dist. to Barrier: 44.0 feet	Noise	Source Elevation	ns (in feet)		
Centerline Dist. to Observer: 44.0 feet	110.00		.000		
Barrier Distance to Observer: 0.0 feet	Med		.297		
Observer Height (Above Pad): 5.0 feet				Adjustmen	t: 0.0
Pad Elevation: 0.0 feet					
Road Elevation: 0.0 feet	Lane E	quivalent Dista			
Road Grade: 0.0%			.460		
Left View: -90.0 degrees			.241		
Right View: 90.0 degrees	не	avy Trucks: 40	.262		
FHWA Noise Model Calculations					
		e Road Fres			erm Atter
Autos: 66.51 0.92	1.28	-1.20	-4.61	0.000	0.00
Medium Trucks: 77.72 -16.32	1.31	-1.20	-4.87	0.000	0.00
Heavy Trucks: 82.99 -20.28	1.31	-1.20	-5.50	0.000	0.00
Unmitigated Noise Levels (without Topo and ba	1				
VehicleType Leq Peak Hour Leq Day	Leq Evening	Leq Night	Ldn		ONEL
Autos: 67.5 65.				6.4	67.
Medium Trucks: 61.5 60.				60.6	60.
Heavy Trucks: 62.8 61.				62.0	62.
Vehicle Noise: 69.5 67.	8 64	5 60	.0 6	68.5	68.
Centerline Distance to Noise Contour (in feet)		65 dBA	60 dBA	5	5 dBA
	70 dBA				
Centerline Distance to Noise Contour (in feet) Ldi CNEI	: 35	75 81	162 174		350 374

	FHW	A-RD-77-108	HIGHWA	Y NOISE F	REDICTI	ON MODI	EL		
Road Nam	o: Horizon Yea e: Eagle Glen F nt: e/o Masters	Pkwy.				Name: Be umber: 12	edford Market 2751	place	
SITE	SPECIFIC IN	PUT DATA			N	OISE MO	DDEL INPU	rs	
Highway Data				Site Co	nditions	(Hard = 1	0, Soft = 15)		
Average Daily	Traffic (Adt): 1	7,300 vehicles	3			A	utos: 15		
Peak Hour	Percentage:	10%		М	edium Tru	icks (2 Ax	<i>les):</i> 15		
Peak H	our Volume:	1,730 vehicles	6	Н	eavy Truc	ks (3+ Ax	les): 15		
Ve	hicle Speed:	40 mph		Vehicle	Mix				
Near/Far Lai	ne Distance:	36 feet			hicleType	0	ay Evening	Night	Daily
Site Data				VC			7.5% 12.9%		
				-	ر Nedium Ti		7.5% 12.9% 4.8% 4.9%		
	rier Height:	0.0 feet		~	Heavy Ti		4.0% 4.9% 6.5% 2.7%		
Barrier Type (0-W		0.0			neavy n	uchs. O	0.570 2.170	10.0	/0 0.7470
Centerline Dis		44.0 feet		Noise S	Source El	evations	(in feet)		
Centerline Dist.		44.0 feet			Auto	s: 0.00	0		
Barrier Distance		0.0 feet		Medi	um Truck	s: 2.29	7		
Observer Height (	,	5.0 feet		Hea	vy Truck	s: 8.00	6 Grade A	djustme	nt: 0.0
	d Elevation: d Elevation:	0.0 feet 0.0 feet		Lano E	nuivalon	Distance	(in foot)		
	a Elevation: Road Grade:	0.0 Teet		LaneL	Auto				
,	Road Grade: Left View:			Modi	Im Truck				
	Right View:	-90.0 degree 90.0 degree			vy Truck				
	Night view.	30.0 degree	:5	1100	ivy much	5. 40.20	2		
FHWA Noise Mod									
VehicleType		Traffic Flow	Distand		e Road	Fresne			erm Atten
Autos:	66.51	0.94		1.28	-1.20			.000	0.000
Medium Trucks:	77.72	-16.30		1.31	-1.20			.000	0.000
Heavy Trucks:	82.99	-20.25		1.31	-1.20	-8	5.50 0	.000	0.000
				,					
VehicleType	Leq Peak Hour	Leq Day	Lee	q Evening	Leq	Night	Ldn		CNEL
VehicleType Autos:	Leq Peak Hour 67.5	Leq Day	Lee 65.6	q Evening 63.	Leq	57.8	66	.4	67.0
VehicleType Autos: Medium Trucks:	Leq Peak Hour 67.9 61.9	Leq Day	65.6 60.0	q Evening 63. 53.	Leq 7	57.8 52.1	66 60	.4 .6	67.0 60.8
VehicleType Autos: Medium Trucks: Heavy Trucks:	Leq Peak Hour 67.5 61.5 62.8	Leq Day	Lee 65.6 60.0 61.4	g Evening 63.9 53.7 52.4	Leq 9 7 4	57.8 52.1 53.6	66 60 62	.4 .6 .0	67.0 60.8 62.1
VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	Leq Peak Hour 67. 61. 62. 69.	Leq Day	Lee 55.6 50.0 51.4 67.8	q Evening 63. 53.	Leq 9 7 4	57.8 52.1	66 60	.4 .6 .0	67.0 60.8 62.1
Autos: Medium Trucks: Heavy Trucks:	Leq Peak Hour 67. 61. 62. 69.	Leq Day	Lee 65.6 60.0 61.4 67.8	2 Evening 63. 53. 52. 64.	Leq 9 7 4 5	57.8 52.1 53.6 60.0	66 60 62 68	.4 .6 .0	67.0 60.8 62.1 69.0
VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	Leq Peak Hour 67. 61. 62. 69.	Leq Day	Lec 55.6 60.0 51.4 57.8 1	7 Evening 63. 53. 52. 64. 70 dBA	Leq 9 7 4 5 65	57.8 52.1 53.6 60.0	66 60 68 60 dBA	.4 .6 .0	67.0 60.8 62.1 69.0
VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	Leq Peak Hour 67. 61. 62. 69.	Leq Day	Lee 65.6 60.0 61.4 67.8	2 Evening 63. 53. 52. 64.	Leq 2 4 5 65 7	57.8 52.1 53.6 60.0	66 60 62 68	.4 .6 .0	67.0 60.8 62.1 69.0

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	FHW	A-RD-77-108	HIGHW	AY NO	DISE PR	REDICTI		DEL			
	e: Horizon Yea e: Eagle Glen t: e/o Bedford	Pkwy.					Name: I umber: 1		d Marketpl	ace	
SITE S	PECIFIC IN	PUT DATA				Ν	IOISE N	IODE	L INPUT	S	
Highway Data				S	ite Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily T Peak Hour F Peak Ho	Percentage:	0,600 vehicle: 10% 2,060 vehicle:					) Jcks (2 A cks (3+ A	/	15 15 15		
Veh	icle Speed:	45 mph		V	ehicle I	Mix					
Near/Far Lan	e Distance:	76 feet		-		icleType		Dav	Evening	Night	Daily
Site Data					von			77.5%	•	9.6%	
		0.0 feet			Me	dium Ti	rucks:	84.8%	4.9%	10.3%	
Barrier Type (0-Wa		0.0			F	leavy T		86.5%		10.8%	0.74%
Centerline Dist		65.0 feet		N	loise So	ource El	levations	; (in fe	et)		
Centerline Dist. to		65.0 feet				Auto	s: 0.0	00			
Barrier Distance to		0.0 feet			Mediur	n Truck	s: 2.2	97			
Observer Height (A	,	5.0 feet			Heav	y Truck	s: 8.0	06	Grade Adj	ustment	: 0.0
	d Elevation:	0.0 feet			5		Distant		(		
	d Elevation:	0.0 feet		L	ane Equ	Auto	t Distand		reet)		
R	oad Grade:	0.0%			Madium	Auto n Truck	02.0				
	Right View:	-90.0 degree 90.0 degree				y Truck	02.0				
FHWA Noise Mode	I Calculations	;									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresn	el	Barrier Att	en Be	rm Atten
Autos:	68.46	1.19		-0.48		-1.20		-4.70	0.0	000	0.000
Medium Trucks:	79.45	-16.05		-0.46		-1.20		4.88	0.0		0.000
Heavy Trucks:	84.25	-20.01		-0.46		-1.20		-5.30	0.0	000	0.000
Unmitigated Noise											
	Leq Peak Hour			eq Ev	~	Leq	Night		Ldn	-	NEL
Autos:	68.		66.1		64.3		58.2		66.9		67.5
Medium Trucks:	61.		60.2		53.9		52.3		60.8		61.0
Heavy Trucks:	62.	-	61.2		52.1		53.4		61.7		61.9
Vehicle Noise:	69.	-	68.1		64.9		60.2		68.8	5	69.2
Centerline Distance	e to Noise Co	ntour (in feet	,	70 d	BA	65	dBA	6	0 dBA	55	dBA
			Ldn:	54		1	16		250	{	539
		Cl	VEL:	58		1	25		268	ţ	578

	FHW	A-RD-77-108	HIGH	IWAY NO	DISE PRI	EDICT	ION MODE	L			
Scenari	o: Horizon Yea	r 2035			I	Project	Name: Be	dford M	larketpla	ace	
Road Nam	e: Cajalco Rd.					Job N	lumber: 12	751			
Road Segmer	nt: e/o I-15 SB	Ramps									
	SPECIFIC IN	PUT DATA					IOISE MO			5	
Highway Data				s	ite Cond	itions	(Hard = 10	), Soft =	= 15)		
Average Daily	Traffic (Adt): 2	4,900 vehicle	s				Au	tos:	15		
Peak Hour	Percentage:	10%			Med	ium Tr	ucks (2 Axl	es):	15		
Peak H	our Volume:	2,490 vehicle	s		Hea	vy Tru	cks (3+ Axl	es):	15		
Vel	hicle Speed:	45 mph		V	ehicle M	iv.					
Near/Far Lar	ne Distance:	76 feet		v		leType	e Da	NV EV	ening	Night	Daily
Site Data					Venic			,	12.9%	9.6%	
					Mor			.8%	4.9%	10.3%	1.849
	rier Height:	0.0 feet						.5%	2.7%	10.3%	0.749
Barrier Type (0-W		0.0				avy i	TUCKS. OU	.3%	2.170	10.0%	0.747
Centerline Dis		65.0 feet		N	loise Sou	ırce E	levations (	in feet)			
Centerline Dist.		65.0 feet				Auto	s: 0.00	C			
Barrier Distance		0.0 feet			Medium	Truck	s: 2.29	7			
Observer Height (	,	5.0 feet			Heavy	Truck	s: 8.00	6 Gra	ade Adji	ustment:	0.0
	d Elevation:	0.0 feet		_	,						
	d Elevation:	0.0 feet		L	ane Equ		t Distance		t)		
ŀ	Road Grade:	0.0%				Auto		-			
	Left View:	-90.0 degre	es		Medium						
	Right View:	90.0 degre	es		Heavy	Truck	s: 52.82	1			
FHWA Noise Mode	el Calculations										
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite F	Road	Fresnel	Bar	rrier Atte	en Ber	m Atten
Autos:	68.46	2.01		-0.48		-1.20	-4	.70	0.0	00	0.00
Medium Trucks:	79.45	-15.23		-0.46		-1.20	-4	.88	0.0	00	0.00
Heavy Trucks:	84.25	-19.18		-0.46		-1.20	-5	.30	0.0	00	0.00
Unmitigated Noise											
VehicleType	Leq Peak Hour	, ,		Leq Eve	•	Leq	Night	Ld			VEL
Autos:	68.		66.9		65.1		59.1		67.7		68.
Medium Trucks:	62.	-	61.1		54.7		53.1		61.6		61.
Heavy Trucks:	63.	4	62.0		53.0		54.2		62.6		62.
Vehicle Noise:	70.	6	68.9		65.7		61.1		69.6		70.
Centerline Distant	e to Noise Co	ntour (in feet	)								
			. L	70 di			dBA	60 d			dBA
			Ldn:	61		1	32	28	4	6	12
			NFI :	66			41	30		-	56

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	FHV	/A-RD-77-108	HIGHWA	AY N	OISE PR	EDICTIO	N MOD	EL			
Road Nam	io: Horizon Yea e: Cajalco Rd. nt: e/o I-15 NB					Project N Job Nui			d Marketpl	ace	
SITE	SPECIFIC IN	PUT DATA				NC	ISE M	ODE	L INPUTS	5	
Highway Data				\$	Site Con	ditions (H	lard = 1	10, So	oft = 15)		
Average Daily	Traffic (Adt): 3	0,700 vehicles	5				A	utos:	15		
Peak Hour	Percentage:	10%			Med	dium Truc	ks (2 A)	des):	15		
Peak H	our Volume:	3,070 vehicles	5		Hea	avy Truck	s (3+ A)	(les):	15		
Vei	hicle Speed:	45 mph			Vehicle I	Mix					
Near/Far Lar	ne Distance:	76 feet		- F		cleType	1	Dav	Evening	Night	Daily
Site Data					1011			7.5%	~		97.42%
	rier Height:	0.0 feet			Me	dium Tru		4.8%		10.3%	
Barrier Type (0-W		0.0 1001			F	leavy Tru	cks: 8	6.5%	2.7%	10.8%	0.74%
Centerline Dis		65.0 feet									
Centerline Dist.		65.0 feet			Noise So	urce Ele			eet)		
Barrier Distance		0.0 feet				Autos:					
Observer Height (	Above Pad):	5.0 feet				n Trucks:	2.2				
0 1	d Elevation:	0.0 feet			Heav	y Trucks:	8.0	06	Grade Adj	ustment	: 0.0
Roa	d Elevation:	0.0 feet		L	Lane Equ	uivalent L	Distanc	e (in	feet)		
1	Road Grade:	0.0%				Autos:	52.9	72			
	Left View:	-90.0 degree	s		Mediur	n Trucks:	52.8	04			
	Right View:	90.0 degree	s		Heav	y Trucks:	52.8	21			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distar	nce	Finite	Road	Fresne	e)	Barrier Atte	en Be	rm Atten
Autos:	68.46	2.92		-0.48	3	-1.20	-	4.70	0.0	00	0.000
Medium Trucks:	79.45	-14.32		-0.46	6	-1.20	-	4.88	0.0	00	0.000
Heavy Trucks:	84.25	-18.27		-0.46	6	-1.20	-	5.30	0.0	00	0.000
				atton	untion)						
Unmitigated Noise	e Levels (with	out Topo and	barrier a	allein	uauonij						NEL
VehicleType	Leq Peak Hou	r Leq Day	Le		/ening	Leq N	v		Ldn		
VehicleType Autos:	Leq Peak Hou 69	r Leq Day .7	Le 67.8		/ening 66.0	Leq N	60.0		68.6		69.2
VehicleType	Leq Peak Hou 69 63	r Leq Day .7 .5	67.8 62.0		<i>ening</i> 66.0 55.6	Leq N	60.0 54.1		68.6 62.5		69.2 62.8
VehicleType Autos: Medium Trucks: Heavy Trucks:	Leq Peak Hou 69	r Leq Day .7 .5	Le 67.8		/ening 66.0	Leq N	60.0		68.6		69.2 62.8
VehicleType Autos: Medium Trucks:	Leq Peak Hou 69 63	r Leq Day 7 5 .3	67.8 62.0		<i>ening</i> 66.0 55.6	Leq N	60.0 54.1		68.6 62.5		69.2 62.8 63.6
VehicleType Autos: Medium Trucks: Heavy Trucks:	Leq Peak Hou 69 63 64 71	r Leq Day 7 5 3 6	Le 57.8 52.0 52.9 59.8	eq Ev	vening 66.0 55.6 53.9 66.6		60.0 54.1 55.1 62.0		68.6 62.5 63.5 70.5		69.2 62.8 63.6 71.0
VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	Leq Peak Hou 69 63 64 71	r Leq Day 7. 5. 3. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5.	2.0 52.0 52.9 59.8	eq Ev 70 a	vening 66.0 55.6 53.9 66.6	65 dl	60.0 54.1 55.1 62.0		68.6 62.5 63.5 70.5	55	69.2 62.8 63.6 71.0
VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	Leq Peak Hou 69 63 64 71	r Leq Day 7. 5. 3. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5.	Le 57.8 52.0 52.9 59.8	eq Ev	vening 66.0 55.6 53.9 66.6 //BA		60.0 54.1 55.1 62.0 3A	(	68.6 62.5 63.5 70.5	55	69.2 62.8 63.6 71.0

	FHW	A-RD-77-108	HIGHV	VAY NC	DISE PR	EDICTI		EL			
Road Nan	rio: Horizon Yea ne: Cajalco Rd. nt: e/o Grand C						Name: E umber: 1		d Marketpl	ace	
SITE	SPECIFIC IN	PUT DATA				N	OISE N	ODE	L INPUT	s	
Highway Data				S	ite Con	ditions	(Hard =	10, So	oft = 15)		
Average Daily	Traffic (Adt): 1	9,000 vehicle	s				A	utos:	15		
	Percentage:	10%			Med	dium Tru	icks (2 A	xles):	15		
Peak H	our Volume:	1,900 vehicles	s		Hea	avy Truc	ks (3+ A	xles):	15		
Ve	hicle Speed:	45 mph		14	ehicle I	<i>Niv</i>					
Near/Far La	ne Distance:	76 feet				cleType		Day	Evening	Night	Daily
Site Data					veni			77.5%	· ·	9.6%	
					M	ر dium Ti		7.5% 34.8%		9.6%	
	rrier Height:	0.0 feet				leavy Ti		36.5%		10.3%	
Barrier Type (0-V		0.0				ieavy II	uchs.	0.070	2.170	10.070	0.7470
Centerline Di		65.0 feet		N	oise So	ource El	evations	(in fe	eet)		
Centerline Dist.		65.0 feet				Auto	s: 0.0	00			
Barrier Distance		0.0 feet 5.0 feet			Mediur	n Truck	s: 2.2	97			
Observer Height	(Above Pad): ad Elevation:	0.0 feet			Heav	y Truck	s: 8.0	06	Grade Adj	ustmen	: 0.0
	ad Elevation: ad Elevation:	0.0 feet		1	ano Fai	uivalon	Distanc	o (in	foot)		
	au Elevalion. Road Grade:	0.0%		-	une Equ	Auto					
	Left View:	-90.0 degree			Modiur	n Truck					
	Right View:	90.0 degree				y Truck					
	rugin nom.	00.0 009.00				,					
FHWA Noise Mod	lel Calculation	5									
			Diet								
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite		Fresn	e/	Barrier Att	en Be	rm Atten
Autos:	68.46	0.84	Disu	-0.48		-1.20		4.70	0.0	000	0.000
Autos: Medium Trucks:	68.46 79.45	0.84 -16.40	Disu	-0.48 -0.46		-1.20 -1.20		4.70 4.88	0.0 0.0	000	0.000
Autos:	68.46 79.45	0.84	Disu	-0.48		-1.20		4.70	0.0 0.0	000	0.000
Autos: Medium Trucks: Heavy Trucks:	68.46 79.45 84.25	0.84 -16.40 -20.36		-0.48 -0.46 -0.46		-1.20 -1.20		4.70 4.88	0.0 0.0	000	0.000
Autos: Medium Trucks: Heavy Trucks:	68.46 79.45 84.25	0.84 -16.40 -20.36 Dut Topo and	barrie	-0.48 -0.46 -0.46	ation)	-1.20 -1.20 -1.20		4.70 4.88	0.0 0.0	000	0.000
Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Nois</b>	68.46 79.45 84.25 <b>e Levels (with</b> Leq Peak Hou	0.84 -16.40 -20.36 <b>Dut Topo and</b> r Leq Day	barrie	-0.48 -0.46 -0.46 <b>attenu</b>	ation)	-1.20 -1.20 -1.20	-	4.70 4.88	0.0 0.0 0.0	000 000 000	0.000 0.000 0.000
Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Nois</b> VehicleType Autos: Medium Trucks:	68.46 79.45 84.25 <b>e Levels (with</b> Leq Peak Hou 67 61	0.84 -16.40 -20.36 <b>but Topo and</b> r Leq Day 6 4	<i>barriei</i> , 65.7 59.9	-0.48 -0.46 -0.46 <b>attenu</b>	<i>ation)</i> ening 64.0 53.5	-1.20 -1.20 -1.20	Night 57.9 52.0	4.70 4.88	0.0 0.0 0.0 <i>Ldn</i> 66.5 60.4	000 000 000 000 5 4	0.000 0.000 0.000 NEL 67.1 60.7
Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Nois</b> VehicleType Autos:	68.46 79.45 84.25 <b>e Levels (with</b> Leq Peak Hou 67 61	0.84 -16.40 -20.36 <b>but Topo and</b> r Leq Day 6 4	barrier	-0.48 -0.46 -0.46 <b>attenu</b>	ening 64.0	-1.20 -1.20 -1.20	Night 57.9	4.70 4.88	0.0 0.0 0.0 <i>Ldn</i> 66.5	000 000 000 000 5 4	0.000 0.000 0.000 NEL 67.1 60.7 61.5
Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Nois</b> VehicleType Autos: Medium Trucks:	68.46 79.45 84.25 e Levels (with Leq Peak Hou 67 61 61	0.84 -16.40 -20.36 <b>but Topo and</b> r Leq Day 6 4 2	<i>barriei</i> , 65.7 59.9	-0.48 -0.46 -0.46 <b>attenu</b>	<i>ation)</i> ening 64.0 53.5	-1.20 -1.20 -1.20	Night 57.9 52.0	4.70 4.88	0.0 0.0 0.0 <i>Ldn</i> 66.5 60.4	000 000 000 5 4	0.000 0.000 0.000 NEL 67.1 60.7 61.5
Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois Vehicle Type Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	68.46 79.45 84.25 <b>e Levels (with</b> Leg Peak Hou 67 61 62 69	0.84 -16.40 -20.36 <b>Dut Topo and</b> r Leq Day 6 4 2 5	barrier 65.7 59.9 60.8 67.7	-0.48 -0.46 -0.46 <b>attenu</b>	ening 64.0 53.5 51.8	-1.20 -1.20 -1.20	Night 57.9 52.0 53.0	4.70 4.88	0.0 0.0 <i>Ldn</i> 66.5 60.4 61.4	000 000 000 5 4	0.000 0.000 0.000 NEL 67.1 60.7 61.5
Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois Vehicle Type Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	68.46 79.45 84.25 <b>e Levels (with</b> Leg Peak Hou 67 61 62 69	0.84 -16.40 -20.36 <b>Dut Topo and</b> r Leq Day 6 4 2 5	barrier 65.7 59.9 60.8 67.7	-0.48 -0.46 -0.46 <b>attenu</b>	ening 64.0 53.5 51.8 64.6	-1.20 -1.20 -1.20 <i>Leq</i>	Night 57.9 52.0 53.0	4.70 4.88 5.30	0.0 0.0 <i>Ldn</i> 66.5 60.4 61.4	000 000 000 000 5 4 4	0.000 0.000 0.000 NEL 67.1 60.7 61.5
Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks:	68.46 79.45 84.25 <b>e Levels (with</b> Leg Peak Hou 67 61 62 69	0.84 -16.40 -20.36 but Topo and r Leq Day 6 4 2 5 ntour (in feet	barrier 65.7 59.9 60.8 67.7	-0.48 -0.46 -0.46 <i>attenu</i> Leq Eve	ening 64.0 53.5 51.8 64.6 BA	-1.20 -1.20 -1.20 <i>Leq</i>	Night 57.9 52.0 53.0 59.9	4.70 4.88 5.30	0.0 0.0 0.0 66.5 60.2 61.2 68.4	000 000 000 5 4 4 4	0.000 0.000 0.000 WEL 67.1 60.7 61.5 68.9

Friday, November 22, 2019

Friday, November 22, 2019

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FHWA-R	D-77-108 HIGI	HWAY N	NOISE PR	EDICTIO	N MODEL		
Scenario: Horizon Year 20 Road Name: Cajalco Rd. Road Segment: e/o Temescal C					lame: Bed nber: 127	ford Marketpl 51	ace
SITE SPECIFIC INPUT	Γ DATA			NC	DISE MOD	EL INPUT	S
Highway Data			Site Con	ditions (H	lard = 10,	Soft = 15)	
· • • • • • • • • • • • • • • • • • • •	00 vehicles 10% 10 vehicles				Auto ks (2 Axles s (3+ Axles	s): 15	
Vehicle Speed: 4	15 mph	-	Vehicle I	<i>a</i>			
Near/Far Lane Distance: 7	6 feet	-		cleType	Dav	Evening	Night Daily
Site Data			10/1		itos: 77.5		9.6% 97.42%
Barrier Height:	0.0 feet		Me	edium Tru	cks: 84.8	3% 4.9%	10.3% 1.84%
	0.0		ŀ	leavy Tru	cks: 86.5	5% 2.7%	10.8% 0.74%
	5.0 feet		Noise So	urce Ele	vations (in	feet)	
	5.0 feet			Autos:	0.000	1	
	0.0 feet		Mediur	n Trucks:	2.297		
	5.0 feet		Heav	y Trucks:	8.006	Grade Adj	ustment: 0.0
	0.0 feet 0.0 feet	-	l ano Equ	uivalent l	Distance (i	n foot)	
	0.0%	-	Lane Ly	Autos:		in reety	
	0.0% 0.0 degrees		Modiur	n Trucks:	52.804		
	0.0 degrees			y Trucks:	52.821		
FHWA Noise Model Calculations							
VehicleType REMEL Tra	ffic Flow Di	istance	Finite	Road	Fresnel	Barrier Att	en Berm Atten
Autos: 68.46	2.82	-0.4	8	-1.20	-4.7	0.0	000.0 000
Medium Trucks: 79.45	-14.42	-0.4	6	-1.20	-4.8	8 0.0	000.0 000
Heavy Trucks: 84.25	-18.37	-0.4	6	-1.20	-5.3	0 0.0	0.000
Unmitigated Noise Levels (without )							
VehicleType Leq Peak Hour	Leq Day	Leq E	vening	Leq N	0	Ldn	CNEL
Autos: 69.6	67.7		65.9		59.9	68.5	
Medium Trucks: 63.4	61.9		55.5		54.0	62.4	
Heavy Trucks: 64.2 Vehicle Noise: 71.4	62.8		53.8 66.5		55.0 61.9	63.4	
			00.5		01.9	70.2	• 70.9
	ur (in feet)						
Centerline Distance to Noise Contor		70	dBA	65 di	BA	60 dBA	55 dBA
Centerline Distance to Noise Contou	Ldn:		dBA 39	65 dE 149		60 dBA 322	55 dBA 693

		/A-RD-77-108									
		ar 2035 Plus P	oject						d Marketpl	ace	
	e: Masters Dr.					Job N	lumber:	12751			
Road Segmer	t: n/o Californ	ia Av.									
	SPECIFIC IN	PUT DATA							L INPUT	S	
Highway Data				S	ite Con	ditions	(Hard =	10, Se	oft = 15)		
Average Daily	Traffic (Adt):	8,250 vehicles	6					Autos:			
Peak Hour	Percentage:	10%			Med	dium Tr	ucks (2 A	(xles):	15		
Peak H	our Volume:	825 vehicles	5		Hea	avy Tru	cks (3+ A	(xles):	15		
Vel	icle Speed:	40 mph		V	ehicle I	Niv					
Near/Far Lar	e Distance:	14 feet				cleType		Dav	Evening	Night	Daily
Site Data					VCIII			77.5%			97.429
					Me	dium T		84.8%		10.3%	
	rier Height:	0.0 feet				leavy T		86.5%		10.8%	
Barrier Type (0-Wa	. ,	0.0				icuvy i	ruons.	00.0 /	2.170	10.070	0.747
Centerline Dis		34.0 feet		N	oise So	urce E	levation	s (in f	eet)		
Centerline Dist. t		34.0 feet				Auto	s: 0.0	000			
Barrier Distance t		0.0 feet			Mediur	n Truck	s: 2.	297			
Observer Height (/		5.0 feet			Heav	y Truck	s: 8.	006	Grade Adj	iustment	0.0
	d Elevation:	0.0 feet			<b>F</b>		1 Distan		641		
	d Elevation:	0.0 feet		L	ane Equ		t Distan		reet)		
F	Road Grade:	0.0%				Auto					
	Left View:	-90.0 degree			Mediur						
	Right View:	90.0 degree	s		Heav	y Truck	s: 33.	407			
FHWA Noise Mode	Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fresr	el	Barrier Att	en Bei	m Atten
Autos:	66.51	-2.27		2.48		-1.20		-4.53	0.0	000	0.00
Medium Trucks:	77.72	-19.51		2.53		-1.20		-4.86	0.0	000	0.00
Heavy Trucks:	82.99	-23.47		2.52		-1.20		-5.67	0.0	000	0.00
Unmitigated Noise	Levels (with	out Topo and	barrie	er attenu	ation)						
VehicleType	Leq Peak Hou	r Leq Day		Leq Eve	ening	Leq	Night		Ldn	С	NEL
Autos:	65.	.5	53.6		61.8		55.8	i	64.4	ļ	65.
Medium Trucks:	59.	.5	58.0		51.7		50.1		58.6	6	58.
Heavy Trucks:	60.	.8	59.4		50.4		51.6	;	60.0	)	60.
Vehicle Noise:	67.	.5	65.8		62.5		58.0	)	66.5	5	67.
Centerline Distanc	e to Noise Co	ontour (in feet,	)								
				70 dl	BA	65	dBA	(	60 dBA	55	dBA
			l dn:	20			43		92	1	99
				20							

Scenario: Horizo	n Voo	r 2025 Plue P	rojoct			Project	Nomo	Rodfor	d Market			
Road Name: Maste		1 2035 Plus P	ojeci					12751	u warkey	Jace		
Road Seament: s/o Ca		- Av				<i>J00 N</i>	umper.	12/51				
				-								
SITE SPECIFI Highway Data	CIN	DATA			Site Cor				L INPUT	S		
Average Daily Traffic (A	44). (	9.668 vehicles	~		0.10 00.	antionio	(mar a	Autos:	,			
Peak Hour Percenta		10%	5		Ma	dium Tru	icks (2					
Peak Hour Volur		967 vehicles				avy Truc						
Vehicle Spe		40 mph	5				101 01	Auros).	10			
Near/Far Lane Distan		14 feet			Vehicle							
		14 1661			Veh	icleType		Day	Evening	~		aily
Site Data							Autos:	77.5%			5% 97.	
Barrier Heig	ht:	0.0 feet				edium Ti		84.8%				.84%
Barrier Type (0-Wall, 1-Ben	n):	0.0				Heavy T	rucks:	86.5%	2.7%	10.8	3% 0.	.74%
Centerline Dist. to Barr	ier:	34.0 feet		ł	Noise S	ource E	levatio	ns (in f	eet)			
Centerline Dist. to Observ	er:	34.0 feet		ł		Auto		0.000	/			
Barrier Distance to Observ	er:	0.0 feet			Modiu	m Truck		297				
Observer Height (Above Pa	d):	5.0 feet				v Truck		3.006	Grade A	liustme	ent: 0.0	)
Pad Elevati	on:	0.0 feet										
Road Elevati	on:	0.0 feet			Lane Eq				feet)			
Road Gra		0.0%				Auto		3.645				
Left Vi	ew:	-90.0 degree				m Truck		3.381				
Right Vie	ew:	90.0 degree	es		Hear	y Truck	s: 33	3.407				
FHWA Noise Model Calcula	ations											
VehicleType REME	L	Traffic Flow	Dis	tance	Finite	Road	Fres	snel	Barrier A	ten l	Berm A	tten
Autos: 6	6.51	-1.59		2.4	8	-1.20		-4.53	0	000	C	0.00
Medium Trucks: 7	7.72	-18.82		2.5	53	-1.20		-4.86	0	000	C	0.00
Heavy Trucks: 8	2.99	-22.78		2.5	52	-1.20		-5.67	0	000	C	0.00
Unmitigated Noise Levels	witho	ut Topo and	barrie	er atter	nuation)							
VehicleType Leq Peal	k Hour	Leq Day	'	Leq E	vening	Leq	Night		Ldn		CNEL	
Autos:	66.2	2	64.3		62.5		56	.5	65	.1		65.
Medium Trucks:	60.2	2	58.7		52.4		50	.8	59	.3		59.
Heavy Trucks:	61.5	5	60.1		51.1		52	.3	60	.7		60.
Vehicle Noise:	68.2	2	66.5		63.2		58	.7	67	.2		67.
Centerline Distance to Noi	se Col	ntour (in feet	)									
				70	dBA	65	dBA	6	60 dBA		55 dBA	1
			Ldn:	2	22	4	8		103		221	

Site Data         Autos:         77.5%         12.9%         9.6%         97.4%           Barrier Height:         0.0         feet         Medium Trucks:         84.8%         4.9%         10.3%         1.8%           Barrier Height:         0.0         Genterline         Dist.         Barrier:         34.0         feet           Centerline Dist.         Desrver:         34.0         feet         Moise Source Elevations (in feet)           Observer Height (Above Pad):         5.0         feet         Moise Source (in feet)         Autos:         0.00           Road Grade         0.0%         Left View:         -90.0         degrees         Medium Trucks:         33.865           Road Grade         0.0%         Left View:         -90.0         degrees         Finite Road         Fresnel         Barrier Atten         Berner Atten           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berner Atten           Autos:         77.7         2.52         -1.20         -4.63         0.000         0.0           Heavy Trucks:         83.05         Contesting and		FHV	VA-RD-77-108	HIGHW	AY NC	DISE PF	REDICTI	ON MC	DEL			
Highway Data         Site Conditions (Hard = 10, Soft = 15)           Average Daily Traffic (Adt):         7,690 vehicles         Autos::         15           Peak Hour Percentage:         10%         Medium Trucks (2 Avles):         15           Peak Hour Volume:         769 vehicles         Medium Trucks (2 Avles):         15           Vehicle Speed:         40 mph         Vehicle Mix         Vehicle Mix           Site Data         Autos:         77.5%         12.9%         9.6%         97.4'           Barrier Height:         0.0 feet         Autos:         0.1%         Medium Trucks:         84.8%         4.9%         10.3%         1.8           Barrier Dist. to Disserver:         34.0 feet         Autos:         0.000         Medium Trucks:         2.27%         10.8%         0.7'           Observer Height (Above Pac):         5.0 feet         Heavy Trucks:         8.06         Grade Adjustment:         0.0           Road Grade:         0.0%         Left View:         -90.0 degrees         Right View:         90.0 degrees         Heavy Trucks:         33.45           Heavy Trucks:         8.056         2.48         -1.20         -4.53         0.000         0.0           Medium Trucks:         77.7         -19.82         2.53 <th>Road Nam</th> <th>e: Masters Dr</th> <th></th> <th>roject</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>d Marketp</th> <th>lace</th> <th></th>	Road Nam	e: Masters Dr		roject						d Marketp	lace	
Average Daily Traffic (Adt):         7,690 vehicles         Autos:         15           Peak Hour Percentage:         10%         Medium Trucks (2 Axles):         15           Peak Hour Vercentage:         10%         Heavy Trucks (2 Axles):         15           Vehicle Speed:         40 mph         Heavy Trucks (2 Axles):         15           Vehicle Speed:         40 mph         Heavy Trucks (3 + Axles):         15           Site Data         Autos:         7,5%         12.9%         9,6%         97,4           Barrier Type (0-Wall, 1-Berm):         0.0         feet         Medium Trucks:         84.8%         4.9%         10.3%         1.8           Barrier Type (0-Wall, 1-Berm):         0.0         feet         Medium Trucks:         84.8%         4.9%         10.3%         1.8           Barrier Distance to Observer:         0.0 feet         Motise Source Elevations (in feet)         Autos:         0.00         0.0           Road Grade:         0.0%         Left View:         90.0 degrees         Medium Trucks:         33.381         Heavy Trucks:         33.331           Heavy Trucks:         7.72         -19.82         2.53         -1.20         -4.66         0.000         0.0           Medium Trucks:         82.99		SPECIFIC IN	IPUT DATA								s	
Notage Data         Medium Trucks (2 Axles):         15           Peak Hour Volume:         769 vehicles         Heavy Trucks (3 + Axles):         15           Vehicle Speed:         40 mph         Vehicle Mix         Vehicle Mix         Vehicle Mix           Site Data         Autos:         77.5%         12.9%         9.6%         97.42           Barrier Height:         0.0 feet         Autos:         77.5%         12.9%         9.6%         97.42           Barrier Height:         0.0 feet         Autos:         77.5%         12.9%         9.6%         97.42           Barrier Type (0-Wall, 1-Berm):         0.0         feet         Medium Trucks:         84.8%         4.9%         10.3%         1.8           Barrier Distance to Observer:         34.0 feet         Moise Source Elevations (in feet)         Autos:         0.000         Autos:         0.000         Medium Trucks:         8.066         Grade Adjustment:         0.0           Observer Height (Above Pad):         5.0 feet         Heavy Trucks:         8.066         Grade Adjustment:         0.0           Road Grade:         0.0%         Autos:         33.445         Heavy Trucks:         33.445           VehicleType         REMEL         Trafic Flow         Distance	Highway Data				S	ite Con	ditions	(Hard =	: 10, So	oft = 15)		
Peak Hour Volume:         769 vehicles           Vehicle Speed:         40 mph           Near/Far Lane Distance:         14 feet           Site Data         Vehicle Mix           Barrier Height:         0.0 feet           Barrier Height:         0.0 feet           Barrier Dist. to Observer:         34.0 feet           Centerline Dist. to Observer:         34.0 feet           Barrier Distance to Observer:         0.0 feet           Road Grade.         0.0%           Pad Elevation:         0.0 feet           Road Grade.         0.0%           Autos:         7.000           Pad Elevation:         0.0 feet           Road Grade.         0.0%           Autos:         7.000           Road Grade.         0.0%           Autos:         33.81           Heavy Trucks:         33.81           Heavy Trucks:         33.845           Kehicle Type         Refile: Flow           Distance         Finite Road           Right View:         90.0 degrees           FHWA Noise Model Calculations         Finite Road           Vehicle Type         REMEL           Traffic Flow         Distance           Vehicle Type	Average Daily	Traffic (Adt):	7,690 vehicle	s					Autos:	15		
Vehicle Speed: Near/Far Lane Distance:         40 mph 14 feet         Vehicle Mix           Site Data         Autos:         77.5%         12.9%         9.6%         97.4%           Barrier Height:         0.0 feet         Autos:         77.5%         12.9%         9.6%         97.4%           Barrier Type (0-Wall, 1-Bern):         0.0         feet         Medium Trucks:         84.8%         4.9%         0.3%         1.8           Barrier Type (0-Wall, 1-Bern):         0.0         feet         Medium Trucks:         86.5%         2.7%         10.8%         0.74           Centerline Dist. to Dserver:         3.0 feet         Moles         Observer Height:         0.0 feet         Autos:         0.006         Grade Adjustment:         0.0           Road Grade:         0.0%         Left View:         90.0 degrees         Medium Trucks:         8.006         Grade Adjustment:         0.0           FHWA Noise Model Calculations         VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Bern Atten           Autos:         66.51         -2.58         2.48         -1.20         -4.53         0.000         0.0           Medium Trucks:         82.99         -23.77	Peak Hour	Percentage:	10%			Me	dium Tru	icks (2	Axles):	15		
Near/Far Lane Distance:         14 feet         Vehicle Mix         Day         Evening         Night         Dail           Site Data         Autos:         77.5%         12.9%         9.6%         97.4%           Barrier Height:         0.0 feet         Autos:         77.5%         12.9%         9.6%         97.4%           Barrier Height:         0.0         Centerline Dist. to Barrier:         34.0 feet         Medium Trucks:         84.8%         4.9%         10.3%         1.8           Barrier Distance to Observer:         34.0 feet         Autos:         0.000         Medium Trucks:         8.29%         2.7%         10.8%         0.7           Observer Height (Above Pad):         5.0 feet         Heavy Trucks:         8.006         Grade Adjustment:         0.0           Road Grade:         0.0%         Autos:         33.845         Medium Trucks:         33.381         Heavy Trucks:         33.381           FHWA Noise Model Calculations         VehicleType         Rebust         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berrier Atten         Medium Trucks:         33.381           Heavy Trucks:         82.9         -2.58         2.48         -1.20         -4.53         0.000	Peak H	our Volume:	769 vehicle	s		He	avy Truc	:ks (3+	Axles):	15		
Near/Far Lane Distance:         14 feet           VehicleType         Day         Evening         Night         Dail           Site Data         Autos:         77.5%         12.9%         9.6%         97.4%           Barrier Type (0-Wall, 1-Berm):         0.0 feet         Medium Trucks:         84.9%         4.9%         10.3%         1.8%           Barrier Type (0-Wall, 1-Berm):         0.0 feet         Medium Trucks:         86.5%         2.7%         10.3%         0.7           Centerline Dist. to Diserver:         34.0 feet         Autos:         0.00         Medium Trucks:         8.06%         Grade         0.7           Deserver Height (Above Pad):         5.0 feet         Pad Elevation:         0.0 feet         Autos:         0.000         Medium Trucks:         8.006         Grade Adjustment:         0.0           Road Grade:         0.0%         Left View:         -90.0 degrees         Medium Trucks:         33.845         Medium Trucks:         33.81         Heavy Trucks:         80.00         0.00         0.00           FHWA Noise Model Calculations         YehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berrier Atten         Meavy Trucks:         80.00         0	Vel	hicle Speed:	40 mph		V	ehicle	Mix					
Barrier Height:         0.0 feet           Barrier Type (0-Wall, 1-Berm):         0.0           Centerline Dist. to Barrier:         34.0 feet           Barrier Distance to Observer:         0.0 feet           Road Grade         0.0%           Left View:         -90.0 degrees           Right View:         90.0 degrees           Vehicle Type         REMEL           Vehicle Type         REMEL           Traffic Flow         Distance           Vehicle Type         REMEL           Medium Trucks:         77.7           19.82         2.53           -1.20         -4.53           Medium Trucks:         82.99           -2.52         -1.20           Med	Near/Far Lar	ne Distance:	14 feet		-				Day	Evening	Night	Daily
Barrier Ties (IV)         0.0 teet         Heavy Trucks:         86.5%         2.7%         10.8%         0.7           Centerline Dist. to Doserver:         34.0 feet         Autos:         0.000         Meavy Trucks:         86.5%         2.7%         10.8%         0.74           Deserver Height (Above Pad):         5.0 feet         Autos:         0.000         Medium Trucks:         2.297           Observer:         0.0 feet         Road Girade:         0.0%         Autos:         33.645           Road Girade:         0.0%         Autos:         33.645         Autos:         33.845           Left View:         -90.0 degrees         Heavy Trucks:         33.845         Autos:         33.407           FHWA Noise Model Calculations         VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berner Atten           Autos:         66.51         -2.58         2.48         -1.20         -4.53         0.000         0.00           Medium Trucks:         82.99         -2.3.77         2.52         -1.20         -5.67         0.000         0.00           Unitigated Noise Levels (without Topo and barrier attenuation)         Leq Peak Hour         Leq Quy         Leq Evenin	Site Data						A	Autos:	77.5%	12.9%	9.6%	97.429
Barrier Type (0-Wall, 1-Bern):         0.0         Heavy Trucks:         86.5%         2.7%         10.8%         0.74           Centerline Dist. to Desriver:         34.0 feet         Autos:         0.000         Autos:         0.000         Autos:         0.000         Autos:         0.074           Desriver Height (Above Pad):         5.0 feet         Autos:         0.000         Medium Trucks:         2.297         Heavy Trucks:         3.060         Grade Adjustment:         0.0           Road Elevation:         0.0 feet         Road Grade:         0.0%         Autos:         33.381         Heavy Trucks:         33.381           FHWA Noise Model Calculations         Fresnel         Barrier Atten         Bern Atten         Autos:         366.51         -2.58         2.48         -1.20         -4.53         0.000         0.00           Heavy Trucks:         77.72         -19.82         2.53         -1.20         -4.66         0.000         0.00           Heavy Trucks:         65.2         63.3         61.5         55.5         64.1         6           Medium Trucks:         59.2         57.7<	Bar	rier Height:	0.0 feet			M	edium Tr	ucks:	84.8%	4.9%	10.3%	1.849
Centerline Dist. to Observer:         34.0 feet         Autos:         0.000           Barrier Distance to Observer:         0.0 feet         Autos:         0.000           Deserver Height (Above Pad):         5.0 feet         Moles:         0.000           Pad Elevation:         0.0 feet         Medium Trucks:         2.297           Road Grade:         0.0%         Lane Equivalent Distance (in feet)         Autos:         3.3.845           Road Grade:         0.0%         Autos:         3.3.845         Medium Trucks:         33.381           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnet         Barrier Atten         Bern Atten           VehicleType         REMEL         Traffic Flow         Distance         1.20         -4.53         0.000         0.00           Medium Trucks:         77.72         -19.82         2.53         -1.20         -4.66         0.000         0.00           Medium Trucks:         82.9         -23.77         2.52         -1.20         -4.66         0.000         0.00           Medium Trucks:         65.2         63.3         61.5         55.5         64.1         6           Medum Trucks:         59.2         57.7			0.0			ŀ	leavy Tr	ucks:	86.5%	2.7%	10.8%	0.749
Centerline Dist. to Observer:         0.4.0 feet         Autos:         0.000           Barrier Distance to Observer:         0.0 feet         Medium Trucks:         2.297           Observer Height (Above Pad):         5.0 feet         Heavy Trucks:         2.297           Pad Elevation:         0.0 feet         Heavy Trucks:         8.006         Grade Adjustment:         0.0           Road Elevation:         0.0 feet         Heavy Trucks:         33.3645         Medium Trucks:         33.381           Heavy Trucks:         8.006         Grade Clevations         VehicleType         Remer Atten         Berrier Atten         Berrier Atten           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berrier Atten           Autos:         66.51         -2.58         2.48         -1.20         -4.63         0.000         0.00           Medium Trucks:         77.72         -19.82         2.53         -1.20         -4.67         0.000         0.00           Medium Trucks:         65.2         63.3         61.5         55.5         64.1         6           Medium Trucks:         59.2         57.7         51.4         49.8         58.3         55	Centerline Dis	t. to Barrier:	34.0 feet		N	oise So	ource El	evatior	s (in fe	eet)		
Barrier Distance to Observer:         0.0 feet         Medium Trucks:         2.297           Observer Height (Above Pad):         5.0 feet         Heavy Trucks:         8.006         Grade Adjustment:         0.0           Pad Elevation:         0.0 feet         Lane Equivalent Distance (in feet)         Lane Equivalent Distance (in feet)           Road Grade         0.0%         Autos:         33.845         Medium Trucks:         33.381           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Bern Atte           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Bern Atte           Heavy Trucks:         82.99         -23.77         2.52         -1.20         -4.53         0.000         0.0           Unnitigated Noise Levels (without Topo and barrier attenuation)         Leq Evening         Leq Night         Ldn         CNEL           Autos:         65.2         63.3         61.5         55.5         64.1         6           Medium Trucks:         59.2         57.7         51.4         49.8         58.3         58           Medium Trucks:         69.5         59.1         50.1 </td <td>Centerline Dist. t</td> <td>to Observer:</td> <td>34.0 feet</td> <td></td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td>,</td> <td></td> <td></td>	Centerline Dist. t	to Observer:	34.0 feet		-					,		
Observer Height (Above Pad):         5.0 feet         Heavy Trucks:         8.006         Grade Adjustment:         0.0           Road Elevation:         0.0 feet         Heavy Trucks:         8.006         Grade Adjustment:         0.0           Road Elevation:         0.0 feet         Lane Equivalent Distance (in feet)         Autos:         33.645           Road Grade:         0.0%         Autos:         33.801         Heavy Trucks:         8.000         00           FHMA Noise Model Calculations         Free Read         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berner Atten           Autos:         66.51         -2.58         2.48         -1.20         -4.63         0.000         0.0           Medium Trucks:         77.7         2.52         1.20         -4.86         0.000         0.0           Heavy Trucks:         82.99         -23.77         2.52         1.20         -5.67         0.000         0.0           Unnitigated Noise Levels (without Topo and barrier attenuation)         VehicleType         Leg Peak Hour         Leg Qay         Leg Evening         Leg Night         Ldn         C/NEL           Autos:         65.5         59.1         50.1         51.3         59.7	Barrier Distance t	to Observer:	0.0 feet			Modiu						
Pad Elevation:         0.0 feet         Lane Equivalent Distance (in feet)           Road Grade:         0.0%         Lane Equivalent Distance (in feet)           Road Grade:         0.0%         Autos:         33.645           Left View:         -90.0 degrees         Medium Trucks:         33.381           FHWA Noise Model Calculations         Heavy Trucks:         33.407           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berrier Atten           Autos:         66.51         -2.58         2.48         -1.20         -4.53         0.000         0.0           Medium Trucks:         77.72         -19.82         2.53         -1.20         -4.86         0.000         0.0           Heavy Trucks:         82.99         -23.77         2.52         -1.20         -5.67         0.000         0.0           Unnitigated Noise Levels (without Topo and barrier attenuation)         VehicleType         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Medium Trucks:         69.2         63.3         61.5         55.5         64.1         64.1         64.1         64.1         64.1         64.1         64.1         65.2	Observer Height (/	Above Pad):	5.0 feet						006	Grade Ad	iustment	: 0.0
Road Grade:         0.0%         Autos:         33.645           Left View:         -90.0 degrees         Medium Trucks:         33.381           Heavy Trucks:         33.301         Heavy Trucks:         33.341           FHWA Noise Model Calculations         VehicleType         Right View:         90.0 degrees           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berrier Atten           Autos:         66.51         -2.58         2.48         -1.20         -4.53         0.000         0.0           Medium Trucks:         77.72         -19.82         2.53         -1.20         -4.86         0.000         0.0           Heavy Trucks:         82.99         -23.77         2.52         -1.20         -5.67         0.000         0.0           Unnitigated Noise Levels (without Topo and barrier attenuation)         VehicleType         Leg Peak Hour         Leg Day         Leg Evening         Leg Night         Ldn         CNEL           Medium Trucks:         59.2         57.7         51.4         49.8         58.3         51           Heavy Trucks:         60.5         59.1         50.1         51.3         59.7         51	Pa	d Elevation:	0.0 feet									
Left View:         -90.0 degrees         Medium Trucks:         33.381           Right View:         90.0 degrees         Medium Trucks:         33.340           FHWA Noise Model Calculations         Heavy Trucks:         33.340           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Bern Atten           Autos:         66.51         -2.58         2.48         -1.20         -4.53         0.000         0.00           Medium Trucks:         77.72         -19.82         2.53         -1.20         -4.66         0.000         0.00           Medium Trucks:         82.99         -23.77         2.52         -1.20         -4.66         0.000         0.00           Unnitigated Noise Levels (without Topo and barrier attenuation)         Use Revention         Left View Revention         CNEL           Autos:         65.2         63.3         61.5         56.4.1         6           Medium Trucks:         59.2         57.7         51.4         49.8         58.3         58           Heavy Trucks:         60.5         59.1         50.1         51.3         59.7         59         50.1         51.3         59.7         56.2 <t< td=""><td></td><td></td><td></td><td></td><td>L</td><td>ane Eq</td><td></td><td></td><td></td><td>feet)</td><td></td><td></td></t<>					L	ane Eq				feet)		
Right View.         90.0 degrees         Heavy Trucks:         33.407           FHWA Noise Model Calculations         Heavy Trucks:         33.407           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Bern Atten           Autos:         66.51         -2.58         2.48         -1.20         -4.63         0.000         0.0           Medium Trucks:         82.99         -23.77         2.52         -1.20         -5.67         0.000         0.0           Unnitigated Noise Levels (without Topo and barrier attenuation)         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         65.2         63.3         61.5         55.5         64.1         6           Medium Trucks:         59.2         57.7         51.4         49.8         58.3         55           Heavy Trucks:         60.5         59.1         50.1         51.3         59.7         56           Vehicle Noise:         67.2         65.5         62.2         57.7         66.2         66           Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA	F											
FHWA Noise Model Calculations           FHWA Noise Model Calculations         Example         Distance         Finite Road         Fresnel         Barrier Atten         Berrn Atten           Autos:         66.51         -2.58         2.48         -1.20         -4.53         0.000         0.0           Medium Trucks:         77.72         -19.82         2.53         -1.20         -4.86         0.000         0.0           Heavy Trucks:         82.99         -23.77         2.52         -1.20         -5.67         0.000         0.0           Unnitigated Noise Levels (without Topo and barrier attenuation)         VehicleType         Leg Peak Hour         Leg Day         Leg Evening         Leg Night         Ldn         CNEL           Medium Trucks:         69.2         57.7         51.4         49.8         58.3         55           Heavy Trucks:         60.5         59.1         50.1         51.3         59.7         56           Vehicle Noise:         67.2         65.5         62.2         57.7         66.2         66           Centerline Distance to Noise Contour (in feet)         T/0 dBA         65 dBA         60 dBA         55 dBA												
VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Bern Atten           Autos:         66.51         -2.58         2.48         -1.20         -4.63         0.000         0.0           Medium Trucks:         77.72         -19.82         2.53         -1.20         -4.86         0.000         0.0           Heavy Trucks:         82.99         -23.77         2.52         -1.20         -5.67         0.000         0.0           Unnitigated Noise Levels (without Topo and barrier attenuation)         VehicleType         Leg Peak Hour         Leg Day         Leg Evening         Leg Night         Ldn         CNEL           Autos:         65.2         63.3         61.5         55.5         64.1         6           Medium Trucks:         59.2         57.7         51.4         49.8         58.3         51           Heavy Trucks:         60.5         59.1         50.1         51.3         59.7         56           Vehicle Noise:         67.2         65.5         62.2         57.7         66.2         66           Centerline Distance to Noise Contour (In feet)         70 dBA         65 dBA         60 dBA         55 dBA <td></td> <td>Right View:</td> <td>90.0 degre</td> <td>es</td> <td></td> <td>Heav</td> <td>y Trucks</td> <td>s: 33</td> <td>.407</td> <td></td> <td></td> <td></td>		Right View:	90.0 degre	es		Heav	y Trucks	s: 33	.407			
Autos:         66.51         -2.58         2.48         -1.20         -4.53         0.000         0.0           Medium Trucks:         77.72         -19.82         2.53         -1.20         -4.86         0.000         0.0           Heavy Trucks:         82.99         -23.77         2.52         -1.20         -4.86         0.000         0.0           Unitigated Noise Levels (without Topo and barrier attenuation)         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Medium Trucks:         65.2         63.3         61.5         55.5         64.1         6           Medium Trucks:         69.2         57.7         51.4         49.8         58.3         55           Heavy Trucks:         60.5         59.1         50.1         51.3         59.7         55           Vehicle Noise:         67.2         65.5         62.2         57.7         66.2         66           Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA	FHWA Noise Mode	el Calculation	S									
Medium Trucks:         77.72         -19.82         2.53         -1.20         -4.86         0.000         0.0           Heavy Trucks:         82.99         -23.77         2.52         -1.20         -5.67         0.000         0.0           Unmitgated Noise Levels (without Topo and barrier attenuation)         Leq Night         Ldn         CNEL           VehicleType         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         65.2         63.3         61.5         55.5         64.1         6           Medium Trucks:         59.2         57.7         51.4         49.8         58.3         56           Heavy Trucks:         60.5         59.1         50.1         51.3         59.7         56           Vehicle Noise:         67.2         65.5         62.2         57.7         66.2         66           Centerline Distance to Noise Contour (in feet)         To dBA         65 dBA         60 dBA         55 dBA				Dista		Finite		Fres				
Heavy Trucks:         82.99         -23.77         2.52         -1.20         -5.67         0.000         0.00           Unnitigated Noise Levels (without Topo and barrier attenuation)         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         65.2         63.3         61.5         5.67         64.1         6           Medium Trucks:         59.2         57.7         51.4         49.8         58.3         51           Heavy Trucks:         60.5         59.1         50.1         51.3         59.7         56           Vehicle Noise:         67.2         65.5         62.2         57.7         66.2         66           Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA												0.00
Unmitigated Noise Levels (without Topo and barrier attenuation)           VehicleType         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         65.2         63.3         61.5         55.5         64.1         6           Medium Trucks:         59.2         57.7         51.4         49.8         58.3         51           Heavy Trucks:         60.5         59.1         50.1         51.3         59.7         55           Vehicle Noise:         67.2         65.5         62.2         57.7         66.2         66.2         66         66         60         26         26         263.4         60 dBA         55 dBA		=	=									0.00
VehicleType         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         65.2         63.3         61.5         55.5         64.1         66           Medium Trucks:         59.2         57.7         51.4         49.8         58.3         58           Heavy Trucks:         60.5         59.1         50.1         51.3         59.7         55           Vehicle Noise:         67.2         65.5         62.2         57.7         66.2         60           Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA	Heavy Trucks:	82.99	-23.77		2.52		-1.20		-5.67	0.0	000	0.00
Autos:         65.2         63.3         61.5         55.5         64.1         6           Medium Trucks:         59.2         57.7         51.4         49.8         58.3         58           Heavy Trucks:         60.5         59.1         50.1         51.3         59.7         51           Vehicle Noise:         67.2         65.5         62.2         57.7         66.2         60           Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA												
Medium Trucks:         59.2         57.7         51.4         49.8         58.3         51           Heavy Trucks:         60.5         59.1         50.1         51.3         59.7         56           Vehicle Noise:         67.2         65.5         62.2         57.7         66.2         66           Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA		,			.eq Eve		Leq				-	
Heavy Trucks:         60.5         59.1         50.1         51.3         59.7         55           Vehicle Noise:         67.2         65.5         62.2         57.7         66.2         66           Centerline Distance to Noise Contour (in feet)           70 dBA         65 dBA         60 dBA         55 dBA									-	• · · ·		
Vehicle Noise:         67.2         65.5         62.2         57.7         66.2         6           Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA									-			
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA									-			59. 66
70 dBA 65 dBA 60 dBA 55 dBA						02.2		57.	•	50.	-	50
	Centeriine Distand	e to NOISE C	ontour (in feet		70 di	BA	65	dBA	1	60 dBA	55	i dBA
				I dn:								
CNEL: 20 44 94 203			C					-				

Friday, November 22, 2019

Friday, November 22, 2019

	FHW	A-RD-77-108	HIGH	NAY N	DISE PR	EDICTIC	ON MOI	DEL			
	<ul> <li>Horizon Yea</li> <li>Masters Dr.</li> <li>n/o Eagle G</li> </ul>		roject			Project N Job Nu			d Marketpl	ace	
	PECIFIC IN	PUT DATA							L INPUT	S	
Highway Data				5	ite Con	ditions (	Hard =	10, Sc	oft = 15)		
Average Daily T	raffic (Adt):	7,532 vehicle	s					Autos:	15		
Peak Hour P	Percentage:	10%				dium Truo			15		
Peak Ho	our Volume:	753 vehicle	s		Hea	avy Truck	(3+ A	xles):	15		
	icle Speed:	40 mph		1	ehicle l	Nix					
Near/Far Lan	e Distance:	14 feet		-	Vehi	cleType		Dav	Evening	Night	Daily
Site Data							utos:	77.5%	•	9.6%	
Barr	ier Height:	0.0 feet			Me	dium Tru	icks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wa	•	0.0			ŀ	leavy Tru	icks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist		34.0 feet		٨	loise So	urce Ele	vations	s (in fe	eet)		
Centerline Dist. to		34.0 feet				Autos			,		
Barrier Distance to	o Observer:	0.0 feet			Mediur	n Trucks	2.2	97			
Observer Height (A	,	5.0 feet			Heav	y Trucks.	8.0	06	Grade Ad	ustment	: 0.0
	d Elevation:	0.0 feet					Distant				
	d Elevation:	0.0 feet		L	ane Equ	uivalent			reet)		
R	oad Grade:	0.0%				Autos.	00.0				
	Left View: Right View:	-90.0 degre 90.0 degre				n Trucks. y Trucks.	00.0				
FHWA Noise Mode	- I Calculations										
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresn	el	Barrier Att	en Re	rm Atten
Autos:	66.51	-2.67	Diot	2.48		-1.20		-4.53		000	0.00
Medium Trucks:	77.72	-19.91		2.53		-1.20		4.86		000	0.00
Heavy Trucks:	82.99	-23.86		2.52		-1.20		-5.67	0.0	000	0.00
Unmitigated Noise	Levels (witho	out Topo and	barrie	r atteni	uation)						
	Leq Peak Hou			Leq Ev	~	Leq N	·		Ldn	-	NEL
Autos:	65.	-	63.2		61.5		55.4		64.0		64.
Medium Trucks:	59.	-	57.6		51.3		49.7		58.2	-	58.4
Heavy Trucks:	60.	*	59.0		50.0		51.2		59.6		59.
Vehicle Noise:	67.	-	65.4		62.1		57.6		66.1		66.
Centerline Distance	e to Noise Co	ntour (in feet	)	70 d	DA I	65 d	DA.	6	0 dBA	E	dBA
			Ldn:	19		65 d 40		C	87		187
		0	NFL:	20		40			87 93		201
		0	¥66.	20	,	43	,		53	4	201

		VA-RD-77-108							
	io: Horizon Yea		roject					edford Marketpl	ace
	e: Bedford Cy					Job N	umber: 12	2751	
Road Segme	nt: s/o El Cerri	to Rd.							
	SPECIFIC IN	IPUT DATA						DDEL INPUT	S
Highway Data				S	Site Cond	ditions	(Hard = 1	0, Soft = 15)	
Average Daily	Traffic (Adt): 1	16,458 vehicle	s				AL	itos: 15	
Peak Hour	Percentage:	10%			Mea	lium Tru	icks (2 Ax	les): 15	
Peak H	lour Volume:	1,646 vehicle	S		Hea	ivy Truc	:ks (3+ Ax	les): 15	
Ve	hicle Speed:	40 mph		L	/ehicle N	lix			
Near/Far La	ne Distance:	24 feet		F		cleType		ay Evening	Night Daily
Site Data					10/110			7.5% 12.9%	9.6% 97.42
Pa	rrier Height:	0.0 feet			Me	dium Ti	rucks: 84	4.8% 4.9%	10.3% 1.849
Barrier Type (0-W		0.0			н	eavy Ti	rucks: 86	6.5% 2.7%	10.8% 0.749
Centerline Di	. ,	38.0 feet		-					
Centerline Dist.		38.0 feet		^	loise So		evations	, ,	
Barrier Distance	to Observer:	0.0 feet				Auto			
Observer Height	Above Pad):	5.0 feet			Mediun			-	
	ad Elevation:	0.0 feet			Heavy	/ Truck:	s: 8.00	6 Grade Adj	ustment: 0.0
Ro	ad Elevation:	0.0 feet		L	ane Equ	ivalen	Distance	(in feet)	
	Road Grade:	0.0%				Auto	s: 36.40	1	
	Left View:	-90.0 deare	es		Mediun	n Truck	s: 36.15	7	
	Right View:	90.0 degree	es		Heavy	/ Truck	s: 36.18	1	
FHWA Noise Mod	el Calculation	s							
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite I	Road	Fresnel	Barrier Att	en Berm Atten
Autos:	66.51	0.72		1.96	i	-1.20	-4	1.57 0.0	0.00
Medium Trucks:	77.72	-16.51		2.01		-1.20	-4	.87 0.0	0.00
Heavy Trucks:	82.99	-20.47		2.00	)	-1.20	-5	5.59 0.0	000 0.00
Unmitigated Nois	e Levels (with	out Topo and	barrie	r atteni	uation)				
VehicleType	Leq Peak Hou	ir Leq Day	'	Leq Ev	ening	Leq	Night	Ldn	CNEL
Autos:	68		66.1		64.3		58.3	66.9	
Medium Trucks:	62		60.5		54.1		52.6	61.1	
Heavy Trucks:	63	-	61.9		52.9		54.1	62.5	
Vehicle Noise:			68.3		65.0		60.5	69.0	) 69
	ce to Noise Co	ontour (in feet	)						T
Centerline Distan			L	70 d			dBA	60 dBA	55 dBA
Centerline Distan									
Centerline Distan			Ldn: VFL:	33 35			'0 '5	151 162	326 349

FH	WA-RD-77-108 H	IIGHWA	Y NC	DISE PR	EDICTI	ом мо	DEL				
Scenario: Horizon Ye Road Name: Bedford C Road Segment: n/o George	yn. Rd.	oject			Project Job Ni			rd Market	place		
SITE SPECIFIC I	NPUT DATA							L INPU	тs		
Highway Data			s	ite Con	ditions (	Hard =	= 10, S	oft = 15)			
Average Daily Traffic (Adt):	16,458 vehicles						Autos				
Peak Hour Percentage:	10%				dium Tru						
Peak Hour Volume:	1,646 vehicles			Hea	avy Truc	ks (3+	Axles)	15			
Vehicle Speed:	40 mph		V	ehicle N	Nix						
Near/Far Lane Distance:	24 feet			Vehi	cleType		Day	Evening	Nigl	ht	Daily
Site Data						utos:	77.5%		· ·	_	97.42%
Barrier Height:	0.0 feet			Ме	edium Tr	ucks:	84.8%	6 4.9%	10.	3%	1.84%
Barrier Type (0-Wall, 1-Berm):	0.0			H	leavy Tr	ucks:	86.5%	6 2.7%	10.	8%	0.74%
Centerline Dist. to Barrier:	38.0 feet		N	oise So	urce Ele	evation	ns (in t	eet)			
Centerline Dist. to Observer:	38.0 feet			0130 00	Autos		.000	000			
Barrier Distance to Observer:	0.0 feet			Modium	n Trucks		.000				
Observer Height (Above Pad):	5.0 feet				y Trucks		.006	Grade A	diustm	ent <sup>.</sup>	0.0
Pad Elevation:	0.0 feet			neav.	y mucho	. 0	.000	0/000 //	ajaoan	0///	0.0
Road Elevation:	0.0 feet		L	ane Equ	uivalent	Distar	ice (in	feet)			
Road Grade:	0.0%				Autos		.401				
Left View:	-90.0 degrees	3			n Trucks		.157				
Right View:	90.0 degrees	6		Heav	y Trucks	: 36	.181				
FHWA Noise Model Calculation	ıs										
VehicleType REMEL	Traffic Flow	Distan		Finite		Fres		Barrier A		Bern	n Atten
Autos: 66.51			1.96		-1.20		-4.57	-	.000		0.00
Medium Trucks: 77.72			2.01		-1.20		-4.87	-	.000		0.000
Heavy Trucks: 82.99	-20.47		2.00		-1.20		-5.59	C	.000		0.00
Unmitigated Noise Levels (with		-									
VehicleType Leq Peak Ho			q Eve	ening	Leq I	·		Ldn		CN	
		6.1		64.3		58.	-	66			67.
		0.5		54.1		52.		61			61.3
		1.9		52.9		54.	·		.5		62.
Heavy Trucks: 63				65.0		60.	5	69	0		69.
Heavy Trucks: 63 Vehicle Noise: 70	0.0 6	8.3									
Heavy Trucks: 63	0.0 6	8.3	70 d		ee a		-			<i>EE</i> 0	ID A
Heavy Trucks: 63 Vehicle Noise: 70	0.0 6 Contour (in feet)		70 dl	BA	65 0			60 dBA		55 a	
Heavy Trucks: 63 Vehicle Noise: 70	0.0 6 Contour (in feet)	dn:	70 dl 33 35	BA	65 c 7(	D				55 a 32 34	6

	FHW	/A-RD-77-108	HIGHW	AY NO	ISE PR	EDICTI	ON MOD	EL			
	<ul> <li>Horizon Yea</li> <li>Bedford Cyr</li> <li>n/o Eagle G</li> </ul>	n. Rd.	roject				Name: B umber: 1		d Marketpla	ice	
	PECIFIC IN	PUT DATA							L INPUTS		
Highway Data				Sit	te Con	ditions	(Hard = 1	10, So	oft = 15)		
Average Daily 1	raffic (Adt): 1	6,298 vehicles	6				A	utos:	15		
Peak Hour F	Percentage:	10%			Mee	dium Tru	icks (2 A	des):	15		
Peak Ho	our Volume:	1,630 vehicles	6		Hea	avy Truc	:ks (3+ A)	des):	15		
Veh	icle Speed:	40 mph		Ve	hicle I	Mix					
Near/Far Lan	e Distance:	24 feet				cleType		Day	Evening	Night	Daily
Site Data					1011			7.5%		v	97.42%
Ban	rier Height:	0.0 feet			Me	edium Tr	ucks: 8	4.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wa	•	0.0			F	leavy Tr	ucks: 8	6.5%	2.7%	10.8%	0.74%
Centerline Dis		38.0 feet		No	visa Sc	urco El	evations	(in f	oot)		
Centerline Dist. to	o Observer:	38.0 feet			//30 00	Auto			501)		
Barrier Distance to	Observer:	0.0 feet			Madiu	n Trucks					
Observer Height (A	bove Pad):	5.0 feet				y Trucks			Grade Adju	stment <sup>.</sup>	0.0
Pa	d Elevation:	0.0 feet			ncav	y much	5. 0.0	00	onddo maja	ournorni.	0.0
Roa	d Elevation:	0.0 feet		La	ne Eq	uivalent	Distanc	e (in :	feet)		
F	oad Grade:	0.0%				Autos					
	Left View:	-90.0 degree	es		Mediur	n Trucks					
	Right View:	90.0 degree	es		Heav	y Trucks	s: 36.1	81			
FHWA Noise Mode	I Calculations	;									
VehicleType	REMEL	Traffic Flow	Distar	nce	Finite	Road	Fresne	e/	Barrier Atte	n Berr	n Atten
Autos:	66.51	0.68		1.96		-1.20	-	4.57	0.00	00	0.000
Medium Trucks:	77.72	-16.56		2.01		-1.20	-	4.87	0.00	00	0.000
Heavy Trucks:	82.99	-20.51		2.00		-1.20	-	5.59	0.00	00	0.000
			barrier a	attenua							
									Ldn	CA	IEL
VehicleType	Leq Peak Hou	r Leq Day	Le	eq Eve	·	Leq	Night			0.	
VehicleType Autos:	Leq Peak Hou 68.	r Leq Day 0	66.1		64.3	Leq	58.2		66.9	0,	67.5
VehicleType Autos: Medium Trucks:	Leq Peak Hou 68. 62.	r Leq Day 0 0	66.1 60.5		64.3 54.1	Leq	58.2 52.6		66.9 61.0	0.	67.5 61.2
VehicleType Autos: Medium Trucks: Heavy Trucks:	Leq Peak Hou 68. 62. 63.	r Leq Day 0 0 3	66.1 60.5 61.9		64.3 54.1 52.8	Leq	58.2 52.6 54.1		66.9 61.0 62.4		67.5 61.2 62.6
VehicleType Autos: Medium Trucks:	Leq Peak Hou 68. 62.	r Leq Day 0 0 3	66.1 60.5		64.3 54.1	Leq	58.2 52.6		66.9 61.0		67.5 61.2 62.6
Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	Leq Peak Hou 68. 62. 63. 70.	r Leq Day 0 0 3 0	66.1 60.5 61.9 68.3	eq Eve	64.3 54.1 52.8 65.0		58.2 52.6 54.1 60.4		66.9 61.0 62.4 69.0		67.5 61.2 62.6 69.4
VehicleType Autos: Medium Trucks: Heavy Trucks:	Leq Peak Hou 68. 62. 63. 70.	r Leq Day 0 0 3 0 ntour (in feet	66.1 60.5 61.9 68.3	eq Eve 70 dB	64.3 54.1 52.8 65.0	65 (	58.2 52.6 54.1 60.4	6	66.9 61.0 62.4 69.0	55	67.5 61.2 62.6 69.4 dBA
VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	Leq Peak Hou 68. 62. 63. 70.	r Leq Day 0 0 3 0 ntour (in feet	66.1 60.5 61.9 68.3	eq Eve	64.3 54.1 52.8 65.0	65 (	58.2 52.6 54.1 60.4	6	66.9 61.0 62.4 69.0	55	67.5 61.2 62.6 69.4

Friday, November 22, 2019

Friday, November 22, 2019

	FH\	WA-RD-77-108	HIGHV	VAY NC	ISE PF	REDICTIO	N MODEL		
Road Nam	io: Horizon Ye le: Temescal nt: n/o Cajalco		roject				ame: Bed nber: 127	ford Marketpla 51	ace
SITE	SPECIFIC IN	NPUT DATA						DEL INPUTS	5
Highway Data				S	ite Con	ditions (H	lard = 10,	Soft = 15)	
	Traffic (Adt): Percentage: lour Volume:	26,846 vehicle 10% 2.685 vehicle				dium Truci avy Truck:		s): 15	
	hicle Speed:	45 mph	3				101 / 040	<i></i>	
Near/Far La		51 feet		V	ehicle I				
iveai/i ai Lai	le Distance.	51 leet			Veh	icleType	Day		Night Daily
Site Data							tos: 77.		9.6% 97.42%
Bai	rier Height:	0.0 feet			Me	edium Truc	cks: 84.8	3% 4.9%	10.3% 1.84%
Barrier Type (0-W	all, 1-Berm):	0.0			ŀ	leavy Tru	cks: 86.	5% 2.7%	10.8% 0.74%
Centerline Dis	st. to Barrier:	53.0 feet		N	oise Sr	ource Elev	ations (in	(feet)	
Centerline Dist.	to Observer:	53.0 feet			0.00 00	Autos:	0.000	1000	
Barrier Distance	to Observer:	0.0 feet			Modiu	m Trucks:	2.297		
Observer Height (	Above Pad):	5.0 feet				v Trucks:	8.006	Grade Adi	ustment: 0.0
Pa	ad Elevation:	0.0 feet						,	
Roa	ad Elevation:	0.0 feet		La	ane Eq	uivalent D	)istance (	n feet)	
1	Road Grade:	0.0%				Autos:	46.731		
	Left View:	-90.0 degre	es		Mediu	m Trucks:	46.541		
	Right View:	90.0 degre	es		Heav	y Trucks:	46.559		
FHWA Noise Mod	el Calculation	IS							
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresnel	Barrier Atte	en Berm Atten
Autos:	68.46	2.34		0.34		-1.20	-4.6	6 0.0	00 0.000
Medium Trucks:	79.45	-14.90		0.36		-1.20	-4.8	7 0.0	00.00
Heavy Trucks:	84.25	-18.86		0.36		-1.20	-5.4	0.0	0.000
Unmitigated Noise	e Levels (with	out Topo and	barrier	r attenu	ation)				
VehicleType	Leq Peak Hou	ur Leq Day	/	Leq Eve	ening	Leq Ni	ght	Ldn	CNEL
Autos:	69	9.9	68.0		66.3		60.2	68.8	69.4
Medium Trucks:	63	3.7	62.2		55.8		54.3	62.8	63.0
Heavy Trucks:		1.6	63.1		54.1		55.3	63.7	
Vehicle Noise:	71	1.8	70.0		66.9		62.2	70.8	3 71.2
Centerline Distant	ce to Noise C	ontour (in feet	)						
				70 dE	BA	65 dE		60 dBA	55 dBA
			Ldn:	59		128		276	595
		С	NEL:	64		137		296	638

	FHW	A-RD-77-108	HIGH	WAY NO	DISE PRE	DICT				
	Temescal C		roject				Name: Beo lumber: 127	lford Marketp 51	lace	
SITE S	PECIFIC IN	PUT DATA				Ν	IOISE MO	DEL INPUT	s	
Highway Data				S	ite Condi	itions	(Hard = 10,	Soft = 15)		
	ercentage: ur Volume:	10% 2,845 vehicles					Aut ucks (2 Axle cks (3+ Axle	s): 15		
	cle Speed:	45 mph		v	ehicle Mi	x				
Near/Far Lane	Distance:	51 feet			Vehicl	еТуре	Da	V Evening	Night	Daily
Site Data							Autos: 77.	5% 12.9%	9.6%	97.429
Barr	ier Heiaht:	0.0 feet			Med	lium T	rucks: 84.	8% 4.9%	10.3%	1.849
Barrier Type (0-Wal		0.0			He	avy T	rucks: 86.	5% 2.7%	10.8%	0.749
Centerline Dist.	. ,	53.0 feet					levations (i	- (		
Centerline Dist. to	Observer:	53.0 feet		N	oise sou	Auto		Tieel)		
Barrier Distance to	Observer:	0.0 feet			Marthum					
Observer Height (Al	bove Pad);	5.0 feet			Medium			Oursels Art		
<b>U</b> 1	Elevation:	0.0 feet			Heavy	Truck	s: 8.006	Grade Ad	justment:	0.0
Road	Elevation:	0.0 feet		L	ane Equi	valen	t Distance (	in feet)		
Re	oad Grade:	0.0%				Auto	s: 46.731			
	Left View:	-90.0 degree	s		Medium	Truck	s: 46.541			
1	Right View:	90.0 degree			Heavy	Truck	s: 46.559			
FHWA Noise Model	Calculations	;								
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite R	oad	Fresnel	Barrier Att	en Bern	n Atten
Autos:	68.46	2.59		0.34		-1.20	-4.0	66 0.0	000	0.00
Medium Trucks:	79.45	-14.65		0.36		-1.20	-4.8	37 0.0	000	0.00
Heavy Trucks:	84.25	-18.60		0.36		-1.20	-5.4	40 0.0	000	0.00
Unmitigated Noise	Levels (witho	out Topo and	barrie	er attenu	ation)					
VehicleType L	eq Peak Hou			Leq Eve	ening	Leq	Night	Ldn	CN	EL
Autos:	70.	-	68.3		66.5		60.5	69.		69.
Medium Trucks:	64.	-	62.5		56.1		54.6	63.	-	63.
Heavy Trucks:	64.	8	63.4		54.4		55.6	64.	0	64.
Vehicle Noise:	72.	0	70.3		67.1		62.5	71.	0	71.
Centerline Distance	to Noise Co	ntour (in feet,	)							
			L	70 di			dBA	60 dBA	55 0	
			Ldn:	62		1	33	287	61	8
			VFI :	66					66	

	FHW	A-RD-77-108	HIGH	WAY N	IOISE PF	EDICTIC	N MODE	-			
Scenario: H Road Name: C Road Segment: w	alifornia Av		roject				lame: Beo mber: 127	lford Marke 51	place		
	CIFIC IN	PUT DATA						DEL INPU	TS		
Highway Data					Site Con	ditions (l	Hard = 10,	Soft = 15)			
Average Daily Traffi	c (Adt):	8,578 vehicle	S				Aut				
Peak Hour Perc	entage:	10%					sks (2 Axle	,			
Peak Hour \		858 vehicle	S		He	avy Truck	s (3+ Axle	s): 15			
Vehicle		40 mph			Vehicle I	Nix					
Near/Far Lane Di	stance:	14 feet		-	Veh	cleType	Da	y Evening	y Nie	ght	Dailv
Site Data							itos: 77.				97.429
Barrier	Hoiaht <sup>,</sup>	0.0 feet			Me	edium Tru	cks: 84.	8% 4.9%	6 10	0.3%	1.84%
Barrier Type (0-Wall, 1	-Berm):	0.0			ŀ	leavy Tru	cks: 86.	5% 2.7%	6 10	0.8%	0.74%
Centerline Dist. to		34.0 feet		1	Noise So	urce Ele	vations (i	n feet)			
Centerline Dist. to Ot		34.0 feet				Autos:	0.000				
Barrier Distance to Ot		0.0 feet			Mediur	n Trucks:	2.297				
Observer Height (Abov	,	5.0 feet			Heav	y Trucks:	8.006	Grade A	djustr	nent:	0.0
	evation:	0.0 feet		-							
Road El		0.0 feet		4	Lane Eq		Distance (	,			
	Grade:	0.0%				Autos:					
	eft View: ht View:	-90.0 degree 90.0 degree				n Trucks: y Trucks:					
FHWA Noise Model Ca	culations	-									
	EMEL	Traffic Flow	Dis	tance	Finite	Road	Fresnel	Barrier A	tten	Bern	n Atten
Autos:	66.51	-2.11		2.48	8	-1.20	-4.	53 (	0.000		0.00
Medium Trucks:	77.72	-19.34		2.5	3	-1.20	-4.	36 (	0.000		0.00
Heavy Trucks:	82.99	-23.30		2.52	2	-1.20	-5.	67 (	0.000		0.00
Unmitigated Noise Lev											
	Peak Hour			Leg Ev	~	Leq N		Ldn		CN	
Autos:	65.	-	63.8		62.0		56.0	-	1.6		65.
Medium Trucks:	59.	-	58.2		51.8		50.3		3.7		59.
Heavy Trucks:	61.	-	59.6		50.6		51.8		).2		60.
Vehicle Noise:	67.	-	66.0		62.7		58.2	6	6.7		67.
Centerline Distance to	Noise Co	ntour (in feet	)	70 -	dBA	65 d	вл	60 dBA		55 c	
			I dn:	2		65 a		95		20	
			Lun:	2	U	44		90		20	/4
		0	VFI :	2	2	47		102		21	0

	FH\	NA-RD-77-108 H	IGHWAY	NOISE PF	REDICTIO	ON MODE	EL		
Road Nam	io: Horizon Ye ne: California / nt: e/o Master		iect			Vame: Be mber: 12	edford Market 2751	blace	
SITE	SPECIFIC IN	NPUT DATA					DDEL INPUT	rs	
Highway Data				Site Con	ditions (	Hard = 1	0, Soft = 15)		
Average Daily	Traffic (Adt):	11,140 vehicles				AL	utos: 15		
Peak Hour	Percentage:	10%		Me	dium True	cks (2 Ax	<i>les):</i> 15		
Peak H	lour Volume:	1,114 vehicles		He	avy Truck	(3+ Ax	<i>les):</i> 15		
Ve	hicle Speed:	40 mph		Vehicle	Mix				
Near/Far La	ne Distance:	14 feet			icleType	Δ	ay Evening	Night	Daily
Site Data				ven			7.5% 12.9%	· ·	,
				M	adium Tri		4.8% 4.9%		
	rrier Height:	0.0 feet 0.0			Heavy Tru		6.5% 2.7%		
Barrier Type (0-W Centerline Di		0.0 34.0 feet						10.07	. 0.1170
Centerline Dist.		34.0 feet		Noise So	ource Ele	vations	(in feet)		
Barrier Distance		0.0 feet			Autos.				
Observer Height (		5.0 feet		Mediu	m Trucks.	2.29			
	ad Elevation:	0.0 feet		Heav	y Trucks.	8.00	6 Grade A	djustmen	t: 0.0
	ad Elevation:	0.0 feet		Lane Eq	uivalent	Distance	(in feet)		
	Road Grade:	0.0%			Autos		, ,		-
	Left View:	-90.0 degrees		Mediu	m Trucks.				
	Right View:	90.0 degrees			y Trucks				
FHWA Noise Mod	el Calculation	IS						-	
VehicleType	REMEL	Traffic Flow	Distance	Finite	Road	Fresnel	Barrier A	tten Be	erm Atten
Autos:	66.51	-0.97	2.4	48	-1.20	-4	4.53 0	.000	0.000
Medium Trucks:	77.72	-18.21	2.5	53	-1.20	-4	1.86 0	.000	0.000
Heavy Trucks:	82.99		2.5		-1.20	-5	5.67 0	.000	0.000
Unmitigated Nois									
VehicleType	Leq Peak Ho			vening	Leq N	•	Ldn		ONEL
Autos:		3.8 64		63.2		57.1	65		66.3
Medium Trucks:		).8 59		53.0		51.4	59		60.1
Heavy Trucks:		2.2 60		51.7		52.9	61	-	61.4
Vehicle Noise:		3.8 67	.1	63.8		59.3	67	.8	68.3
Centerline Distan	ce to Noise C	ontour (in feet)	70	dBA	65 d	RA	60 dBA	54	5 dBA
		La		24	52		113		243
		CNE		26	56		121		261
				-					-

Friday, November 22, 2019

Friday, November 22, 2019

	FHW	/A-RD-77-108	HIGHV	VAY NO	DISE PR	EDICTI	ON MOD	DEL			
Road Nam	io: Horizon Yea e: El Cerrito R nt: w/o Bedford	d.	roject				Name: E umber: 1		d Marketpl	ace	
SITE	SPECIFIC IN	PUT DATA							L INPUT	S	
Highway Data				S	ite Con	ditions	(Hard =	10, So	oft = 15)		
	Percentage:	0,270 vehicle: 10% 3,027 vehicle:					/ Icks (2 A :ks (3+ A	/	15 15 15		
Vei	hicle Speed:	40 mph		V	ehicle N	Ai~					
Near/Far Lai	ne Distance:	36 feet		V		cleType		Dav	Evening	Night	Daily
Site Data					VCIII			77.5%	•	9.6%	
	rrier Height:	0.0 feet			Me	edium Tr	ucks:	84.8%	4.9%	10.3%	
Barrier Type (0-W	all, 1-Berm):	0.0			H	leavy Tr	rucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dis		44.0 feet		N	oise So	urce El	evations	s (in fe	et)		
Centerline Dist.		44.0 feet				Autos	s: 0.0	100			
Barrier Distance		0.0 feet			Medium	n Trucks	s: 2.2	97			
Observer Height (	Above Pad): ad Elevation:	5.0 feet 0.0 feet			Heav	y Trucks	s: 8.0	06	Grade Adj	ustment	: 0.0
	ad Elevation:	0.0 feet		L	ane Equ	uivalent	Distanc	e (in f	feet)		
	Road Grade:	0.0%				Autos	s: 40.4	160	,		
	Left View:	-90.0 degree	s		Medium	n Trucks	s: 40.2	241			
	Right View:	90.0 degree			Heav	y Trucks	s: 40.2	62			
FHWA Noise Mode	el Calculations	5									
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresn	el .	Barrier Att	en Be	rm Atten
Autos:	66.51	3.37		1.28		-1.20		4.61	0.0	000	0.000
Medium Trucks:	77.72	-13.87		1.31		-1.20		4.87		000	0.000
Heavy Trucks:	82.99	-17.82		1.31		-1.20		-5.50	0.0	000	0.000
Unmitigated Noise											
VehicleType	Leq Peak Hou			Leq Eve	~	Leq	Night		Ldn	-	NEL
Autos:	70.		68.1		66.3		60.2		68.9		69.5
Medium Trucks:	64.	-	62.5		56.1		54.5		63.0		63.2
Heavy Trucks:	65.	-	63.9		54.8		56.1		64.4		64.6
Vehicle Noise:	72.	-	70.2		67.0		62.4		71.0	)	71.4
Centerline Distant	ce to Noise Co	ntour (in feet	)	70 dl	84	65	dBA	6	0 dBA	55	dBA
			Ldn:	51	<i>ur</i> -1		ивя 10	0	236		509
			VFL:	55			18		253		545
		01		55			10		200		

	FHW	/A-RD-77-108	HIGH	IWAY NC			ODEL			
	io: Horizon Yea		roject			ct Name Number		rd Marketpl	ace	
	nt: e/o Bedford				000	Number	12/01			
SITE	SPECIFIC IN					NOISE	MODE		\$	
Highway Data	SI LOII IO IN	I OI DAIA		s	te Condition					
Average Daily	Traffic (Adt): 3	5,788 vehicle	s				Autos	15		
Peak Hour	Percentage:	10%			Medium	Trucks (2	Axles):	15		
Peak H	our Volume:	3,579 vehicle	s		Heavy T	ucks (3+	Axles):	15		
Ve	hicle Speed:	40 mph		V	ehicle Mix					
Near/Far Lai	ne Distance:	36 feet		-	VehicleTy	oe.	Dav	Evening	Night	Dailv
Site Data					1011101011	Autos:	77.5%	0	9.6%	
Pa	rier Heiaht:	0.0 feet			Medium	Trucks:	84.8%	4.9%	10.3%	1.849
Barrier Type (0-W		0.0			Heavy	Trucks:	86.5%	6 2.7%	10.8%	0.749
Centerline Dis		44.0 feet		-	,					
Centerline Dist.		44.0 feet		N	oise Source			eet)		
Barrier Distance		0.0 feet					0.000			
Observer Height (		5.0 feet			Medium Tru		2.297			
0 1	ad Elevation:	0.0 feet			Heavy Tru	cks: I	3.006	Grade Adj	ustment	: 0.0
	d Elevation:	0.0 feet		Li	ane Equivale	nt Dista	nce (in	feet)		
	Road Grade:	0.0%					0.460	,		
	Left View:	-90.0 degree	es		Medium Tru		0.241			
	Right View:	90.0 degree			Heavy Tru	cks: 4	0.262			
FHWA Noise Mod	el Calculation:	5								
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite Road	Fre	snel	Barrier Att	en Ber	m Atten
Autos:	66.51	4.10		1.28	-1.2	D	-4.61	0.0	000	0.00
Medium Trucks:	77.72	-13.14		1.31	-1.2	D	-4.87	0.0	000	0.00
Heavy Trucks:	82.99	-17.10		1.31	-1.2	D	-5.50	0.0	000	0.00
Unmitigated Noise	e Levels (with	out Topo and	barrie	er attenu	ation)					
VehicleType	Leq Peak Hou			Leq Eve		q Night		Ldn		NEL
Autos:	70.		68.8		67.0	61		69.6		70.
Medium Trucks:	64.		63.2		56.8	55		63.7		64.
Heavy Trucks:	66.	-	64.6		55.5	56	-	65.2		65.
Vehicle Noise:	72.		71.0		67.7	63	.1	71.7	7	72.
Centerline Distand	ce to Noise Co	ontour (in feet	)							
			L	70 dE	BA 6	5 dBA		60 dBA		dBA
			Ldn:	57		123		264	-	570
			NFI :	61		131		283		510

FHWA-RD-77-108 HI		NOISE PI				
Scenario: Horizon Year 2035 Plus Proje	ect				ford Marketpla	ace
Road Name: El Cerrito Rd.			Job Nun	nber: 127	'51	
Road Segment: e/o I-15 SB Ramps						
SITE SPECIFIC INPUT DATA		0/4- 0			DEL INPUTS	6
Highway Data		Site Cor	laitions (H		, Soft = 15)	
Average Daily Traffic (Adt): 27,788 vehicles				Aut		
Peak Hour Percentage: 10%			dium Truck	,	·	
Peak Hour Volume: 2,779 vehicles		He	avy Trucks	(3+ AXIE	es): 15	
Vehicle Speed: 40 mph Near/Far Lane Distance: 36 feet		Vehicle	Mix			
Near/Far Lane Distance: 36 feet		Veh	icleType	Da	y Evening	Night Daily
Site Data			Au		.5% 12.9%	9.6% 97.42%
Barrier Height: 0.0 feet			edium Truc		.8% 4.9%	10.3% 1.84%
Barrier Type (0-Wall, 1-Berm): 0.0			Heavy Truc	ks: 86	.5% 2.7%	10.8% 0.74%
Centerline Dist. to Barrier: 44.0 feet		Noise S	ource Elev	ations (i	n feet)	
Centerline Dist. to Observer: 44.0 feet			Autos:	0.000	,	
Barrier Distance to Observer: 0.0 feet		Mediu	m Trucks:	2.297		
Observer Height (Above Pad): 5.0 feet			vy Trucks:	8.006	Grade Adj	ustment: 0.0
Pad Elevation: 0.0 feet						
Road Elevation: 0.0 feet		Lane Eq	uivalent D		, ,	
Road Grade: 0.0%			Autos:	40.460		
Left View: -90.0 degrees			m Trucks:	40.241		
Right View: 90.0 degrees		Heat	y Trucks:	40.262		
FHWA Noise Model Calculations						
VehicleType REMEL Traffic Flow	Distance	e Finite	Road	Fresnel	Barrier Atte	en Berm Atten
Autos: 66.51 3.00	1	.28	-1.20	-4.	61 0.0	00 0.00
Medium Trucks: 77.72 -14.24	1	.31	-1.20	-4.	87 0.0	00 0.00
Heavy Trucks: 82.99 -18.20	1	.31	-1.20	-5.	50 0.0	0.00
Unmitigated Noise Levels (without Topo and ba	rrier att	enuation)				
VehicleType Leq Peak Hour Leq Day	Leq	Evening	Leq Ni	ght	Ldn	CNEL
Autos: 69.6 67.	.7	65.9		59.9	68.5	69.
	.1	55.7		54.2	62.6	62.
Medium Trucks: 63.6 62.		54.4		55.7	64.1	64.
Medium Trucks:         63.6         62.           Heavy Trucks:         64.9         63.	.5			62.0	70.6	71
		66.6		02.0		
Heavy Trucks: 64.9 63.		66.6		02.0		
Heavy Trucks:         64.9         63.           Vehicle Noise:         71.6         69.           Centerline Distance to Noise Contour (in feet)         69.	.9	0 dBA	65 dB		60 dBA	55 dBA
Heavy Trucks:         64.9         63.           Vehicle Noise:         71.6         69.	9 7 n:				60 dBA 223 239	

	FHW	/A-RD-77-108	HIGH	WAY N	OISE PF	REDICT	ION MO	DEL			
Road Nan	rio: Horizon Yea ne: El Cerrito R nt: e/o I-15 NB	d.	roject				Name: lumber:		rd Marketpl	ace	
SITE	SPECIFIC IN	PUT DATA				N	IOISE I	MODE	L INPUT	S	
Highway Data				5	Site Con	ditions	(Hard =	: 10, Se	oft = 15)		
Average Dailv	Traffic (Adt): 1	7.888 vehicle	s					Autos:	15		
• •	Percentage:	10%			Me	dium Tru	ucks (2	Axles):	15		
Peak F	lour Volume:	1,789 vehicles	s		He	avy Truc	cks (3+ )	Axles):	15		
Ve	hicle Speed:	40 mph			Vehicle I	Mise		-			
Near/Far La	ne Distance:	36 feet		H		icleType		Day	Evening	Night	Daily
Site Data					ven		Autos:	77.5%	•		97.42%
						, dium T		84.8%		9.6%	
	rrier Height:	0.0 feet				leavy T		86.5%		10.3%	
Barrier Type (0-W		0.0			r	leavy I	ucks.	00.3%	2.170	10.0%	0.74%
Centerline Di		44.0 feet		1	Voise So	ource E	levation	ıs (in f	eet)		
Centerline Dist.		44.0 feet				Auto	s: 0.	000			
Barrier Distance		0.0 feet			Mediur	n Truck	s: 2.	297			
Observer Height	,	5.0 feet			Heav	y Truck	s: 8.	006	Grade Adj	ustment.	0.0
	ad Elevation:	0.0 feet			<b>F</b>		Di- (	//	641		
	ad Elevation:	0.0 feet		-	ane Eq				reet)		
	Road Grade:	0.0%				Auto		.460			
	Left View:	-90.0 degree				n Truck		.241			
	Right View:	90.0 degree	es		Heav	y Truck	s: 40	.262			
FHWA Noise Mod	lel Calculations	5									
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fres	nel	Barrier Att	en Ber	m Atten
Autos:	66.51	1.09		1.28	3	-1.20		-4.61	0.0	000	0.000
Medium Trucks:	77.72	-16.15		1.31	1	-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	82.99	-20.11		1.31	1	-1.20		-5.50	0.0	000	0.000
Unmitigated Nois	e Levels (witho	out Topo and	barrie	r atten	uation)						
VehicleType	Leq Peak Hou	r Leq Day	r	Leq Ev	/ening	Leq	Night		Ldn	CI	NEL
Autos:	67.	7	65.8		64.0		58.	0	66.6	3	67.2
Medium Trucks:	61.	7	60.2		53.8		52.	3	60.7	,	61.0
Heavy Trucks:	63.	0	61.6		52.5		53.	8	62.1	I	62.3
Vehicle Noise:	69.	7	68.0		64.7		60.	1	68.7	7	69.1
Centerline Distan	ce to Noise Co	ntour (in feet	)								
				70 c			dBA	6	60 dBA		dBA
			Ldn:	36			7		167		159
		CI	VEL:	38	В	8	33		178	3	84

Friday, November 22, 2019

Friday, November 22, 2019

	FHW	A-RD-77-108	HIGHW	AY NO	DISE PF	REDICTI		DEL			
Road Nam	<ul> <li>b: Horizon Yea</li> <li>c: Eagle Glen</li> <li>c: e/o Masters</li> </ul>	Pkwy.	roject				Name: E umber: 1		d Marketpla	ace	
SITE S	SPECIFIC IN	PUT DATA							L INPUTS	5	
Highway Data				S	ite Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily	. ,		s			-U	ıcks (2 A	Autos:	15 15		
Peak Hour I		10%						/	15		
		2,440 vehicle	5		He	avy Truc	:ks (3+ A	xies):	15		
	nicle Speed:	40 mph		V	ehicle l	Nix					
Near/Far Lar	e Distance:	36 feet			Veh	icleType		Day	Evening	Night	Daily
Site Data						A	lutos:	77.5%	12.9%	9.6%	97.42%
Bar	rier Heiaht:	0.0 feet			Me	edium Tr	ucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wa		0.0			ŀ	leavy Tr	ucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dis		44.0 feet		N	oise Sc	ource El	evations	; (in fe	et)		
Centerline Dist. t		44.0 feet				Autos	s: 0.0	00	1		
Barrier Distance t	o Observer:	0.0 feet			Mediur	n Trucks	3: 2.2	97			
Observer Height (/	,	5.0 feet			Heav	y Trucks	s: 8.0	06	Grade Adj	ustment	: 0.0
	d Elevation:	0.0 feet				,			,		
	d Elevation:	0.0 feet		L	ane Eq		Distanc		feet)		
F	Road Grade:	0.0%				Autos					
	Left View:	-90.0 degree				n Trucks					
	Right View:	90.0 degree	es		Heav	y Trucks	s: 40.2	262			
FHWA Noise Mode											
VehicleType	REMEL	Traffic Flow	Distai		Finite		Fresn		Barrier Atte		rm Atten
Autos:	66.51	2.43		1.28		-1.20		4.61	0.0		0.000
Medium Trucks:	77.72	-14.80		1.31		-1.20		4.87	0.0		0.000
Heavy Trucks:	82.99	-18.76		1.31		-1.20		-5.50	0.0	00	0.000
Unmitigated Noise											
	Leq Peak Hour			eq Eve	~	Leq	Night		Ldn	-	NEL
Autos:	69.	-	67.1		65.4		59.3		67.9		68.5
Medium Trucks:	63.	-	61.5		55.2		53.6		62.1		62.3
Heavy Trucks: Vehicle Noise:	64. 71.	-	62.9 69.3		53.9 66.0		55.1 61.5		63.5 70.0		63.6 70.5
		-			00.0		01.5		70.0	'	70.5
Centerline Distance	e to Noise Co	ntour (in feet	,	70 dl	BA	65 (	dBA	6	0 dBA	55	dBA
			Ldn:	44			5		205		141
			VEL:	47		-	02		219		172
											-

	FHV	VA-RD-77-108	HIGH	NAY N	OISE PR	REDICTI	ON MODE	ïL		
Scenar	io: Horizon Ye	ar 2035 Plus Pr	oject			Project	Name: Be	dford Market	place	
Road Nan	ne: Eagle Glen	Pkwy.				Job N	umber: 12	751		
Road Segme	nt: e/o Bedford	l Cyn. Rd.								
	SPECIFIC IN	IPUT DATA						Del Inpu	TS	
Highway Data				S	Site Con	ditions	(Hard = 10	), Soft = 15)		
Average Daily	Traffic (Adt): 3	37,310 vehicles	;				AL	tos: 15		
Peak Hour	Percentage:	10%			Mee	dium Tru	icks (2 Axi	es): 15		
Peak H	lour Volume:	3,731 vehicles	;		Hea	avy Truc	ks (3+ Ax	es): 15		
Ve	hicle Speed:	45 mph		L.	/ehicle I	Mix				
Near/Far La	ne Distance:	76 feet		-		icleType	D	ay Evening	Night	Daily
Site Data					VCIII			.5% 12.9%		,
Ba	rrier Heiaht:	0.0 feet			Me	edium Tr	ucks: 84	.8% 4.9%	6 10.3	% 1.84
ва Barrier Type (0-W		0.0 reet			F	leavy Tr	ucks: 86	5.5% 2.7%	6 10.8	% 0.74
Centerline Di	. ,	0.0 65.0 feet								
Centerline Dist.		65.0 feet		^	loise Sc		evations	,		
Barrier Distance		0.0 feet				Autos				
Observer Height		5.0 feet				n Trucks				
	ad Flevation:	0.0 feet			Heav	y Trucks	8: 8.00	6 Grade A	djustme	nt: 0.0
	ad Elevation:	0.0 feet		L	ane Eq	uivalent	Distance	(in feet)		
	Road Grade:	0.0%				Autos	52.97	2		
	Left View:	-90.0 degree	s		Mediur	n Trucks	52.80	4		
	Right View:	90.0 degree			Heav	y Trucks	52.82	1		
FHWA Noise Mod	lel Calculation	s								
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresnel	Barrier A	tten B	erm Atter
Autos:	68.46	3.77		-0.48		-1.20	-4	.70 0	0.000	0.0
Medium Trucks:	79.45	-13.47		-0.46	;	-1.20	-4	.88 0	0.000	0.0
Heavy Trucks:	84.25	-17.43		-0.46	5	-1.20	-5	.30 0	0.000	0.00
Unmitigated Nois		<u> </u>	-							
VehicleType	Leq Peak Hou			Leq Ev	•	Leq	Night	Ldn		CNEL
Autos:			6.88		66.9		60.8		9.5	70
Medium Trucks:	• ·		52.8		56.5		54.9		3.4	63
	65		53.7		54.7		56.0	-	1.3	64
Heavy Trucks:		4	70.6		67.5		62.8	71	1.4	71
Vehicle Noise:										
,				70 -	0.4	05	10.4	00 -10 4		ID A
Vehicle Noise:		ontour (in feet)		70 d			1BA	60 dBA	1	55 dBA
Vehicle Noise:		ontour (in feet)	Ldn:	70 d 80	)	17	/BA 73 35	60 dBA 372 399	ł	55 dBA 801 859

Friday, November 22, 2019

	FH\	NA-RD-77-108	HIGH	IWAY N	IOISE PF	REDICTI	ON MO	DDEL			
Scenari	io: Horizon Ye	ar 2035 Plus F	roject			Project	Name:	Bedfor	d Marketpl	ace	
Road Nam	e: Cajalco Ro	L				Job N	umber:	12751			
Road Segmer	nt: e/o I-15 SE	8 Ramps									
	SPECIFIC IN	IPUT DATA			04-0					S	
Highway Data					Site Cor	ditions	(Hard		,		
Average Daily	, ,		s					Autos:	15		
	Percentage:	10%				dium Tru			15		
	our Volume:	3,456 vehicle	s		He	avy Truc	ks (3+	Axles):	15		
	hicle Speed:	45 mph		F	Vehicle	Mix					
Near/Far Lar	ne Distance:	76 feet		F	Veh	icleType	1	Day	Evening	Night	Daily
Site Data						A	lutos:	77.5%	12.9%	9.6%	97.429
Bai	rier Height:	0.0 feet			М	edium Tr	ucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-W	•	0.0			1	Heavy Tr	ucks:	86.5%	2.7%	10.8%	0.74
Centerline Dis	at. to Barrier:	65.0 feet		t t	Noise Se	ource El	evatio	ns (in fe	et)		
Centerline Dist.	to Observer:	65.0 feet		F		Autos		0.000	.,		
Barrier Distance	to Observer:	0.0 feet			Mediu	m Trucks		297			
Observer Height (J	Above Pad):	5.0 feet				vy Trucks		3.006	Grade Ad	iustment:	0.0
Pa	ad Elevation:	0.0 feet		4							
Roa	ad Elevation:	0.0 feet		-	Lane Eq				'eet)		
I	Road Grade:	0.0%				Autos		2.972			
	Left View:	-90.0 degre	es			m Trucks		2.804			
	Right View:	90.0 degre	es		Heav	y Trucks	s: 52	2.821			
FHWA Noise Mod		-									
VehicleType	REMEL	Traffic Flow		stance		Road	Fres		Barrier Att		m Atten
Autos:	68.46	3.43		-0.4	-	-1.20		-4.70		000	0.00
Medium Trucks:	79.45			-0.4	-	-1.20		-4.88		000	0.00
Heavy Trucks:	84.25	-17.76		-0.4	6	-1.20		-5.30	0.0	000	0.00
Unmitigated Noise										1	
VehicleType	Leq Peak Hou			Leq E		Leq	Night		Ldn		VEL
Autos:		).2	68.3		66.6		60		69.1		69.
Medium Trucks:	-	1.0	62.5		56.1		54		63.0	-	63.
Heavy Trucks:	-	1.8	63.4		54.4		55		64.0	-	64.
Vehicle Noise:	72	2.1	70.3		67.2		62	.5	71.0	)	71.
Centerline Distand	ce to Noise C	ontour (in feet	!)	=0		0.5					
			1 -1		dBA		dBA	6	0 dBA		dBA
			Ldn:	7	6	16	64		353	7	61
			NFI :	8	~		76		379		17

	FHW	A-RD-77-108	HIGHW	AY NO	ISE PF	REDICTI	ON MOD	DEL			
Road Nam	io: Horizon Yea ne: Cajalco Rd. nt: e/o I-15 NB		roject				Name: E umber: 1		d Marketpla	ace	
SITE	SPECIFIC IN	PUT DATA				N	IOISE N	IODE	L INPUTS	5	
Highway Data				Si	te Con	ditions	(Hard =	10, Sc	oft = 15)		
• •	Traffic (Adt): 3 Percentage:	3,314 vehicle: 10%	s		Me	dium Tri	ı cks (2 A	Autos:	15 15		
		3.331 vehicle:					ks (3+ A		15		
	hicle Speed:	45 mph	3			,		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	10		
	ne Distance:	76 feet		Ve	ehicle I						
Neal/I al La	ne Distance.	70 leet			Veh	icleType		Day	Evening	Night	Daily
Site Data								77.5%		9.6%	
Ba	rrier Height:	0.0 feet			M	edium Tr		84.8%		10.3%	
Barrier Type (0-W	all, 1-Berm):	0.0			ŀ	Heavy Ti	rucks:	86.5%	2.7%	10.8%	0.74%
Centerline Di	st. to Barrier:	65.0 feet		N	oise So	ource El	evations	s (in fe	et)		
Centerline Dist.	to Observer:	65.0 feet				Autos			.,		
Barrier Distance	to Observer:	0.0 feet			Mediu	m Trucks		97			
Observer Height (	Above Pad):	5.0 feet				/y Trucks		06	Grade Adj	ustment	0.0
Pi	ad Elevation:	0.0 feet									
Roi	ad Elevation:	0.0 feet		Lá	ane Eq	uivalent	t Distand	e (in t	feet)		
	Road Grade:	0.0%				Autos	s: 52.9	972			
	Left View:	-90.0 degree	es		Mediu	m Trucks	s: 52.8	304			
	Right View:	90.0 degree	es		Heav	y Trucks	s: 52.8	321			
FHWA Noise Mod	el Calculations										
VehicleType	REMEL	Traffic Flow	Distar	nce	Finite	Road	Fresn	el	Barrier Atte	en Ber	m Atten
Autos:	68.46	3.28		-0.48		-1.20		-4.70	0.0	00	0.000
Medium Trucks:	79.45	-13.96		-0.46		-1.20		-4.88	0.0	00	0.000
Heavy Trucks:	84.25	-17.92		-0.46		-1.20		-5.30	0.0	00	0.000
Unmitigated Nois			barrier a	attenu	ation)						
VehicleType	Leq Peak Hour	· Leq Day	' Le	eq Eve	ening	Leq	Night		Ldn	C	NEL
Autos:	70.		68.2		66.4		60.3		69.0		69.6
Medium Trucks:	63.	В	62.3		56.0		54.4		62.9		63.1
Heavy Trucks:	64.	7	63.3		54.2		55.5		63.8		63.9
Vehicle Noise:	71.	9	70.2		67.0		62.3		70.9	)	71.3
Centerline Distan	ce to Noise Co	ntour (in feet	)								
				70 dE	3A	65	dBA	6	0 dBA	55	dBA
			Ldn:	74		16	60		345	7	'43
		CI	VEL:	80		17	72		370	7	'97

Friday, November 22, 2019

	FHV	VA-RD-77-108	HIGHWA	Y NOISE P	REDICTI	ON MODE	:L	
		ar 2035 Plus Pr	oject				dford Marketpla	ace
	e: Cajalco Rd.				Job N	umber: 12	751	
Road Segmer	nt: e/o Grand O	Daks						
	SPECIFIC IN	IPUT DATA					DEL INPUTS	5
Highway Data				Site Co	nditions	(Hard = 10	0, Soft = 15)	
Average Daily	Traffic (Adt): 2	21,204 vehicles				AL	itos: 15	
Peak Hour	Percentage:	10%		М	edium Tru	icks (2 Axl	les): 15	
Peak H	our Volume:	2,120 vehicles		Н	eavy Truc	ks (3+ Axl	es): 15	
Vel	hicle Speed:	45 mph		Vehicle	Mix			
Near/Far Lar	ne Distance:	76 feet			hicleType	D	ay Evening	Night Daily
Site Data							7.5% 12.9%	9.6% 97.42%
Bar	rier Heiaht:	0.0 feet		٨	1edium Tr	ucks: 84	4.8% 4.9%	10.3% 1.84%
Barrier Type (0-W		0.0			Heavy Tr	ucks: 86	6.5% 2.7%	10.8% 0.74%
Centerline Dis		65.0 feet		Malaa			(1	
Centerline Dist. t		65.0 feet		Noise a	Auto:	evations (	,	
Barrier Distance t	to Observer:	0.0 feet		14-16			-	
Observer Height ()	Above Pad):	5.0 feet			Im Trucks			unternanti 0.0
Pa	d Elevation:	0.0 feet		Hea	vy Trucks	s: 8.00	6 Grade Adji	ustment: 0.0
Roa	ad Elevation:	0.0 feet		Lane E	quivalent	Distance	(in feet)	
F	Road Grade:	0.0%			Autos	s: 52.97	2	
	Left View:	-90.0 degree	s	Media	im Trucks	s: 52.80	4	
	Right View:	90.0 degree	s	Hea	wy Trucks	52.82	1	
FHWA Noise Mode	el Calculation:	s						
VehicleType	REMEL	Traffic Flow	Distan	ce Finite	e Road	Fresnel	Barrier Atte	en Berm Atten
Autos:	68.46	1.31		-0.48	-1.20	-4	.70 0.0	00 0.000
Medium Trucks:	79.45	-15.93		-0.46	-1.20	-4	.88 0.0	00 0.000
Heavy Trucks:	84.25	-19.88		-0.46	-1.20	-5	.30 0.0	00 0.000
Unmitigated Noise								
	Leq Peak Hou			q Evening	'	Night	Ldn	CNEL
Autos:	68		6.2	64.4		58.4	67.0	
Medium Trucks:	61		50.4	54.	-	52.5	60.9	• · · ·
Heavy Trucks:	62		61.3	52.3	-	53.5	61.9	
Vehicle Noise:	69	-	68.2	65.	)	60.4	68.9	69.4
Centerline Distance	ce to Noise Co	ontour (in feet)						
				70 dBA	65 (	dBA	60 dBA	55 dBA
			_dn: IEL:	55 59	11		255 274	550 590

	FHW	/A-RD-77-108	HIGH	WAY NC	DISE PF	REDICTI		DEL			
	io: Horizon Yea		oject						d Marketpl	ace	
	ne: Cajalco Rd.					Job Ni	umber:	12751			
Road Segme	nt: e/o Temesc	al Cyn. Rd.									
SITE	SPECIFIC IN	PUT DATA							L INPUT	S	
Highway Data				S	ite Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt): 3	1,238 vehicles	;					Autos:	15		
Peak Hour	Percentage:	10%			Me	dium Tru	cks (2 A	xles):	15		
Peak H	lour Volume:	3,124 vehicles	;		He	avy Truc	ks (3+ A	xles):	15		
Ve	hicle Speed:	45 mph		14	ehicle	Mar					
Near/Far La	ne Distance:	76 feet		V		icleTvpe	1	Dav	Evening	Night	Dailv
Site Data					ven		utos:	77.5%		9.6%	
						ہر edium Tr		84.8%		10.3%	1.849
	rrier Height:	0.0 feet				Heavy Tr		86.5%		10.3%	
Barrier Type (0-W	. ,	0.0			,	neavy II	UCKS.	00.3%	2.770	10.0%	0.749
Centerline Di		65.0 feet		N	oise So	ource Ele	evation	s (in fe	et)		
Centerline Dist.		65.0 feet				Autos	: 0.0	000			
Barrier Distance		0.0 feet			Mediu	m Trucks	: 2.	297			
Observer Height (	,	5.0 feet			Heav	y Trucks	: 8.	006	Grade Adj	ustment:	0.0
	ad Elevation:	0.0 feet			_						
	ad Elevation:	0.0 feet		La	ane Eq	uivalent			eet)		
	Road Grade:	0.0%				Autos					
	Left View:	-90.0 degree				m Trucks					
	Right View:	90.0 degree	s		Heav	ry Trucks	: 52.	321			
FHWA Noise Mod	el Calculations	6									
VehicleType	REMEL	Traffic Flow	Dist	tance	Finite	Road	Fresr	el	Barrier Att	en Ber	m Atten
Autos:	68.46	3.00		-0.48		-1.20		-4.70	0.0	00	0.00
Medium Trucks:	79.45	-14.24		-0.46		-1.20		-4.88	0.0	00	0.00
Heavy Trucks:	84.25	-18.20		-0.46		-1.20		-5.30	0.0	00	0.00
Unmitigated Nois	e Levels (with	out Topo and I	barrie	r attenu	ation)						
VehicleType	Leq Peak Hou	r Leq Day		Leq Eve	ening	Leq I	Vight		Ldn	CI	VEL
Autos:	69.	8 6	67.9		66.1		60.1		68.7	,	69.
Medium Trucks:	63.	5 6	62.0		55.7		54.1		62.6	5	62.
Heavy Trucks:	64.	4 6	63.0		53.9		55.2	2	63.5	5	63.
Vehicle Noise:	71.	66	39.9		66.7		62.0	)	70.6	6	71.
Centerline Distan	ce to Noise Co	ntour (in feet)									
			T	70 dE	BA	65 0	/BA	6	i0 dBA	55	dBA
			dn:	71		15	3		330	7	12

APPENDIX 7.2:

OFF-SITE SOIL IMPORT/EXPORT HAUL TRUCK CONSTRUCTION ANALYSIS



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Scenario: Without Project Haul Trips Road Name: I-15 Freeway Lot No: 20225 Bedford Canyon Rd.

	SPECIFIC IN	PUT DATA						L INPUTS	;	
Highway Data				Site Con	ditions	(Hard :	= 10, So	oft = 15)		
Average Daily	Traffic (Adt): 16	4,000 vehicles					Autos:	15		
Peak Hour	Percentage:	10%		Me	dium Tr	ucks (2	Axles):	15		
Peak F	lour Volume: 1	6,400 vehicles		He	avy Tru	cks (3+	Axles):	15		
Ve	hicle Speed:	65 mph		Vehicle I	Nix					
Near/Far La	ne Distance:	142 feet			icleType	9	Day	Evening	Night	Daily
Site Data						Autos:	75.5%	-	10.5%	
Ba	rrier Height:	16.0 feet		Me	ədium T	rucks:	48.9%		48.9%	1.95%
Barrier Type (0-N	-	0.0		ŀ	-leavy T	rucks:	47.3%	5.4%	47.3%	3.66%
Centerline Di	,	93.0 feet								
Centerline Dist.		162.0 feet		Noise So			•	et)		
Barrier Distance		69.0 feet			Auto		22.000			
Observer Height		5.0 feet			n Truck		24.297	Creada Adi	top a set	
-	ad Elevation:	928.0 feet		Heav	y Truck	s: 93	30.006	Grade Adj	ustment.	0.0
Ro	ad Elevation:	922.0 feet		Lane Equ	uivalent	t Distar	nce (in i	feet)		
Barr	ier Elevation:	922.0 feet			Auto	s: 13	31.342			
	Road Grade:	0.0%		Mediur	n Truck	s: 13	30.791			
				Heav	y Truck	s: 12	29.777			
FHWA Noise Mod		Traffic Flow	Distance	Finite	Dood	Fres	nol	Dorrior Atte	n Dor	m Atton
VehicleType	<i>REMEL</i> 75.54	8.46	Distance -6.		-1.20	ries	1.15	Barrier Atte -10.6		m Atten -13.60
Autos: Medium Trucks:		-8.39	-0. -6.		-1.20		0.93	-10.6 -10.0		-13.09
Heavy Trucks:		-5.65	-0. -6.		-1.20		0.93	-10.0 -8.4		-11.45
neavy Trucks.	05.21	-5.05	-0.	52	-1.20		0.49	-0.4	50	-11.45
Unmitigated Nois		-								
VehicleType	Leq Peak Hou	, ,		Evening	Leq	Night		Ldn		VEL
Autos:	76.		4.4	73.1		67		75.5		76.
Medium Trucks:			1.9	54.4		63		69.3		69.3
Heavy Trucks:			3.0	64.6		69		75.4		75.
Vehicle Noise:	78.	0 7	5.5	73.7		71	.9	79.0		79.
Mitigated Noise L	evels (with Top	o and barrier a	attenuatio	n)						
VehicleType	Leq Peak Hou	r Leq Day	Leq I	Evening	Leq	Night		Ldn	Cl	VEL
Autos:	65.	8 63	3.8	62.5		56	.5	64.9		65.
Medium Trucks:	55.	7 5 <sup>.</sup>	1.8	44.3		53	.0	59.2		59.
Heavy Trucks:	63.	6 59	9.5	56.2		60	.8	67.0		67.
Vehicle Noise:	68.		5.4	63.4		62	_	69.5		69.8

Scenario: Without Project Haul Trips Road Name: Magnolia Ave. Lot No: 1295 Magnolia Ave.

SITE	SPECIFIC IN	IPUT DATA				Г	IOISE	MODE	L INPU	JTS		
Highway Data				Si	te Con	ditions	(Hard	= 10, Sc	oft = 15)			
Average Daily	Traffic (Adt):	40,000 vehicles	5					Autos:	15			
Peak Hour	Percentage:	10%			Me	dium Tr	ucks (2	? Axles):	15			
Peak F	lour Volume:	4,000 vehicles	5		Hea	avy Tru	cks (3-	- Axles):	15			
Ve	hicle Speed:	45 mph		Ve	hicle N	<i>lix</i>						
Near/Far La	ne Distance:	74 feet				cleType	)	Day	Evenir	ng Ni	ght	Daily
Site Data							Autos:	75.5%		-	).5%	
Ba	rrier Height:	0.0 feet			Me	ədium T	rucks:	48.9%	b 2.2	.% 48	8.9%	1.84%
Barrier Type (0-W	•	0.0			ŀ	<del>l</del> eavy T	rucks:	47.3%	5.4	% 47	7.3%	0.74%
Centerline Di	,	82.0 feet		Nc	nico So	urco E	lovatio	ns (in fe				
Centerline Dist.	to Observer:	82.0 feet		740	<i>13e</i> 30	Auto		0.000				
Barrier Distance	to Observer:	0.0 feet			Modiur	n Truck		2.297				
Observer Height	(Above Pad):	5.0 feet				y Truck		8.006	Grade	Adiusti	ment <sup>.</sup>	0.0
P	ad Elevation:	0.0 feet								, age en		0.0
Ro	ad Elevation:	0.0 feet		La	ne Equ	livalen		nce (in i	feet)			
	ier Elevation:	0.0 feet				Auto		73.348				
	Road Grade:	0.0%				n Truck		73.228				
					Heav	y Truck	s:	73.240				
FHWA Noise Mod	el Calculation	S										
VehicleType	REMEL	Traffic Flow	Distand	ce	Finite	Road	Fre	snel	Barrier	Atten	Berr	n Atten
Autos:	69.34	4.07	-	2.60		-1.20		-4.74		0.000		0.00
Medium Trucks:	77.62	-13.17	-	2.59		-1.20		-4.88		0.000		0.00
Heavy Trucks:	82.14	-17.12	-	2.59		-1.20		-5.22		0.000		0.00
Unmitigated Nois	e Levels (with	out Topo and	barrier at	tenua	ation)							
VehicleType	Leq Peak Ho	ur Leq Day	' Le	q Eve	ning	Leq	Night		Ldn		C٨	IEL
Autos:	69	9.6	67.6		66.3		60	).3	6	8.7		69.
Medium Trucks:	60	).7	56.8		49.3		58	8.0	6	64.2		64.
Heavy Trucks:	61	.2	57.2		53.8		58	3.4	6	64.6		64.
Vehicle Noise:	70	).7	68.3		66.6		63	3.8	7	71.1		71.
Mitigated Noise L	evels (with To	po and barrier	attenuat	ion)								
VehicleType	Leq Peak Ho	ur Leq Day	' Le	q Eve	ning	Leq	Night		Ldn		C٨	IEL
Autos:	69	9.6	67.6		66.3		60	0.3	6	68.7		69.
Medium Trucks:	60	).7	56.8		49.3		58	8.0	6	64.2		64.
Heavy Trucks:	61	.2	57.2		53.8		58	3.4	6	64.6		64.
Vehicle Noise:	70	).7	68.3		66.6		63	8.8	7	71.1		71.

Scenario: Without Project Haul Trips Road Name: Sherborn St. Lot No: 1168 Sherborn St.

	SPECIFIC IN	IPUT DATA						L INPUT	S	
Highway Data				Site C	conditions	(Hard :	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	7,900 vehicles	6				Autos:	15		
Peak Hour	Percentage:	10%			Medium Ti	rucks (2	Axles):	15		
Peak H	lour Volume:	790 vehicles	5		Heavy Tru	ıcks (3+	Axles):	15		
Ve	hicle Speed:	35 mph		Vehic	le Mix					
Near/Far La	ne Distance:	12 feet			/ehicleType	e	Day	Evening	Night	Daily
Site Data						Autos:	75.5%	-	10.5%	
Ba	rrier Height:	0.0 feet			Medium 1	Frucks:	48.9%	2.2%	48.9%	1.84%
Barrier Type (0-W	-	0.0			Heavy 7	Trucks:	47.3%	5.4%	47.3%	0.74%
Centerline Di	,	130.0 feet		Noior	Sauraa E	lovatio	no (in fi	act)		
Centerline Dist.	to Observer:	130.0 feet		NOISE	Source E			et)		
Barrier Distance	to Observer:	0.0 feet		Mo	Auto dium Truck		0.000 2.297			
Observer Height (	(Above Pad):	5.0 feet			eavy Truck		8.006	Grade Ad	iustment	· 0 0
Pa	ad Elevation:	0.0 feet			-			-	uounoni	. 0.0
Roa	ad Elevation:	0.0 feet		Lane	Equivalen	t Distai	nce (in t	feet)		
Barn	ier Elevation:	0.0 feet			Auto	os: 12	29.958			
	Road Grade:	0.0%			dium Truck		29.890			
				H	eavy Truck	ks: 12	29.896			
FHWA Noise Mod	al Calculation	c								
VehicleType	REMEL	Traffic Flow	Distand	e Fir	nite Road	Fres	snel	Barrier Atte	en Ber	m Atten
Autos:	65.11	-1.88		6.33	-1.20		-4.80		000	0.00
Medium Trucks:	74.83			6.32	-1.20		-4.88		000	0.00
Heavy Trucks:	80.05			6.32	-1.20		-5.10		000	0.00
Unmitigated Noise	a Lovals (with	out Topo and	harrior at	tonuatio	n)					
VehicleType	Leg Peak Hou	-		q Evenin		Night		Ldn	C	VEL
Autos:	55		53.7	, ,	2.4	46	.4	54.8	I	55.4
Medium Trucks:	48		44.3		6.8	45		51.7		51.
Heavy Trucks:	49		45.4		2.0	46		52.9		52.
Vehicle Noise:			54.7		2.9	51		58.2		58.4
Mitigated Noise Le										
VehicleType	Leq Peak Hou	-		q Evenin	n lea	Night		Ldn	C	VEL
Autos:	•		53.7		2.4	46	.4	54.8		55.
Medium Trucks:	48		44.3		£.∓ 6.8	45		51.7		51.
Heavy Trucks:			45.4		2.0	46		52.9		52.9
	10			•		.0	••	02.0	-	

Scenario: With Project Haul Trips Road Name: I-15 Freeway Lot No: 20225 Bedford Canyon Rd.

SITE	SPECIFIC INF	PUT DATA					EL INPUTS		
Highway Data				Site Con	ditions (H	<i>lard = 10,</i> S	oft = 15)		
Average Daily	Traffic (Adt): 164	4,500 vehicles				Autos	: 15		
Peak Hour	Percentage:	10%		Me	dium Truc	ks (2 Axles)	: 15		
Peak H	lour Volume: 10	6,450 vehicles		He	avy Truck	s (3+ Axles)	: 15		
Ve	hicle Speed:	65 mph		Vehicle I	Mix				
Near/Far La	ne Distance:	142 feet			icleType	Day	Evening	Night	Daily
Site Data						utos: 75.5%	-	10.5%	
Ba	rrier Height:	16.0 feet		Me	edium Tru	cks: 48.9%	6 2.2%	48.9%	1.94%
Barrier Type (0-W	-	0.0		ŀ	-leavy Tru	cks: 47.3%	6 5.4%	47.3%	3.95%
Centerline Di	,	93.0 feet		Noise So	ource Elev	vations (in f	eet)		
Centerline Dist.	to Observer:	162.0 feet 69.0 feet			Autos:				
Barrier Distance	to Observer:		Mediur	n Trucks:					
Observer Height				y Trucks:		Grade Adju	stment:	0.0	
	ad Elevation:		Long Equ	uivalant [	Distance (in	fact			
	ad Elevation:		Lane Ly			leel)			
	ier Elevation:	922.0 feet		Madiu	Autos:				
	Road Grade:	0.0%			m Trucks: y Trucks:				
				//ouv	y muono.	120.111			
FHWA Noise Mod	el Calculations								
VehicleType		Traffic Flow	Distanc			Fresnel	Barrier Atter		m Atten
Autos:		8.46		5.39	-1.20	1.15			-13.60
Medium Trucks:	81.71	-8.39		6.37	-1.20	0.93			-13.09
Heavy Trucks:	85.21	-5.31	-6	6.32	-1.20	0.49	-8.45	0	-11.45
Unmitigated Nois	e Levels (witho	ut Topo and b	arrier att	enuation)					
VehicleType	Leq Peak Hour	Leq Day	Leq	Evening	Leq N	ight	Ldn	Cl	VEL
Autos:	76.4	4 7	4.4	73.1		67.1	75.5		76.
Medium Trucks:	65.7	7 6	51.9	54.3		63.1	69.3		69.3
Heavy Trucks:	72.4	4 6	8.3	64.9		69.6	75.8		75.
Vehicle Noise:	78.1	1 7	5.6	73.8		72.1	79.1		79.
Mitigated Noise L	evels (with Top	o and barrier	attenuati	on)					
VehicleType	Leq Peak Hour	Leq Day	Leq	Evening	Leq N	ight	Ldn	Cl	NEL
Autos:	65.8	86	3.8	62.5		56.5	64.9		65.
Medium Trucks:	55.7	7 5	51.8	44.3		53.0	59.2		59.
Heavy Trucks:	63.9	9 5	9.9	56.5		61.1	67.3		67.4
Vehicle Noise:	68.2								70.

Scenario: With Project Haul Trips Road Name: Magnolia Ave. Lot No: 1295 Magnolia Ave.

SITE	SPECIFIC IN	IPUT DATA							L INPU	ГS	
Highway Data				Site	e Cond	litions	(Hard :	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	40,500 vehicles	;					Autos:	15		
Peak Hour	Percentage:	10%			Med	lium Tru	ıcks (2	Axles):	15		
Peak F	lour Volume:	4,050 vehicles	5		Hea	ivy Truc	:ks (3+	Axles):	15		
Ve	hicle Speed:	45 mph		Vel	hicle M	lix					
Near/Far La	ne Distance:	74 feet				cleType		Day	Evening	Night	Daily
Site Data							Autos:	75.5%	_	-	-
Ba	rrier Height:	0.0 feet			Me	dium Ti	rucks:	48.9%	2.2%	5 48.9°	% 1.82%
Barrier Type (0-W	-	0.0			Н	leavy Ti	ucks:	47.3%	5.4%	5 47.3°	% 1.97%
Centerline Di		82.0 feet									
Centerline Dist.		82.0 feet		NO	ise Sol			ns (in fe	et)		
Barrier Distance		0.0 feet				Autos		0.000			
Observer Height	(Above Pad):	5.0 feet				n Trucks		2.297	Crada A	diuotmo	nt: 0 0
-	ad Elevation:	0.0 feet			Heavy	/ Trucks	5.	8.006	Grade A	ajusimer	<i>n.</i> 0.0
Ro	ad Elevation:	0.0 feet		Lai	ne Equ	ivalent	Dista	nce (in i	feet)		
Barr	ier Elevation:	0.0 feet				Autos	6: 7	73.348			
	Road Grade:	0.0%			Medium	n Trucks	s: 7	73.228			
					Heavy	/ Trucks	6: 7	73.240			
		_									
FHWA Noise Mod	REMEL	s Traffic Flow	Distand	20	Finite I	Dood	Fres	nol	Barrier A	tton D	erm Atten
VehicleType Autos:	69.34	4.07		2.60	riniter	-1.20	ries	-4.74		.000	0.00
Medium Trucks:	77.62	-13.16		2.59		-1.20		-4.74 -4.88		.000	0.00
Heavy Trucks:	82.14	-12.82		2.59		-1.20		-5.22		.000	0.00
-						-1.20		-0.22	0	.000	0.00
Unmitigated Noise		-			-						
VehicleType	Leq Peak Hou		1	q Ever	•	Leq I	Night		Ldn		CNEL
Autos:	69		67.6		66.3		60		68		69.3
Medium Trucks:	60		56.8		49.3		58		64		64.
Heavy Trucks:	65		61.5		58.1		62		68		69.
Vehicle Noise:	71	.4 0	68.8		67.0		65	.5	72	.5	72.
Mitigated Noise Lo	evels (with To	po and barrier	attenuat	tion)							
VehicleType	Leq Peak Hou	ır Leq Day	Le	q Ever	ning	Leq l	Night		Ldn	(	CNEL
Autos:	69	.6 (	67.6		66.3		60	.3	68	.7	69.
Medium Trucks:	60	.7	56.8		49.3		58	.0	64	.2	64.
Heavy Trucks:	65	.5 (	61.5		58.1		62	.7	68	.9	69.0
Vehicle Noise:	71	1	68.8		67.0		65	5	72	5	72.

Scenario: With Project Haul Trips Road Name: Sherborn St. Lot No: 1168 Sherborn St.

	SPECIFIC IN	IPUT DATA				IOISE MODE		
Highway Data				Site Cor	ditions	<i>(Hard</i> = 10, S	oft = 15)	
Average Daily	Traffic (Adt):	8,400 vehicles	i			Autos	: 15	
Peak Hour	Percentage:	10%		Me	edium Tr	ucks (2 Axles)	: 15	
Peak H	lour Volume:	840 vehicles	;	He	eavy Tru	cks (3+ Axles)	: 15	
Ve	hicle Speed:	35 mph		Vehicle	Mix			
Near/Far La	ne Distance:	12 feet			icleType	e Day	Evening N	light Daily
Site Data						Autos: 75.5%	-	10.5% 91.62%
Ba	rrier Height:	0.0 feet		N	ledium T	rucks: 48.9%	% 2.2% ·	48.9% 1.73%
Barrier Type (0-V	-	0.0			Heavy T	rucks: 47.39	% 5.4% ·	47.3% 6.65%
Centerline Di		130.0 feet		Naina C				
Centerline Dist.		130.0 feet		NOISE S		evations (in f	eet)	
Barrier Distance	to Observer:	0.0 feet			Auto			
Observer Height	(Above Pad):	5.0 feet			m Truck		Crada Adius	tmont: 0.0
P	ad Elevation:	0.0 feet		неа	vy Truck	s: 8.006	Grade Adjus	
Ro	ad Elevation:	0.0 feet		Lane Eq	uivalent	t Distance (in	feet)	
Barr	ier Elevation:	0.0 feet			Auto	s: 129.958		
	Road Grade:	0.0%		Mediu	m Truck	s: 129.890		
				Hea	vy Truck	s: 129.896		
FHWA Noise Mod		-						
VehicleType	REMEL	Traffic Flow	Distanc	e Finite	Road	Fresnel	Barrier Atten	Berm Atten
Autos:	65.11	-1.88		5.33	-1.20	-4.80		
Medium Trucks:	74.83	-19.12		5.32	-1.20	-4.88		
Heavy Trucks:	80.05	-13.28		5.32	-1.20	-5.10		
Unmitigated Nois	a Lovals (with	out Topo and I	harrior at	tonuation)				
VehicleType	Leg Peak Hou	-		Evening	Lea	Night	Ldn	CNEL
Autos:	55		53.7	, 52.4	-	46.4	54.8	55.4
Medium Trucks:	48		44.3	36.8		45.5	51.7	51.
Heavy Trucks:	59		55.2	51.8		56.5	62.7	62.7
Vehicle Noise:			57.7	55.2		57.2	63.6	63.8
Mitigated Noise L	evels (with To	po and barrier	attenuati	ion)				
VehicleType	Leq Peak Hou		T	, Evening	Leq	Night	Ldn	CNEL
Autos:	. 55		53.7	52.4	-	46.4	54.8	55.4
Medium Trucks:	48	.2 4	44.3	36.8		45.5	51.7	51.
Heavy Trucks:	59	2 4	55.2	51.8		56.5	62.7	62.
Theavy Trucks.	00	.2 .	50.L	01.0		00.0	02.1	02

APPENDIX 8.1:

**ON-SITE TRAFFIC NOISE ANALYSIS** 



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Scenario: Backyard With Wall Road Name: I-15 Freeway s/o Cajalco Rd. Lot No: Hotel Pool Area Project Name: Bedford Marketplace Job Number: 12751 Analyst: B. Lawson

	SPECIFIC INF	PUT DATA				DISE MODE		5	
Highway Data				Site Con	ditions (I	lard = 10, So	oft = 15)		
Average Daily	Traffic (Adt): 198	3,280 vehicles				Autos:	15		
Peak Hour	Percentage:	10%		Me	dium Truc	cks (2 Axles):	15		
Peak H	lour Volume: 19	9,828 vehicles		He	avy Truck	s (3+ Axles):	15		
Ve	hicle Speed:	65 mph		Vehicle I	<i>lix</i>				
Near/Far La	ne Distance:	142 feet			icleType	Day	Evening	Night	Daily
Site Data						utos: 77.5%	-	-	94.39%
Ba	rrier Height:	45.0 feet		M	ədium Tru	icks: 84.8%	<b>6</b> 4.9%	10.3%	1.95%
Barrier Type (0-W	•	0.0		ŀ	leavy Tru	icks: 86.5%	6 2.7%	10.8%	3.66%
Centerline Di		378.0 feet		Noise Sc	urco Elo	vations (in f			
Centerline Dist.	to Observer:	452.0 feet		10136 30	Autos:				
Barrier Distance	to Observer:	74.0 feet		Modiu	n Trucks:				
Observer Height (Above Pad): 5.0 feet					Grade Adj	ustmont	0.0		
Pa	ad Elevation:	919.2 feet			y Trucks:		-	usument.	0.0
Roa	ad Elevation:	892.0 feet		Lane Eq	uivalent l	Distance (in	feet)		
Barn	ier Elevation:	919.2 feet			Autos:	462.346			
	Road Grade:	0.0%		Mediur	n Trucks:	461.914			
				Heav	y Trucks:	460.900			
FHWA Noise Mode VehicleType		Traffic Flow	Distance	Finite	Road	Fresnel	Barrier Atte	n Ber	m Atten
Autos:	75.54	9.29	-14		-1.20	15.47	-17.7		-20.75
Medium Trucks:	81.71	-7.56	-14		-1.20	15.20	-17.7		-20.72
Heavy Trucks:	85.21	-4.83	-14		-1.20	14.56	-17.6		-20.64
-									20.01
Unmitigated Noise	Leg Peak Hour	-		,		light	l dia	~	VEL
VehicleType Autos:	<u>Leq Реак нош</u> 69.(		,	Evening 65.4	Leq N	0	Ldn 67.9		VEL 68.
Medium Trucks:	58.4			50.5		59.3 48.9	67.9 57.4		57.
Heavy Trucks:	56.2 64.6			50.5 54.2		40.9 55.4	63.8		63.
				65.8		61.1	69.6		70.
Vehicle Noise:	70.6					01.1	09.0		70.
Mitigated Noise Le	• •	1		,					
VehicleType	Leq Peak Hour			Evening	Leq N	-	Ldn		VEL
Autos:	51.3			47.6		41.6	50.2		50.
Medium Trucks:	40.6			32.8		31.2	39.7		39.
Heavy Trucks:	47.0	) 45	.5	36.5		37.8	46.1		46.
Vehicle Noise:		9 51		48.1		43.3	51.9		

Sunday, November 24, 2019

Scenario: First Floor With Wall Road Name: I-15 Freeway s/o Cajalco Rd. Lot No: Hotel

	SPECIFIC IN	IPUT DATA				DISE MODE		5	
Highway Data				Site Con	ditions (F	Hard = 10, S	oft = 15)		
Average Daily	Traffic (Adt): 1	98,280 vehicles				Autos.	15		
Peak Hour	Percentage:	10%		Me	dium Truc	cks (2 Axles).	15		
Peak H	lour Volume:	19,828 vehicles		He	avy Truck	s (3+ Axles).	15		
Ve	hicle Speed:	65 mph		Vehicle	Mix				
Near/Far La	ne Distance:	142 feet			icleType	Day	Evening	Night	Daily
Site Data				VCII		utos: 77.5%	-	-	94.39%
	rrier Height:	0.0 feet		М	edium Tru			10.3%	1.95%
Barrier Type (0-W	-	0.0 Teet			Heavy Tru			10.8%	3.66%
Centerline Dis		295.0 feet			-				
Centerline Dist.		378.0 feet		Noise So		vations (in f	eet)		
Barrier Distance		83.0 feet			Autos:				
Observer Height (		5.0 feet			m Trucks:		<u> </u>		
• •	ad Elevation:	919.2 feet		Heav	y Trucks:	900.006	Grade Adj	ustment:	0.0
	ad Elevation:	892.0 feet		Lane Eq	uivalent L	Distance (in	feet)		
	ier Elevation:	919.2 feet			Autos:	370.768			
	Road Grade:	0.0%		Mediu	m Trucks:	370.560			
				Heav	y Trucks:	370.122			
FHWA Noise Mode	el Calculation								
VehicleType	REMEL	Traffic Flow	Distance		Road	Fresnel	Barrier Atte	en Ber	m Atten
Autos:	75.54	9.29		.16	-1.20	0.03	-5.3		-8.30
Medium Trucks:	81.71	-7.56		.15	-1.20	0.02	-5.2		-8.20
Heavy Trucks:	85.21	-4.83	-13	.14	-1.20	0.00	-4.9	00	-7.90
Unmitigated Noise	e Levels (with	out Topo and I	barrier att	enuation)					
Unmitigated Noise VehicleType	e Levels (with Leq Peak Hou	-		<b>enuation)</b> Evening	Leq N	light	Ldn	CI	NEL
-		Ir Leq Day			Leq N	<i>ight</i> 60.8	<i>Ldn</i> 69.4		
VehicleType	Leq Peak Hou	Ir Leq Day .5 6	Leq	Evening	Leq N	-			70.
VehicleType Autos:	Leq Peak Hou 70	ır Leq Day .5 6 .8 5	Leq 8.6	Evening 66.8	Leq N	60.8	69.4		70. 59.
VehicleType Autos: Medium Trucks:	Leq Peak Hou 70 59	r Leq Day .5 6 .8 5 .0 6	Leq 58.6 58.3	<i>Evening</i> 66.8 51.9	Leq N	60.8 50.4	69.4 58.8		70. 59. 65.
VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	Leq Peak Hou 70 59 66 72	Image: Leq Day           .5         6           .8         5           .0         6           .1         7	<i>Leq</i> 58.6 58.3 54.6 70.3	Evening 66.8 51.9 55.6 67.3	Leq N	60.8 50.4 56.8	69.4 58.8 65.2		70. 59. 65.
VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	Leq Peak Hou 70 59 66 72	Ir         Leq Day           .5         6           .8         5           .0         6           .1         7           po and barrier	<i>Leq</i> 58.6 54.6 70.3 <b>attenuati</b>	Evening 66.8 51.9 55.6 67.3	Leq N	60.8 50.4 56.8 62.5	69.4 58.8 65.2	 	70. 59. 65.
VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Mitigated Noise Le	Leq Peak Hou 70 59 66 72 evels (with To	Leq Day           .5         6           .8         5           .0         6           .1         7           po and barrier           Ir         Leq Day	<i>Leq</i> 58.6 54.6 70.3 <b>attenuati</b>	Evening 66.8 51.9 55.6 67.3 on)		60.8 50.4 56.8 62.5	69.4 58.8 65.2 71.0	CI	70. 59. 65. 71. NEL
VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: <b>Mitigated Noise Le</b> VehicleType	Leq Peak Hou 70 59 66 72 evels (with To Leq Peak Hou	Leq Day           .5         6           .8         5           .0         6           .1         7           po and barrier         1           ur         Leq Day           .2         6	<i>Leq</i> 58.6 54.6 70.3 <i>attenuati</i> <i>Leq</i>	Evening 66.8 51.9 55.6 67.3 on) Evening		60.8 50.4 56.8 62.5	69.4 58.8 65.2 71.0 <i>Ldn</i>	CI	70. 59. 65. 71. NEL 64.
VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Mitigated Noise Le VehicleType Autos:	Leq Peak Hou 70 59 66 72 evels (with To Leq Peak Hou 65	Image: Leq Day           .5         6           .8         5           .0         6           .1         7           po and barrier         7           Image: Imag	<i>Leq</i> 58.6 54.6 70.3 <i>attenuati</i> <i>Leq</i> 53.3	Evening 66.8 51.9 55.6 67.3 on) Evening 61.5		60.8 50.4 56.8 62.5 <i>light</i> 55.5	69.4 58.8 65.2 71.0 <i>Ldn</i> 64.1	CI	70.0 59.7 65.3 71.8

Scenario: Second Floor With Wall Road Name: I-15 Freeway s/o Cajalco Rd. Lot No: Hotel

	SPECIFIC IN	PUT DATA					EL INPUT	S	
Highway Data				Site Con	ditions (	Hard = 10, \$	Soft = 15)		
Average Daily	Traffic (Adt): 19	8,280 vehicles				Auto	s: 15		
Peak Hour	· Percentage:	10%		Me	dium Tru	cks (2 Axles	): 15		
Peak H	lour Volume: 1	9,828 vehicles		He	avy Truci	ks (3+ Axles	): 15		
Ve	hicle Speed:	65 mph		Vehicle I	Mix				
Near/Far La	ane Distance:	142 feet			icleType	Day	Evening	Night	Daily
Site Data						utos: 77.5	-		94.39%
	rrier Height:	0.0 feet		M	edium Tri			10.3%	
Barrier Type (0-W	-	0.0 Teet		I	Heavy Tr			10.8%	
Centerline Di		295.0 feet			-				
Centerline Dist.		378.0 feet		Noise Sc		evations (in	-		
Barrier Distance		83.0 feet			Autos				
Observer Height (		15.0 feet			n Trucks				
•	ad Elevation:	919.2 feet		Heav	ry Trucks	: 900.006	Grade Ad	justment	: 0.0
	ad Elevation:	892.0 feet		Lane Eq	uivalent	Distance (ii	n feet)		
	ier Elevation:	919.2 feet			Autos	: 373.663			
,	Road Grade:	0.0%		Mediu	n Trucks	: 373.410	1		
				Heav	y Trucks	: 372.843			
					-				
FHWA Noise Mod									
VehicleType	REMEL	Traffic Flow	Distance			Fresnel	Barrier Att	en Ber	m Atten
			-13	<b>04</b>					
Autos:		9.29			-1.20	-0.24		000	
Medium Trucks:	81.71	-7.56	-13	.20	-1.20	-0.2	9 0.0	000	0.000
	81.71			.20			9 0.0		0.000
Medium Trucks: Heavy Trucks:	81.71 85.21	-7.56 -4.83	-13 -13	.20 .19	-1.20	-0.2	9 0.0	000	0.000
Medium Trucks: Heavy Trucks:	81.71 85.21	-7.56 -4.83 Dut Topo and I	-13 -13 <b>parrier atte</b>	.20 .19	-1.20	-0.29 -0.42	9 0.0	000	0.000
Medium Trucks: Heavy Trucks: <b>Unmitigated Noise</b>	81.71 85.21 <b>e Levels (witho</b> Leq Peak Hou	-7.56 -4.83 <b>Dut Topo and I</b> r Leq Day	-13 -13 <b>parrier atte</b>	.20 .19 enuation)	-1.20 -1.20	-0.29 -0.42	9 0.0 2 0.0	000 000 <i>Cl</i>	0.000 0.000 VEL
Medium Trucks: Heavy Trucks: <b>Unmitigated Noise</b> VehicleType	81.71 85.21 <b>e Levels (witho</b> Leq Peak Hou 70.	-7.56 -4.83 <b>Dut Topo and I</b> r Leq Day 4 6	-13 -13 Darrier atte Leq	.20 .19 <b>enuation)</b> Evening	-1.20 -1.20	-0.29 -0.42 light	9 0.0 2 0.0 Ldn	2000 2000 C/ 3	0.000 0.000 VEL 69.9
Medium Trucks: Heavy Trucks: <b>Unmitigated Noise</b> VehicleType Autos:	81.71 85.21 <b>e Levels (witho</b> Leq Peak Hou 70. 59.	-7.56 -4.83 <b>Dut Topo and I</b> r Leq Day 4 6 7 5	-13 -13 D <b>arrier atte</b> Leq 58.5	.20 .19 enuation) Evening 66.8	-1.20 -1.20	-0.29 -0.42 light 60.7	9 0.0 2 0.0 <u>Ldn</u> 69.3	2000 2000 C/ 3 3	0.000 0.000 <u>VEL</u> 69.9 59.0
Medium Trucks: Heavy Trucks: <b>Unmitigated Noise</b> VehicleType Autos: Medium Trucks:	81.71 85.21 <b>e Levels (witho</b> Leq Peak Hou 70. 59. 66.	-7.56 -4.83 <b>Dut Topo and I</b> r Leq Day 4 6 7 5 0 6	-13 -13 <b>Darrier atte</b> 68.5 68.2	.20 .19 enuation) Evening 66.8 51.9	-1.20 -1.20	-0.29 -0.42 light 60.7 50.3	9 0.0 2 0.0 <u>Ldn</u> 58.8	000 000 <i>Cl</i> 3 3 1	0.000 0.000 <u>VEL</u> 69.9 59.0 65.3
Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	81.71 85.21 <b>e Levels (witho</b> Leq Peak Hou 70. 59. 66. 72.	-7.56 -4.83 <b>Dut Topo and I</b> r Leq Day 4 6 7 5 0 6 0 7	-13 -13 <b>Darrier atte</b> 08.5 58.2 54.6 70.3	.20 .19 enuation) Evening 66.8 51.9 55.5 67.2	-1.20 -1.20	-0.29 -0.42 light 60.7 50.3 56.8	9 0.0 2 0.0 <u>Ldn</u> 69.3 58.8 65.7	000 000 <i>Cl</i> 3 3 1	0.000 0.000 <u>VEL</u> 69.9 59.0 65.3
Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Mitigated Noise Le	81.71 85.21 e Levels (witho Leq Peak Hou 70. 59. 66. 72. evels (with Top	-7.56 -4.83 <b>Dut Topo and R</b> r Leq Day 4 6 7 5 0 6 0 7 <b>Do and barrier</b>	-13 -13 Dearrier atte 28.5 58.2 54.6 70.3 attenuation	.20 .19 enuation) Evening 66.8 51.9 55.5 67.2 on)	-1.20 -1.20 Leq N	-0.29 -0.42 light 60.7 50.3 56.8 62.5	9 0.0 2 0.0 <u>Ldn</u> 69.3 58.8 65.7 71.0	000 000 3 3 1 0	0.000 0.000 <u>VEL</u> 69.9 59.0 65.3 71.9
Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Mitigated Noise Le VehicleType	81.71 85.21 e Levels (witho Leq Peak Hou 70. 59. 66. 72. evels (with Top Leq Peak Hou	-7.56 -4.83 <b>Dut Topo and I</b> r Leq Day 4 6 7 5 0 6 0 7 <b>Do and barrier</b> r Leq Day	-13 -13 Dearrier atte Leq 58.5 58.2 54.6 70.3 attenuation Leq	.20 .19 enuation) Evening 66.8 51.9 55.5 67.2 on) Evening	-1.20 -1.20	-0.29 -0.42 light 60.7 50.3 56.8 62.5	9 0.0 2 0.0 <u>Ldn</u> 69.3 58.8 65.7 71.0	000 000 200 200 200 200 200 200 200 200	0.000 0.000 VEL 69.9 65.3 71.5 VEL
Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Mitigated Noise Le	81.71 85.21 e Levels (witho Leq Peak Hou 70. 59. 66. 72. evels (with Top Leq Peak Hou 70.	-7.56 -4.83 <b>Dut Topo and R</b> r Leq Day 4 6 7 5 0 6 0 7 <b>Do and barrier</b> r Leq Day 4 6	-13 -13 Dearrier atte 20.3 20.3 attenuatie 20.3 58.5	.20 .19 enuation) Evening 66.8 51.9 55.5 67.2 on) Evening 66.8	-1.20 -1.20 Leq N	-0.29 -0.42 light 60.7 50.3 56.8 62.5 light 60.7	9 0.0 2 0.0 <u>Ldn</u> 69.3 58.8 65.7 71.0 <u>Ldn</u> 69.3	D00       D00       C/       3       3       1       D       2       C/       3	0.000 0.000 <u>VEL</u> 69.9 59.0 65.3 71.9 <u>VEL</u> 69.9
Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Mitigated Noise Le VehicleType Autos:	81.71 85.21 e Levels (withou 70. 59. 66. 72. evels (with Top Leq Peak Hou 70. 59.	-7.56 -4.83 <b>but Topo and I</b> r Leq Day 4 6 7 5 0 6 0 7 <b>bo and barrier</b> r Leq Day 4 6 7 5 6 7 6 7 6 7 7 6 7 7 7 7 7 7 7	-13 -13 Dearrier atte Leq 58.5 58.2 54.6 70.3 attenuation Leq	.20 .19 enuation) Evening 66.8 51.9 55.5 67.2 on) Evening	-1.20 -1.20 Leq N	-0.29 -0.42 light 60.7 50.3 56.8 62.5	9 0.0 2 0.0 <u>Ldn</u> 69.3 58.8 65.7 71.0	000 000 3 3 3 1 0 2 2 2 2 2 3 3 3	69.9 59.0 65.3 71.5

Scenario: Third Floor With Wall Road Name: I-15 Freeway s/o Cajalco Rd. Lot No: Hotel

	SPECIFIC IN	PUT DATA				DISE MODE		5	
Highway Data				Site Con	ditions (	Hard = 10, S	oft = 15)		
Average Daily	Traffic (Adt): 19	8,280 vehicles				Autos	15		
Peak Hour	Percentage:	10%		Me	dium True	cks (2 Axles)	: 15		
Peak F	lour Volume: 1	9,828 vehicles		He	avy Truck	(3+ Axles)	: 15		
Ve	hicle Speed:	65 mph		Vehicle	Mix				
Near/Far La	ne Distance:	142 feet			icleType	Day	Evening	Night	Daily
Site Data						utos: 77.5%	-	9.6%	-
Ba	rrier Height:	0.0 feet		M	edium Tru			10.3%	
Barrier Type (0-W	-	0.0			Heavy Tru	ıcks: 86.5%	6 2.7%	10.8%	3.66%
Centerline Di	,	295.0 feet					·		
Centerline Dist.		378.0 feet		Noise So		vations (in f	eet)		
Barrier Distance		83.0 feet			Autos:				
Observer Height	(Above Pad):	25.0 feet			m Trucks.		Crada Adi	untmont	
	ad Elevation:	919.2 feet		Heat	y Trucks.	900.006	Grade Adj	usimeni.	. 0.0
Ro	ad Elevation:	892.0 feet		Lane Eq	uivalent	Distance (in	feet)		
Barr	ier Elevation:	919.2 feet			Autos.	374.924			
	Road Grade:	0.0%		Mediu	m Trucks.	374.611			
				Heav	y Trucks	373.893			
FHWA Noise Mod VehicleType	REMEL	Traffic Flow	Distanc	o Einito	Road	Fresnel	Barrier Atte	n Bor	m Atten
Autos:		9.29		3.23	-1.20	-1.32	0.0		0.00
Medium Trucks:		-7.56		3.22	-1.20	-1.42	0.0		0.00
Heavy Trucks:		-4.83		3.21	-1.20	-1.69	0.0		0.00
-					1.20	1.00	0.0		0.000
Unmitigated Nois				,					
VehicleType	Leq Peak Hou			Evening	Leq N	0	Ldn		VEL
Autos:	70.		8.5	66.7		60.7	69.3		69.
Medium Trucks:			58.2	51.9		50.3	58.8		59.
Heavy Trucks:	66.		64.5	55.5		56.8	65.1		65.
Vehicle Noise:	72.	.0 1	0.3	67.2		62.4	71.0		71.4
Mitigated Noise L	evels (with Top	oo and barrier	attenuat	ion)					
VehicleType	Leq Peak Hou	r Leq Day	Lec	r Evening	Leq N	light	Ldn	CI	VEL
Autos:			8.5	66.7		60.7	69.3		69.
Medium Trucks:			58.2	51.9		50.3	58.8		59.
		<b>^</b>	1 E	<b></b>		56.8	65.1		65.2
Heavy Trucks: Vehicle Noise:		.0 6	64.5	55.5		50.0	05.1		00.

Scenario: Fourth Floor With Wall Road Name: I-15 Freeway s/o Cajalco Rd. Lot No: Hotel

	SPECIFIC IN	PUT DATA				DISE MODE		S	
Highway Data				Site Con	ditions (H	lard = 10, S	oft = 15)		
Average Daily	Traffic (Adt): 19	8,280 vehicles	6			Autos	: 15		
Peak Hour	Percentage:	10%		Me	dium Truc	ks (2 Axles)	: 15		
Peak H	lour Volume: 1	9,828 vehicles	6	He	avy Truck	s (3+ Axles)	: 15		
Ve	hicle Speed:	65 mph		Vehicle I	Mix				
Near/Far La	ne Distance:	142 feet			icleType	Day	Evening	Night	Daily
Site Data						utos: 77.5%	-	-	94.39%
	rrier Height:	0.0 feet		Me	edium Tru			10.3%	
Barrier Type (0-W	-	0.0 leet		ŀ	leavy Tru			10.8%	
Centerline Di		295.0 feet			-				
Centerline Dist.		378.0 feet		Noise So		vations (in f	eet)		
Barrier Distance		83.0 feet			Autos:				
Observer Height (		35.0 feet			n Trucks:		<u> </u>		
	ad Elevation:	919.2 feet		Heav	y Trucks:	900.006	Grade Adj	ustment.	: 0.0
	ad Elevation:	892.0 feet		Lane Equ	uivalent E	Distance (in	feet)		
	ier Elevation:	919.2 feet			Autos:	376.446	-		
,	Road Grade:	0.0%		Mediur	n Trucks:	376.074			
				Heav	y Trucks:	375.207			
					-				
FHWA Noise Mod									
VehicleType	REMEL	Traffic Flow	Distance	e Finite	Road	Fresnel	Barrier Atte	en Ber	m Atten
Autos:	75.54	9.29	-13		-1.20	-3.18	0.0	000	0.000
Autos: Medium Trucks:	75.54 81.71	-7.56	-13	.25	-1.20	-3.34	0.0 0.0	000 000	0.000 0.000
Autos:	75.54 81.71			.25			0.0 0.0	000 000	0.000 0.000
Autos: Medium Trucks: Heavy Trucks:	75.54 81.71 85.21	-7.56 -4.83	-13 -13	.25 .23	-1.20	-3.34	0.0 0.0	000 000	0.000 0.000
Autos: Medium Trucks: Heavy Trucks:	75.54 81.71 85.21	-7.56 -4.83 Dut Topo and	-13 -13 <b>barrier atte</b>	.25 .23	-1.20	-3.34 -3.75	0.0 0.0	000 000 000	0.000 0.000
Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Noise</b>	75.54 81.71 85.21 e Levels (witho	-7.56 -4.83 <b>Dut Topo and</b> r Leq Day	-13 -13 <b>barrier atte</b>	.25 .23 enuation)	-1.20 -1.20	-3.34 -3.75	0.0 0.0 0.0	000 000 000 <i>CI</i>	0.000 0.000 0.000
Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Noise</b> VehicleType	75.54 81.71 85.21 <b>e Levels (witho</b> Leq Peak Hou 70.	-7.56 -4.83 <b>Dut Topo and</b> r Leq Day 4 0	-13 -13 barrier atte	.25 .23 enuation) Evening	-1.20 -1.20	-3.34 -3.75 ight	0.0 0.0 0.0 <i>Ldn</i>	000 000 000 <i>Cl</i>	0.000 0.000 0.000 VEL 69.9
Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Noise</b> VehicleType Autos:	75.54 81.71 85.21 <b>e Levels (witho</b> Leq Peak Hou 70.	-7.56 -4.83 <b>Dut Topo and</b> r Leq Day 4 0 7	-13 -13 <b>barrier atte</b> Leq 68.5	.25 .23 enuation) Evening 66.7	-1.20 -1.20	-3.34 -3.75 ight 60.7	0.0 0.0 0.0 <i>Ldn</i> 69.3	000 000 000 <i>C1</i>	0.000 0.000 0.000 VEL 69.9 59.0
Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Noise</b> VehicleType Autos: Medium Trucks:	75.54 81.71 85.21 <b>e Levels (witho</b> Leq Peak Hou 70. 59. 65.	-7.56 -4.83 <b>Dut Topo and</b> r Leq Day 4 7 9	-13 -13 barrier atte Leq 68.5 58.2	.25 .23 enuation) Evening 66.7 51.8	-1.20 -1.20	-3.34 -3.75 ight 60.7 50.3	0.0 0.0 0.0 <i>Ldn</i> 69.3 58.7	000 000 000 <i>CI</i>	0.000 0.000 0.000 VEL 69.9 59.0 65.2
Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Noise</b> VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	75.54 81.71 85.21 <b>e Levels (witho</b> Leq Peak Hou 70. 59. 65. 72.	-7.56 -4.83 <b>Dut Topo and A</b> r Leq Day 4 7 9 0	-13 -13 <b>barrier atte</b> 68.5 58.2 64.5 70.2	.25 .23 enuation) Evening 66.7 51.8 55.5 67.2	-1.20 -1.20	-3.34 -3.75 ight 60.7 50.3 56.7	0.0 0.0 0.0 <i>Ldn</i> 69.3 58.7 65.1	000 000 000 <i>CI</i>	0.000 0.000 0.000 VEL 69.9 59.0 65.2
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Mitigated Noise Le	75.54 81.71 85.21 e Levels (witho Leq Peak Hou 70. 59. 65. 72. evels (with Top	-7.56 -4.83 <b>Dut Topo and</b> r Leq Day 4 7 9 0 0 <b>Do and barrier</b>	-13 -13 barrier atte 68.5 58.2 64.5 70.2	.25 .23 enuation) Evening 66.7 51.8 55.5 67.2 on)	-1.20 -1.20 Leq N	-3.34 -3.75 ight 60.7 50.3 56.7 62.4	0.0 0.0 0.0 <i>Ldn</i> 69.3 58.7 65.1 71.0	000 000 000 <i>C1</i> 3	0.000 0.000 0.000 VEL 69.9 59.0 65.2 71.4
Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Noise</b> VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise Vehicle Noise	75.54 81.71 85.21 <b>e Levels (witho</b> Leq Peak Hou 70. 59. 65. 72. <b>evels (with Toj</b> Leq Peak Hou	-7.56 -4.83 out Topo and a r Leq Day 4 7 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-13 -13 barrier atte Leq 68.5 58.2 64.5 70.2 r attenuation Leq	.25 .23 enuation) Evening 66.7 51.8 55.5 67.2 on) Evening	-1.20 -1.20	-3.34 -3.75 ight 60.7 50.3 56.7 62.4 ight	0.0 0.0 0.0 <i>Ldn</i> 69.3 58.7 65.1 71.0 <i>Ldn</i>	000 000 000 <i>Cl</i>	0.000 0.000 VEL 69.9 59.0 65.2 71.4
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Mitigated Noise Le VehicleType Autos:	75.54 81.71 85.21 e Levels (witho Leq Peak Hou 70. 59. 65. 72. evels (with Top Leq Peak Hou 70.	-7.56 -4.83 <b>Dut Topo and</b> r Leq Day 4 0 7 9 0 0 0 <b>Do and barrier</b> r Leq Day 4 0	-13 -13 barrier atte 68.5 58.2 64.5 70.2 c attenuatio Leq 68.5	.25 .23 Evening 66.7 51.8 55.5 67.2 on) Evening 66.7	-1.20 -1.20 Leq N	-3.34 -3.75 ight 60.7 50.3 56.7 62.4 ight 60.7	0.0 0.0 0.0 0.0 69.3 58.7 65.1 71.0 <i>Ldn</i> 69.3	000 000 000 <i>CI</i>	0.000 0.000 VEL 69.9 59.0 65.2 71.4 VEL 69.9
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise Vehicle Noise Lo VehicleType	75.54 81.71 85.21 e Levels (witho Leq Peak Hou 70. 59. 65. 72. evels (with Top Leq Peak Hou 70. 59.	-7.56 -4.83 <b>Dut Topo and</b> r Leq Day 4 7 9 0 0 <b>Do and barrier</b> r Leq Day 4 7 4 7 7 1 1 1 1 1 1 1 1 1 1 1 1 1	-13 -13 barrier atte Leq 68.5 58.2 64.5 70.2 r attenuation Leq	.25 .23 enuation) Evening 66.7 51.8 55.5 67.2 on) Evening	-1.20 -1.20 Leq N	-3.34 -3.75 ight 60.7 50.3 56.7 62.4 ight	0.0 0.0 0.0 <i>Ldn</i> 69.3 58.7 65.1 71.0 <i>Ldn</i>	000 000 000 <i>CI</i>	0.000 0.000 0.000 VEL 69.9 59.0 65.2 71.4

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APPENDIX 10.1:

**OPERATIONAL NOISE LEVEL CALCULATIONS** 



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## **Observer Location:** R1

*Source:* Air Conditioning Unit (Roof-Top) *Condition:* Operational

Project Name: Bedford Marketplace Job Number: 12751 Analyst: B. Lawson

NOISE MODEL INPUTS							
Noise Distance to Observer	455.0 feet	Barrier Height:	6.0 feet				
Noise Distance to Barrier:	445.0 feet	Noise Source Height:	5.0 feet				
Barrier Distance to Observer:	10.0 feet	Observer Height:	5.0 feet				
Observer Elevation:	995.0 feet	Barrier Type (0-Wall, 1-Berm):	0				
Noise Source Elevation:	952.0 feet	Drop Off Coefficient:	20.0				
Barrier Elevation:	995.0 feet	20 = 6 dPA per doubling					

NOISE MODEL PROJECTIONS								
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax	
Reference (Sample)	5.0	77.2	74.4	76.1	77.4	77.7	78.2	
Distance Attenuation	455.0	-39.2	-39.2	-39.2	-39.2	-39.2	-39.2	
Shielding (Barrier Attenuation)	445.0	-6.7	-6.7	-6.7	-6.7	-6.7	-6.7	
Raw (Distance + Barrier)		31.3	28.5	30.2	31.5	31.8	32.3	
60 Minute Hourly Adjustmer	nt	31.3	28.5	30.2	31.5	31.8	32.3	

S	TATIONARY SOURCE N	OISE PREDICTION MODEL	11/24/2019
<b>Observer Location: R1</b> Source: Drive-Thro Condition: Operation	ough Speakerphone al	Project Name: Bedford Marketplace Job Number: 12751 Analyst: B. Lawson	
	NOISE MO	DEL INPUTS	
Noise Distance to Observer	751.0 feet	Barrier Height:	6.0 feet
Noise Distance to Barrier:	741.0 feet	Noise Source Height:	3.0 feet
Barrier Distance to Observer:	10.0 feet	Observer Height:	5.0 feet
Observer Elevation:	995.0 feet	Barrier Type (0-Wall, 1-Berm):	0
Noise Source Elevation:	929.0 feet	Drop Off Coefficient:	20.0
Barrier Elevation:	995.0 feet	20 = 6 dBA per doubling o 15 = 4.5 dBA per doubling	

NOISE MODEL PROJECTIONS								
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax	
Reference (Sample)	15.0	62.0	60.9	62.1	63.6	65.3	66.4	
Distance Attenuation	751.0	-34.0	-34.0	-34.0	-34.0	-34.0	-34.0	
Shielding (Barrier Attenuation)	741.0	-6.6	-6.6	-6.6	-6.6	-6.6	-6.6	
Raw (Distance + Barrier)		21.4	20.3	21.5	23.0	24.7	25.8	
60 Minute Hourly Adjustmer	it	21.4	20.3	21.5	23.0	24.7	25.8	

**Observer Location: R1** 

Source: Trash Enclosure Condition: Operational Project Name: Bedford Marketplace Job Number: 12751 Analyst: B. Lawson

NOISE MODEL INPUTS							
Noise Distance to Observer	527.0 feet	Barrier Height:	6.0 feet				
Noise Distance to Barrier:	517.0 feet	Noise Source Height:	4.0 feet				
Barrier Distance to Observer:	10.0 feet	Observer Height:	5.0 feet				
Observer Elevation:	995.0 feet	Barrier Type (0-Wall, 1-Berm):	0				
Noise Source Elevation:	932.0 feet	Drop Off Coefficient:	20.0				
Barrier Elevation:	995.0 feet	20 = 6 dBA per doubling c 15 = 4.5 dBA per doubling					

NOISE MODEL PROJECTIONS								
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax	
Reference (Sample)	5.0	77.3	69.0	75.0	82.0	87.0	88.5	
Distance Attenuation	527.0	-40.5	-40.5	-40.5	-40.5	-40.5	-40.5	
Shielding (Barrier Attenuation)	517.0	-7.1	-7.1	-7.1	-7.1	-7.1	-7.1	
Raw (Distance + Barrier)		29.7	21.4	27.4	34.4	39.4	40.9	
20 Minute Hourly Adjustmen	it	24.9	16.6	22.6	29.6	34.6	36.1	

S	TATIONARY SOURC	E NOISE PREDICTION MODEL	11/24/2019					
Observer Location: R1 Source: Parking Lot Condition: Operational		Project Name: Bedford Marketplace Job Number: 12751 Analyst: B. Lawson						
NOISE MODEL INPUTS								
Noise Distance to Observer	584.0 feet	Barrier Height:	6.0 feet					
Noise Distance to Barrier:	574.0 feet	Noise Source Height:	5.0 feet					
Barrier Distance to Observer:	10.0 feet	Observer Height:	5.0 feet					
Observer Elevation:	995.0 feet	Barrier Type (0-Wall, 1-Berm):	0					
Noise Source Elevation:	931.0 feet	Drop Off Coefficient:	20.0					
Barrier Elevation:	995.0 feet	20 = 6 dBA per doubling o 15 = 4.5 dBA per doubling						

NOISE MODEL PROJECTIONS								
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax	
Reference (Sample)	5.0	60.1	56.7	60.7	63.7	67.1	79.5	
Distance Attenuation	584.0	-41.3	-41.3	-41.3	-41.3	-41.3	-41.3	
Shielding (Barrier Attenuation)	574.0	-6.9	-6.9	-6.9	-6.9	-6.9	-6.9	
Raw (Distance + Barrier)		11.9	8.5	12.5	15.5	18.9	31.3	
60 Minute Hourly Adjustmer	nt	11.9	8.5	12.5	15.5	18.9	31.3	

**Observer Location:** R1

11/24/2019

*Source:* Gas Station Activity *Condition:* Operational

NOISE MODEL INPUTS									
Noise Distance to Observer	601.0 feet	Barrier Height:	6.0 feet						
Noise Distance to Barrier:	591.0 feet	Noise Source Height:	5.0 feet						
Barrier Distance to Observer:	10.0 feet	Observer Height:	5.0 feet						
Observer Elevation:	995.0 feet	Barrier Type (0-Wall, 1-Berm):	0						
Noise Source Elevation:	931.0 feet	Drop Off Coefficient:	20.0						
Barrier Elevation:	995.0 feet	20 = 6 dBA per doubling c 15 = 4.5 dBA per doubling							

NOISE MODEL PROJECTIONS									
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax		
Reference (Sample)	5.0	68.2	65.6	66.9	69.5	74.4	82.4		
Distance Attenuation	601.0	-41.6	-41.6	-41.6	-41.6	-41.6	-41.6		
Shielding (Barrier Attenuation)	591.0	-6.9	-6.9	-6.9	-6.9	-6.9	-6.9		
Raw (Distance + Barrier)		19.7	17.1	18.4	21.0	25.9	33.9		
60 Minute Hourly Adjustmer	nt	19.7	17.1	18.4	21.0	25.9	33.9		

S	TATIONARY SOURC	E NOISE PREDICTION MODEL	11/24/2019
<b>Observer Location: R1</b> Source: Car Wash Tunnel Condition: Operational		Project Name: Bedford Marketplace Job Number: 12751 Analyst: B. Lawson	
	NOISE N	MODEL INPUTS	
Noise Distance to Observer	585.0 feet	Barrier Height:	6.0 feet
Noise Distance to Barrier:	575.0 feet	Noise Source Height:	8.0 feet
Barrier Distance to Observer:	10.0 feet	Observer Height:	5.0 feet
Observer Elevation:	995.0 feet	Barrier Type (0-Wall, 1-Berm):	0
Noise Source Elevation:	931.0 feet	Drop Off Coefficient:	20.0
Barrier Elevation:	995.0 feet	20 = 6 dBA per doubling o 15 = 4.5 dBA per doubling	

NOISE MODEL PROJECTIONS									
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax		
Reference (Sample)	10.0	88.3	81.6	92.0	92.6	93.3	93.8		
Distance Attenuation	585.0	-35.3	-35.3	-35.3	-35.3	-35.3	-35.3		
Shielding (Barrier Attenuation)	575.0	-6.9	-6.9	-6.9	-6.9	-6.9	-6.9		
Raw (Distance + Barrier)		46.1	39.4	49.8	50.4	51.1	51.6		
60 Minute Hourly Adjustmen	it	46.1	39.4	49.8	50.4	51.1	51.6		

#### **Observer Location:** R1

Source: Car Wash Vacuum Activity Condition: Operational Project Name: Bedford Marketplace Job Number: 12751 Analyst: B. Lawson

NOISE MODEL INPUTS								
Noise Distance to Observer	618.0 feet	Barrier Height:	6.0 feet					
Noise Distance to Barrier:	608.0 feet	Noise Source Height:	5.0 feet					
Barrier Distance to Observer:	10.0 feet	Observer Height:	5.0 feet					
Observer Elevation:	995.0 feet	Barrier Type (0-Wall, 1-Berm):	0					
Noise Source Elevation:	931.0 feet	Drop Off Coefficient:	20.0					
Barrier Elevation:	995.0 feet	20 = 6 dBA per doubling o 15 = 4.5 dBA per doubling						

NOISE MODEL PROJECTIONS									
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax		
Reference (Sample)	5.0	74.6	74.2	75.4	77.2	78.0	78.8		
Distance Attenuation	618.0	-41.8	-41.8	-41.8	-41.8	-41.8	-41.8		
Shielding (Barrier Attenuation)	608.0	-6.8	-6.8	-6.8	-6.8	-6.8	-6.8		
Raw (Distance + Barrier)		26.0	25.6	26.8	28.6	29.4	30.2		
60 Minute Hourly Adjustmer	nt	26.0	25.6	26.8	28.6	29.4	30.2		

S	TATIONARY SOURC	E NOISE PREDICTION MODEL	11/24/2019
<b>Observer Location:</b> R1 Source: Outdoor Playground <i>Condition:</i> Operational		Project Name: Bedford Marketplace Job Number: 12751 Analyst: B. Lawson	
	NOISE N	NODEL INPUTS	
Noise Distance to Observer Noise Distance to Barrier: Barrier Distance to Observer:	751.0 feet 741.0 feet 10.0 feet	<b>Barrier Height:</b> Noise Source Height: Observer Height:	6.0 feet 5.0 feet 5.0 feet
<i>Observer Elevation: Noise Source Elevation: Barrier Elevation:</i>	995.0 feet 923.0 feet 995.0 feet	Barrier Type (0-Wall, 1-Berm): Drop Off Coefficient: 20 = 6 dBA per doubling o 15 = 4.5 dBA per doubling	

NOISE MODEL PROJECTIONS								
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax	
Reference (Sample)	5.0	63.4	61.7	64.1	67.0	69.7	73.9	
Distance Attenuation	751.0	-43.5	-43.5	-43.5	-43.5	-43.5	-43.5	
Shielding (Barrier Attenuation)	741.0	-6.7	-6.7	-6.7	-6.7	-6.7	-6.7	
Raw (Distance + Barrier)		13.2	11.5	13.9	16.8	19.5	23.7	
60 Minute Hourly Adjustmer	nt	13.2	11.5	13.9	16.8	19.5	23.7	

## **Observer Location:** R2

*Source:* Air Conditioning Unit (Roof-Top) *Condition:* Operational

Project Name: Bedford Marketplace Job Number: 12751 Analyst: B. Lawson

NOISE MODEL INPUTS								
Noise Distance to Observer	1,815.0 feet	Barrier Height:	0.0 feet					
Noise Distance to Barrier:	1,815.0 feet	Noise Source Height:	5.0 feet					
Barrier Distance to Observer:	0.0 feet	Observer Height:	5.0 feet					
Observer Elevation:	983.0 feet	Barrier Type (0-Wall, 1-Berm):	0					
Noise Source Elevation:	963.0 feet	Drop Off Coefficient:	20.0					
Barrier Elevation:	983.0 feet	20 = 6 dBA per doubling o 15 = 4.5 dBA per doubling						

NOISE MODEL PROJECTIONS									
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax		
Reference (Sample)	5.0	77.2	74.4	76.1	77.4	77.7	78.2		
Distance Attenuation	1,815.0	-51.2	-51.2	-51.2	-51.2	-51.2	-51.2		
Shielding (Barrier Attenuation)	1,815.0	0.0	0.0	0.0	0.0	0.0	0.0		
Raw (Distance + Barrier)		26.0	23.2	24.9	26.2	26.5	27.0		
60 Minute Hourly Adjustmer	nt	26.0	23.2	24.9	26.2	26.5	27.0		

STAT		CE NOISE PREDICTION MODEL	11/24/2019
<b>Observer Location: R2</b> Source: Drive-Through Condition: Operational	l Speakerphone	Project Name: Bedford Marketplace Job Number: 12751 Analyst: B. Lawson	
	NOISE	MODEL INPUTS	
Noise Distance to Observer 2,77	7.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier: 2,77	7.0 feet	Noise Source Height:	3.0 feet
Barrier Distance to Observer:	0.0 feet	Observer Height:	5.0 feet
Observer Elevation: 98	33.0 feet	Barrier Type (0-Wall, 1-Berm):	0
	29.0 feet	Drop Off Coefficient:	20.0
	33.0 feet	20 = 6 dBA per doubling of 15 = 4.5 dBA per doubling	

NOISE MODEL PROJECTIONS							
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	15.0	62.0	60.9	62.1	63.6	65.3	66.4
Distance Attenuation	2,777.0	-45.3	-45.3	-45.3	-45.3	-45.3	-45.3
Shielding (Barrier Attenuation)	2,777.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		16.7	15.6	16.8	18.3	20.0	21.1
60 Minute Hourly Adjustmer	nt	16.7	15.6	16.8	18.3	20.0	21.1

**Observer Location: R2** 

Source: Trash Enclosure Condition: Operational Project Name: Bedford Marketplace Job Number: 12751 Analyst: B. Lawson

#### **NOISE MODEL INPUTS** Barrier Height: Noise Distance to Observer 1,910.0 feet 0.0 feet Noise Source Height: 4.0 feet Noise Distance to Barrier: 1,910.0 feet Observer Height: 5.0 feet Barrier Distance to Observer: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0 Observer Elevation: 983.0 feet Drop Off Coefficient: 20.0 Noise Source Elevation: 921.0 feet 20 = 6 dBA per doubling of distance Barrier Elevation: 983.0 feet 15 = 4.5 dBA per doubling of distance

NOISE MODEL PROJECTIONS									
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax		
Reference (Sample)	5.0	77.3	69.0	75.0	82.0	87.0	88.5		
Distance Attenuation	1,910.0	-51.6	-51.6	-51.6	-51.6	-51.6	-51.6		
Shielding (Barrier Attenuation)	1,910.0	0.0	0.0	0.0	0.0	0.0	0.0		
Raw (Distance + Barrier)		25.7	17.4	23.4	30.4	35.4	36.9		
20 Minute Hourly Adjustmer	nt	20.9	12.6	18.6	25.6	30.6	32.1		

STATIONARY SC	OURCE NOISE PREDICTION MODEL	11/24/2019
<b>Observer Location: R2</b> Source: Parking Lot Condition: Operational	Project Name: Bedford Marketplace Job Number: 12751 Analyst: B. Lawson	
NO	ISE MODEL INPUTS	
Noise Distance to Observer 1,775.0 feet Noise Distance to Barrier: 1,775.0 feet Barrier Distance to Observer: 0.0 feet	<b>Barrier Height:</b> Noise Source Height: Observer Height:	<b>0.0 feet</b> 5.0 feet 5.0 feet
Observer Elevation: 983.0 feet Noise Source Elevation: 918.0 feet Barrier Elevation: 983.0 feet	Barrier Type (0-Wall, 1-Berm): Drop Off Coefficient: 20 = 6 dBA per doubling of 15 = 4.5 dBA per doubling	

NOISE MODEL PROJECTIONS								
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax	
Reference (Sample)	5.0	60.1	56.7	60.7	63.7	67.1	79.5	
Distance Attenuation	1,775.0	-51.0	-51.0	-51.0	-51.0	-51.0	-51.0	
Shielding (Barrier Attenuation)	1,775.0	0.0	0.0	0.0	0.0	0.0	0.0	
Raw (Distance + Barrier)		9.1	5.7	9.7	12.7	16.1	28.5	
60 Minute Hourly Adjustmer	nt	9.1	5.7	9.7	12.7	16.1	28.5	

**Observer Location: R2** 

Source: Gas Station Activity Condition: Operational Project Name: Bedford Marketplace Job Number: 12751 Analyst: B. Lawson 11/24/2019

#### **NOISE MODEL INPUTS** Barrier Height: Noise Distance to Observer 2,940.0 feet 0.0 feet Noise Source Height: 5.0 feet Noise Distance to Barrier: 2,940.0 feet Observer Height: 5.0 feet Barrier Distance to Observer: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0 Observer Elevation: 983.0 feet Drop Off Coefficient: 20.0 Noise Source Elevation: 931.0 feet 20 = 6 dBA per doubling of distance Barrier Elevation: 983.0 feet 15 = 4.5 dBA per doubling of distance

NOISE MODEL PROJECTIONS								
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax	
Reference (Sample)	5.0	68.2	65.6	66.9	69.5	74.4	82.4	
Distance Attenuation	2,940.0	-55.4	-55.4	-55.4	-55.4	-55.4	-55.4	
Shielding (Barrier Attenuation)	2,940.0	0.0	0.0	0.0	0.0	0.0	0.0	
Raw (Distance + Barrier)		12.8	10.2	11.5	14.1	19.0	27.0	
60 Minute Hourly Adjustmer	nt	12.8	10.2	11.5	14.1	19.0	27.0	

STATIONARY S	OURCE NOISE PREDICTION MODEL	11/24/2019
<b>Observer Location: R2</b> Source: Car Wash Tunnel Condition: Operational	Project Name: Bedford Marketplace Job Number: 12751 Analyst: B. Lawson	
N	DISE MODEL INPUTS	
Noise Distance to Observer 3,108.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier: 3,108.0 feet	Noise Source Height:	8.0 feet
Barrier Distance to Observer: 0.0 feet	Observer Height:	5.0 feet
Observer Elevation: 983.0 feet Noise Source Elevation: 932.0 feet	Barrier Type (0-Wall, 1-Berm): Drop Off Coefficient:	0 20.0
Barrier Elevation: 983.0 feet	20 = 6 dBA per doubling o 15 = 4.5 dBA per doubling	

NOISE MODEL PROJECTIONS								
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax	
Reference (Sample)	10.0	88.3	81.6	92.0	92.6	93.3	93.8	
Distance Attenuation	3,108.0	-49.8	-49.8	-49.8	-49.8	-49.8	-49.8	
Shielding (Barrier Attenuation)	3,108.0	0.0	0.0	0.0	0.0	0.0	0.0	
Raw (Distance + Barrier)		38.5	31.8	42.2	42.8	43.5	44.0	
60 Minute Hourly Adjustmer	nt	38.5	31.8	42.2	42.8	43.5	44.0	

#### **Observer Location: R2**

Source: Car Wash Vacuum Activity Condition: Operational

Project Name: Bedford Marketplace Job Number: 12751 Analyst: B. Lawson

#### **NOISE MODEL INPUTS** Barrier Height: Noise Distance to Observer 2,878.0 feet 0.0 feet Noise Source Height: 5.0 feet Noise Distance to Barrier: 2,878.0 feet Observer Height: 5.0 feet Barrier Distance to Observer: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0 Observer Elevation: 983.0 feet Drop Off Coefficient: 20.0 Noise Source Elevation: 932.0 feet 20 = 6 dBA per doubling of distance Barrier Elevation: 983.0 feet

15 = 4.5 dBA per doubling of distance

NOISE MODEL PROJECTIONS								
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax	
Reference (Sample)	5.0	74.6	74.2	75.4	77.2	78.0	78.8	
Distance Attenuation	2,878.0	-55.2	-55.2	-55.2	-55.2	-55.2	-55.2	
Shielding (Barrier Attenuation)	2,878.0	0.0	0.0	0.0	0.0	0.0	0.0	
Raw (Distance + Barrier)		19.4	19.0	20.2	22.0	22.8	23.6	
60 Minute Hourly Adjustmen	it	19.4	19.0	20.2	22.0	22.8	23.6	

S <sup>-</sup>	TATIONARY SOUR	CE NOISE PREDICTION MODEL	11/24/2019
<b>Observer Location: R2</b> Source: Outdoor P Condition: Operationa		Project Name: Bedford Marketplace Job Number: 12751 Analyst: B. Lawson	
	NOISE	MODEL INPUTS	
Noise Distance to Observer	1,877.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier:	1,877.0 feet	Noise Source Height:	5.0 feet
Barrier Distance to Observer:	0.0 feet	Observer Height:	5.0 feet
Observer Elevation:	983.0 feet	Barrier Type (0-Wall, 1-Berm):	0
Noise Source Elevation:	924.0 feet	Drop Off Coefficient:	20.0
Barrier Elevation:	983.0 feet	20 = 6 dBA per doubling of 15 = 4.5 dBA per doubling	

NOISE MODEL PROJECTIONS								
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax	
Reference (Sample)	5.0	63.4	61.7	64.1	67.0	69.7	73.9	
Distance Attenuation	1,877.0	-51.5	-51.5	-51.5	-51.5	-51.5	-51.5	
Shielding (Barrier Attenuation)	1,877.0	0.0	0.0	0.0	0.0	0.0	0.0	
Raw (Distance + Barrier)		11.9	10.2	12.6	15.5	18.2	22.4	
60 Minute Hourly Adjustmer	nt	11.9	10.2	12.6	15.5	18.2	22.4	

#### **Observer Location:** R3

*Source:* Air Conditioning Unit (Roof-Top) Condition: Operational

Project Name: Bedford Marketplace Job Number: 12751 Analyst: B. Lawson

NOISE MODEL INPUTS								
Noise Distance to Observer	1,896.0 feet	Barrier Height:	0.0 feet					
Noise Distance to Barrier:	1,896.0 feet	Noise Source Height:	5.0 feet					
Barrier Distance to Observer:	0.0 feet	Observer Height:	5.0 feet					
Observer Elevation:	1 088 0 feet	Barrier Type (0-Wall, 1-Berm):	0					
Noise Source Elevation:			20.0					
Barrier Elevation:		20 = 6  dBA per doubling  c						

15 = 4.5 dBA per doubling of distance

NOISE MODEL PROJECTIONS								
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax	
Reference (Sample)	5.0	77.2	74.4	76.1	77.4	77.7	78.2	
Distance Attenuation	1,896.0	-51.6	-51.6	-51.6	-51.6	-51.6	-51.6	
Shielding (Barrier Attenuation)	1,896.0	0.0	0.0	0.0	0.0	0.0	0.0	
Raw (Distance + Barrier)		25.6	22.8	24.5	25.8	26.1	26.6	
60 Minute Hourly Adjustmen	nt	25.6	22.8	24.5	25.8	26.1	26.6	

STATIONARY SOURCE NOISE PREDICTION MODEL 17						
<b>Observer Location: R3</b> Source: Drive-Through Speakerphone Condition: Operational	Project Name: Bedford Marketplace Job Number: 12751 Analyst: B. Lawson					
NOISE MODEL INPUTS						
Noise Distance to Observer 2,604.0 feet	Barrier Height:	0.0 feet				
Noise Distance to Barrier: 2,604.0 feet	Noise Source Height:	3.0 feet				
Barrier Distance to Observer: 0.0 feet	Observer Height:	5.0 feet				
Observer Elevation: 1.088.0 feet	Barrier Type (0-Wall, 1-Berm):	0				
Noise Source Elevation: 929.0 feet	Drop Off Coefficient:	20.0				
Barrier Elevation: 1,088.0 feet	20 = 6 dBA per doubling o 15 = 4 5 dBA per doubling					

20 = 6 dBA per doubling of distance 15 = 4.5 dBA per doubling of distance

NOISE MODEL PROJECTIONS							
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	15.0	62.0	60.9	62.1	63.6	65.3	66.4
Distance Attenuation	2,604.0	-44.8	-44.8	-44.8	-44.8	-44.8	-44.8
Shielding (Barrier Attenuation)	2,604.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		17.2	16.1	17.3	18.8	20.5	21.6
60 Minute Hourly Adjustmer	nt	17.2	16.1	17.3	18.8	20.5	21.6

**Observer Location: R3** 

Source: Trash Enclosure Condition: Operational Project Name: Bedford Marketplace Job Number: 12751 Analyst: B. Lawson

#### NOISE MODEL INPUTS

Noise Distance to Observer1,847.0 feetNoise Distance to Barrier:1,847.0 feetBarrier Distance to Observer:0.0 feet

Observer Elevation:1,088.0feetNoise Source Elevation:923.0feetBarrier Elevation:1,088.0feet

Barrier Height:0.0 feetNoise Source Height:4.0 feetObserver Height:5.0 feet

Barrier Type (0-Wall, 1-Berm): 0 Drop Off Coefficient: 20.0

> 20 = 6 dBA per doubling of distance 15 = 4.5 dBA per doubling of distance

NOISE MODEL PROJECTIONS							
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	5.0	77.3	69.0	75.0	82.0	87.0	88.5
Distance Attenuation	1,847.0	-51.3	-51.3	-51.3	-51.3	-51.3	-51.3
Shielding (Barrier Attenuation)	1,847.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		26.0	17.7	23.7	30.7	35.7	37.2
20 Minute Hourly Adjustmen	nt	21.2	12.9	18.9	25.9	30.9	32.4

Project Name: Bedford Marketplace Job Number: 12751 Analyst: B. Lawson						
Analyst: B. Lawson						
NOISE MODEL INPUTS						
Barrier Height:	0.0 feet					
Noise Source Height:	5.0 feet					
Observer Height:	5.0 feet					
Barrier Type (0-Wall, 1-Berm):	0					
Drop Off Coefficient:	20.0					
	<i>Barrier Height:</i> Noise Source Height: Observer Height: Barrier Type (0-Wall, 1-Berm):					

Barrier Elevation: 1,088.0 feet

20 = 6 dBA per doubling of distance 15 = 4.5 dBA per doubling of distance

NOISE MODEL PROJECTIONS							
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	5.0	60.1	56.7	60.7	63.7	67.1	79.5
Distance Attenuation	1,834.0	-51.3	-51.3	-51.3	-51.3	-51.3	-51.3
Shielding (Barrier Attenuation)	1,834.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		8.8	5.4	9.4	12.4	15.8	28.2
60 Minute Hourly Adjustmen	it	8.8	5.4	9.4	12.4	15.8	28.2

11/2<u>4/2019</u>

**Observer Location: R3** 

Barrier Distance to Observer:

Source: Gas Station Activity Condition: Operational

Noise Distance to Observer 2,772.0 feet

Noise Distance to Barrier: 2,772.0 feet

Observer Elevation: 1,088.0 feet

Project Name: Bedford Marketplace Job Number: 12751 Analyst: B. Lawson

#### NOISE MODEL INPUTS

Barrier Height:	0.0 feet
Noise Source Height:	5.0 feet
Observer Height:	5.0 feet

Barrier Type (0-Wall, 1-Berm): 0 Drop Off Coefficient: 20.0

Noise Source Elevation: 931.0 feet Barrier Elevation: 1,088.0 feet

0.0 feet

20 = 6 dBA per doubling of distance 15 = 4.5 dBA per doubling of distance

NOISE MODEL PROJECTIONS							
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	5.0	68.2	65.6	66.9	69.5	74.4	82.4
Distance Attenuation	2,772.0	-54.9	-54.9	-54.9	-54.9	-54.9	-54.9
Shielding (Barrier Attenuation)	2,772.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		13.3	10.7	12.0	14.6	19.5	27.5
60 Minute Hourly Adjustmen	nt	13.3	10.7	12.0	14.6	19.5	27.5

STATIONARY SOURCE NOISE PREDICTION MODEL						
<b>Observer Location: R3</b> Source: Car Wash Tunnel Condition: Operational	Project Name: Bedford Marketplace Job Number: 12751 Analyst: B. Lawson					
NOISE MODEL INPUTS						
Noise Distance to Observer 2,876.0 feet	Barrier Height:	0.0 feet				
Noise Distance to Barrier: 2,876.0 feet	Noise Source Height:	8.0 feet				
Barrier Distance to Observer: 0.0 feet	Observer Height:	5.0 feet				
<i>Observer Elevation:</i> 1,088.0 feet <i>Noise Source Elevation:</i> 931.0 feet	Barrier Type (0-Wall, 1-Berm): Drop Off Coefficient:	0 20.0				

Barrier Elevation: 1,088.0 feet

20 = 6 dBA per doubling of distance 15 = 4.5 dBA per doubling of distance

NOISE MODEL PROJECTIONS							
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	10.0	88.3	81.6	92.0	92.6	93.3	93.8
Distance Attenuation	2,876.0	-49.2	-49.2	-49.2	-49.2	-49.2	-49.2
Shielding (Barrier Attenuation)	2,876.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		39.1	32.4	42.8	43.4	44.1	44.6
60 Minute Hourly Adjustmer	nt	39.1	32.4	42.8	43.4	44.1	44.6

#### **Observer Location: R3**

Source: Car Wash Vacuum Activity Condition: Operational

Project Name: Bedford Marketplace Job Number: 12751 Analyst: B. Lawson

#### NOISE MODEL INPUTS

Noise Distance to Observer	2,752.0 feet	
Noise Distance to Barrier:	2,752.0 feet	
Barrier Distance to Observer:	0.0 feet	

Observer Elevation:1,088.0feetNoise Source Elevation:931.0feetBarrier Elevation:1,088.0feet

Barrier Height:0.0 feetNoise Source Height:5.0 feetObserver Height:5.0 feet

Barrier Type (0-Wall, 1-Berm): 0 Drop Off Coefficient: 20.0

> 20 = 6 dBA per doubling of distance 15 = 4.5 dBA per doubling of distance

NOISE MODEL PROJECTIONS							
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	5.0	74.6	74.2	75.4	77.2	78.0	78.8
Distance Attenuation	2,752.0	-54.8	-54.8	-54.8	-54.8	-54.8	-54.8
Shielding (Barrier Attenuation)	2,752.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		19.8	19.4	20.6	22.4	23.2	24.0
60 Minute Hourly Adjustmer	nt	19.8	19.4	20.6	22.4	23.2	24.0

STATIONARY SOURCE NOISE PREDICTION MODEL						
Observer Location: R3Project Name: Bedford MarketplaceSource: Outdoor PlaygroundJob Number: 12751Condition: OperationalAnalyst: B. Lawson						
NOISE MODEL INPUTS						
Noise Distance to Observer 1,743.0 feet	Barrier Height:	0.0 feet				
Noise Distance to Barrier: 1,743.0 feet	Noise Source Height:	5.0 feet				
Barrier Distance to Observer: 0.0 feet	Observer Height:	5.0 feet				
Observer Elevation: 1,088.0 feet Noise Source Elevation: 923.0 feet	Barrier Type (0-Wall, 1-Berm): Drop Off Coefficient:	0 20.0				

Barrier Elevation: 1,088.0 feet

20 = 6 dBA per doubling of distance 15 = 4.5 dBA per doubling of distance

NOISE MODEL PROJECTIONS							
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	5.0	63.4	61.7	64.1	67.0	69.7	73.9
Distance Attenuation	1,743.0	-50.8	-50.8	-50.8	-50.8	-50.8	-50.8
Shielding (Barrier Attenuation)	1,743.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		12.6	10.9	13.3	16.2	18.9	23.1
60 Minute Hourly Adjustmer	nt	12.6	10.9	13.3	16.2	18.9	23.1

#### **Observer Location:** R4

*Source:* Air Conditioning Unit (Roof-Top) Condition: Operational

Project Name: Bedford Marketplace Job Number: 12751 Analyst: B. Lawson

NOISE MODEL INPUTS						
Noise Distance to Observer	1,240.0 feet	Barrier Height:	6.0 feet			
Noise Distance to Barrier:	1,230.0 feet	Noise Source Height:	5.0 feet			
Barrier Distance to Observer:	10.0 feet	Observer Height:	5.0 feet			
Observer Elevation:	1 028 0 feet	Barrier Type (0-Wall, 1-Berm):	0			
Noise Source Elevation:		Drop Off Coefficient:	20.0			
		20 = 6  dBA per doubling c				

15 = 4.5 dBA per doubling of distance

11/24/2019

NOISE MODEL PROJECTIONS							
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	5.0	77.2	74.4	76.1	77.4	77.7	78.2
Distance Attenuation	1,240.0	-47.9	-47.9	-47.9	-47.9	-47.9	-47.9
Shielding (Barrier Attenuation)	1,230.0	-6.2	-6.2	-6.2	-6.2	-6.2	-6.2
Raw (Distance + Barrier)		23.1	20.3	22.0	23.3	23.6	24.1
60 Minute Hourly Adjustmen	nt	23.1	20.3	22.0	23.3	23.6	24.1

STATIONARY SOURCE N	IOISE PREDICTION MODEL	11/24/2019				
<b>Observer Location: R4</b> Source: Drive-Through Speakerphone <i>Condition:</i> Operational	Project Name: Bedford Marketplace Job Number: 12751 Analyst: B. Lawson					
NOISE MODEL INPUTS						
Noise Distance to Observer 1,254.0 feet	Barrier Height:	6.0 feet				
Noise Distance to Barrier: 1,244.0 feet	Noise Source Height:	3.0 feet				
Barrier Distance to Observer: 10.0 feet	Observer Height:	5.0 feet				
Observer Elevation: 1,028.0 feet	Barrier Type (0-Wall, 1-Berm):	0				
Noise Source Elevation: 929.0 feet	Drop Off Coefficient:	20.0				
Barrier Elevation: 1,028.0 feet	20 = 6 dBA per doubling c 15 = 4 5 dBA per doubling					

15 = 4.5 dBA per doubling of distance

NOISE MODEL PROJECTIONS							
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	15.0	62.0	60.9	62.1	63.6	65.3	66.4
Distance Attenuation	1,254.0	-38.4	-38.4	-38.4	-38.4	-38.4	-38.4
Shielding (Barrier Attenuation)	1,244.0	-6.5	-6.5	-6.5	-6.5	-6.5	-6.5
Raw (Distance + Barrier)		17.1	16.0	17.2	18.7	20.4	21.5
60 Minute Hourly Adjustmer	it	17.1	16.0	17.2	18.7	20.4	21.5

**Observer Location: R4** 

Ва

Source: Trash Enclosure Condition: Operational

Project Name: Bedford Marketplace Job Number: 12751 Analyst: B. Lawson

#### **NOISE MODEL INPUTS**

Noise Distance to Observer	1,261.0 feet	
Noise Distance to Barrier:	1,251.0 feet	
Barrier Distance to Observer:	10.0 feet	

Observer Elevation: 1,028.0 feet Noise Source Elevation: 928.0 feet Barrier Elevation: 1,028.0 feet

**Barrier Height:** 6.0 feet Noise Source Height: 4.0 feet Observer Height: 5.0 feet

Barrier Type (0-Wall, 1-Berm): 0 Drop Off Coefficient: 20.0

> 20 = 6 dBA per doubling of distance 15 = 4.5 dBA per doubling of distance

NOISE MODEL PROJECTIONS							
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	5.0	77.3	69.0	75.0	82.0	87.0	88.5
Distance Attenuation	1,261.0	-48.0	-48.0	-48.0	-48.0	-48.0	-48.0
Shielding (Barrier Attenuation)	1,251.0	-6.5	-6.5	-6.5	-6.5	-6.5	-6.5
Raw (Distance + Barrier)		22.8	14.5	20.5	27.5	32.5	34.0
20 Minute Hourly Adjustmen	ıt	18.0	9.7	15.7	22.7	27.7	29.2

STATIONARY SOURCE NOISE PREDICTION MODEL						
Observer Location: R4	Project Name: Bedford Marketplace					
Source: Parking Lot	Job Number: 12751					
Condition: Operational	Analyst: B. Lawson					
NOISE MODEL INPUTS						
Noise Distance to Observer 1,158.0 feet	Barrier Height:	6.0 feet				
Noise Distance to Barrier: 1,148.0 feet	Noise Source Height:	5.0 feet				
Barrier Distance to Observer: 10.0 feet	Observer Height:	5.0 feet				
Observer Elevation: 1.028.0 feet	Barrier Type (0-Wall, 1-Berm):	0				
Noise Source Elevation: 929.0 feet	Drop Off Coefficient:	20.0				
		e 11 1				

Barrier Elevation: 1,028.0 feet

20 = 6 dBA per doubling of distance 15 = 4.5 dBA per doubling of distance

NOISE MODEL PROJECTIONS							
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	5.0	60.1	56.7	60.7	63.7	67.1	79.5
Distance Attenuation	1,158.0	-47.3	-47.3	-47.3	-47.3	-47.3	-47.3
Shielding (Barrier Attenuation)	1,148.0	-6.6	-6.6	-6.6	-6.6	-6.6	-6.6
Raw (Distance + Barrier)		6.2	2.8	6.8	9.8	13.2	25.6
60 Minute Hourly Adjustmen	it	6.2	2.8	6.8	9.8	13.2	25.6

**Observer Location: R4** 

*Source:* Gas Station Activity *Condition:* Operational

Project Name: Bedford Marketplace Job Number: 12751 Analyst: B. Lawson

#### NOISE MODEL INPUTS

	1,218.0 feet	Noise Distance to Observer
N	1,208.0 feet	Noise Distance to Barrier:
	10.0 feet	Barrier Distance to Observer:
Barrier Typ	1,028.0 feet	Observer Elevation:

Noise Source Elevation: 929.0 feet Barrier Elevation: 1,028.0 feet Barrier Height:6.0 feetNoise Source Height:5.0 feetObserver Height:5.0 feet

Barrier Type (0-Wall, 1-Berm): 0 Drop Off Coefficient: 20.0

> 20 = 6 dBA per doubling of distance 15 = 4.5 dBA per doubling of distance

NOISE MODEL PROJECTIONS							
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	5.0	68.2	65.6	66.9	69.5	74.4	82.4
Distance Attenuation	1,218.0	-47.7	-47.7	-47.7	-47.7	-47.7	-47.7
Shielding (Barrier Attenuation)	1,208.0	-6.5	-6.5	-6.5	-6.5	-6.5	-6.5
Raw (Distance + Barrier)		14.0	11.4	12.7	15.3	20.2	28.2
60 Minute Hourly Adjustmen	it	14.0	11.4	12.7	15.3	20.2	28.2

STATIONARY SOURCE NOISE PREDICTION MODEL						
<b>Observer Location: R4</b> Source: Car Wash Tunnel	Project Name: Bedford Marketplace Job Number: 12751					
Condition: Operational	Analyst: B. Lawson					
NOISE MODEL INPUTS						
Noise Distance to Observer 1,313.0 feet	Barrier Height:	6.0 feet				
Noise Distance to Barrier: 1,303.0 feet	Noise Source Height:	8.0 feet				
Barrier Distance to Observer: 10.0 feet	Observer Height:	5.0 feet				
<i>Observer Elevation:</i> 1,028.0 feet <i>Noise Source Elevation:</i> 931.0 feet	Barrier Type (0-Wall, 1-Berm): Drop Off Coefficient:	0 20.0				

Barrier Elevation: 1,028.0 feet

20 = 6 dBA per doubling of distance

15 = 4.5 dBA per doubling of distance

NOISE MODEL PROJECTIONS								
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax	
Reference (Sample)	10.0	88.3	81.6	92.0	92.6	93.3	93.8	
Distance Attenuation	1,313.0	-42.4	-42.4	-42.4	-42.4	-42.4	-42.4	
Shielding (Barrier Attenuation)	1,303.0	-6.3	-6.3	-6.3	-6.3	-6.3	-6.3	
Raw (Distance + Barrier)		39.6	32.9	43.3	43.9	44.6	45.1	
60 Minute Hourly Adjustmer	nt	39.6	32.9	43.3	43.9	44.6	45.1	

#### **Observer Location: R4**

Source: Car Wash Vacuum Activity Condition: Operational

Project Name: Bedford Marketplace Job Number: 12751 Analyst: B. Lawson

# NOISE MODEL INPUTS Noise Distance to Observer 1,368.0 feet Barrier Height: 6.0 feet

Barrier Distance to Observer:10.0 feetObserver Elevation:1,028.0 feetNoise Source Elevation:931.0 feetBarrier Elevation:1,028.0 feet

Noise Distance to Barrier: 1,358.0 feet

Noise Source Height:5.0 feetObserver Height:5.0 feet

Barrier Type (0-Wall, 1-Berm): 0 Drop Off Coefficient: 20.0

> 20 = 6 dBA per doubling of distance 15 = 4.5 dBA per doubling of distance

NOISE MODEL PROJECTIONS							
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	5.0	74.6	74.2	75.4	77.2	78.0	78.8
Distance Attenuation	1,368.0	-48.7	-48.7	-48.7	-48.7	-48.7	-48.7
Shielding (Barrier Attenuation)	1,358.0	-6.3	-6.3	-6.3	-6.3	-6.3	-6.3
Raw (Distance + Barrier)		19.6	19.2	20.4	22.2	23.0	23.8
60 Minute Hourly Adjustmer	nt	19.6	19.2	20.4	22.2	23.0	23.8

STATIONARY SOURCE NOISE PREDICTION MODEL							
Observer Location: R4	Project Name: Bedford Marketplace						
Source: Outdoor Playground	Job Number: 12751						
Condition: Operational	Analyst: B. Lawson						
NOISE MODEL INPUTS							
Noise Distance to Observer 1,754.0 feet	Barrier Height:	6.0 feet					
Noise Distance to Barrier: 1,744.0 feet	Noise Source Height:	5.0 feet					
Barrier Distance to Observer: 10.0 feet	Observer Height:	5.0 feet					
Observer Elevation: 1,028.0 feet	Barrier Type (0-Wall, 1-Berm):	0					
Noise Source Elevation: 923.0 feet	Drop Off Coefficient:	20.0					

Noise Source Elevation: 923.0 feet Barrier Elevation: 1,028.0 feet

20 = 6 dBA per doubling of distance

15 = 4.5 dBA per doubling of distance

NOISE MODEL PROJECTIONS							
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	5.0	63.4	61.7	64.1	67.0	69.7	73.9
Distance Attenuation	1,754.0	-50.9	-50.9	-50.9	-50.9	-50.9	-50.9
Shielding (Barrier Attenuation)	1,744.0	-6.2	-6.2	-6.2	-6.2	-6.2	-6.2
Raw (Distance + Barrier)		6.3	4.6	7.0	9.9	12.6	16.8
60 Minute Hourly Adjustmer	nt	6.3	4.6	7.0	9.9	12.6	16.8

11/24<u>/2019</u>

## **Observer Location: R5**

*Source:* Air Conditioning Unit (Roof-Top) *Condition:* Operational

Project Name: Bedford Marketplace Job Number: 12751 Analyst: B. Lawson

NOISE MODEL INPUTS							
Noise Distance to Observer	1,637.0 feet	Barrier Height:	0.0 feet				
Noise Distance to Barrier:	1,637.0 feet	Noise Source Height:	5.0 feet				
Barrier Distance to Observer:	0.0 feet	Observer Height:	5.0 feet				
Observer Elevation:	976.0 feet	Barrier Type (0-Wall, 1-Berm):	0				
Noise Source Elevation:	944.0 feet	Drop Off Coefficient:	20.0				
Barrier Elevation:	976.0 feet	20 = 6 dBA per doubling o 15 = 4.5 dBA per doubling					

NOISE MODEL PROJECTIONS								
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax	
Reference (Sample)	5.0	77.2	74.4	76.1	77.4	77.7	78.2	
Distance Attenuation	1,637.0	-50.3	-50.3	-50.3	-50.3	-50.3	-50.3	
Shielding (Barrier Attenuation)	1,637.0	0.0	0.0	0.0	0.0	0.0	0.0	
Raw (Distance + Barrier)		26.9	24.1	25.8	27.1	27.4	27.9	
60 Minute Hourly Adjustmer	nt	26.9	24.1	25.8	27.1	27.4	27.9	

S	TATIONARY SOURCE N	OISE PREDICTION MODEL	11/24/2019
<b>Observer Location: R5</b> Source: Drive-Thro Condition: Operationa	ough Speakerphone al	Project Name: Bedford Marketplace Job Number: 12751 Analyst: B. Lawson	
	NOISE MOI	DEL INPUTS	
Noise Distance to Observer Noise Distance to Barrier: Barrier Distance to Observer:	,	<b>Barrier Height:</b> Noise Source Height: Observer Height:	<b>0.0 feet</b> 3.0 feet 5.0 feet
Observer Elevation: Noise Source Elevation: Barrier Elevation:	976.0 feet 929.0 feet 976.0 feet	Barrier Type (0-Wall, 1-Berm): Drop Off Coefficient: 20 = 6 dBA per doubling o 15 = 4.5 dBA per doubling	0 20.0 f distance

NOISE MODEL PROJECTIONS							
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	15.0	62.0	60.9	62.1	63.6	65.3	66.4
Distance Attenuation	1,961.0	-42.3	-42.3	-42.3	-42.3	-42.3	-42.3
Shielding (Barrier Attenuation)	1,961.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		19.7	18.6	19.8	21.3	23.0	24.1
60 Minute Hourly Adjustmer	nt	19.7	18.6	19.8	21.3	23.0	24.1

**Observer Location: R5** 

Source: Trash Enclosure Condition: Operational Project Name: Bedford Marketplace Job Number: 12751 Analyst: B. Lawson

#### **NOISE MODEL INPUTS** Barrier Height: Noise Distance to Observer 1,635.0 feet 0.0 feet Noise Source Height: 4.0 feet Noise Distance to Barrier: 1,635.0 feet Observer Height: 5.0 feet Barrier Distance to Observer: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0 Observer Elevation: 976.0 feet Drop Off Coefficient: 20.0 Noise Source Elevation: 925.0 feet 20 = 6 dBA per doubling of distance Barrier Elevation: 976.0 feet 15 = 4.5 dBA per doubling of distance

NOISE MODEL PROJECTIONS								
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax	
Reference (Sample)	5.0	77.3	69.0	75.0	82.0	87.0	88.5	
Distance Attenuation	1,635.0	-50.3	-50.3	-50.3	-50.3	-50.3	-50.3	
Shielding (Barrier Attenuation)	1,635.0	0.0	0.0	0.0	0.0	0.0	0.0	
Raw (Distance + Barrier)		27.0	18.7	24.7	31.7	36.7	38.2	
20 Minute Hourly Adjustmer	nt	22.2	13.9	19.9	26.9	31.9	33.4	

ST	ATIONARY SOU	RCE NOISE PREDICTION MODEL	11/24/2019
Observer Location: R5 Source: Parking Lot Condition: Operational		Project Name: Bedford Marketplace Job Number: 12751 Analyst: B. Lawson	
	NOIS	E MODEL INPUTS	
Noise Distance to Observer 1	,647.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier: 1	,647.0 feet	Noise Source Height:	5.0 feet
Barrier Distance to Observer:	0.0 feet	Observer Height:	5.0 feet
Observer Elevation:	976.0 feet	Barrier Type (0-Wall, 1-Berm):	0
Noise Source Elevation:	925.0 feet	Drop Off Coefficient:	20.0
Barrier Elevation:	976.0 feet	20 = 6 dBA per doubling of 15 = 4.5 dBA per doubling	

NOISE MODEL PROJECTIONS							
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	5.0	60.1	56.7	60.7	63.7	67.1	79.5
Distance Attenuation	1,647.0	-50.4	-50.4	-50.4	-50.4	-50.4	-50.4
Shielding (Barrier Attenuation)	1,647.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		9.7	6.3	10.3	13.3	16.7	29.1
60 Minute Hourly Adjustmer	nt	9.7	6.3	10.3	13.3	16.7	29.1

**Observer Location: R5** 

Source: Gas Station Activity Condition: Operational Project Name: Bedford Marketplace Job Number: 12751 Analyst: B. Lawson 11/24/2019

#### **NOISE MODEL INPUTS** Barrier Height: Noise Distance to Observer 2,096.0 feet 0.0 feet Noise Source Height: 5.0 feet Noise Distance to Barrier: 2,096.0 feet Observer Height: 5.0 feet Barrier Distance to Observer: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0 Observer Elevation: 976.0 feet Drop Off Coefficient: 20.0 Noise Source Elevation: 931.0 feet 20 = 6 dBA per doubling of distance Barrier Elevation: 976.0 feet 15 = 4.5 dBA per doubling of distance

NOISE MODEL PROJECTIONS								
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax	
Reference (Sample)	5.0	68.2	65.6	66.9	69.5	74.4	82.4	
Distance Attenuation	2,096.0	-52.4	-52.4	-52.4	-52.4	-52.4	-52.4	
Shielding (Barrier Attenuation)	2,096.0	0.0	0.0	0.0	0.0	0.0	0.0	
Raw (Distance + Barrier)		15.8	13.2	14.5	17.1	22.0	30.0	
60 Minute Hourly Adjustmer	nt	15.8	13.2	14.5	17.1	22.0	30.0	

STATIC	ONARY SOURCE NOISE	PREDICTION MODEL	11/24/2019
<i>Observer Location:</i> <b>R5</b> <i>Source:</i> Car Wash Tunnel <i>Condition:</i> Operational		Project Name: Bedford Marketplace Job Number: 12751 Analyst: B. Lawson	
	NOISE MODEL	INPUTS	
Noise Distance to Observer 2,239	0.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier: 2,239	0.0 feet	Noise Source Height:	8.0 feet
Barrier Distance to Observer: 0	0.0 feet	Observer Height:	5.0 feet
	5.0 feet L0 feet	Barrier Type (0-Wall, 1-Berm): Drop Off Coefficient:	0 20.0
	6.0 feet	20 = 6 dBA per doubling c 15 = 4.5 dBA per doubling	

NOISE MODEL PROJECTIONS							
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	10.0	88.3	81.6	92.0	92.6	93.3	93.8
Distance Attenuation	2,239.0	-47.0	-47.0	-47.0	-47.0	-47.0	-47.0
Shielding (Barrier Attenuation)	2,239.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		41.3	34.6	45.0	45.6	46.3	46.8
60 Minute Hourly Adjustmer	nt	41.3	34.6	45.0	45.6	46.3	46.8

#### **Observer Location: R5**

Source: Car Wash Vacuum Activity Condition: Operational

Project Name: Bedford Marketplace Job Number: 12751 Analyst: B. Lawson

#### **NOISE MODEL INPUTS** Barrier Height: Noise Distance to Observer 2,181.0 feet 0.0 feet Noise Source Height: 5.0 feet Noise Distance to Barrier: 2,181.0 feet Observer Height: 5.0 feet Barrier Distance to Observer: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0 Observer Elevation: 976.0 feet Drop Off Coefficient: 20.0 Noise Source Elevation: 931.0 feet 20 = 6 dBA per doubling of distance Barrier Elevation: 976.0 feet

15 = 4.5 dBA per doubling of distance

NOISE MODEL PROJECTIONS							
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	5.0	74.6	74.2	75.4	77.2	78.0	78.8
Distance Attenuation	2,181.0	-52.8	-52.8	-52.8	-52.8	-52.8	-52.8
Shielding (Barrier Attenuation)	2,181.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		21.8	21.4	22.6	24.4	25.2	26.0
60 Minute Hourly Adjustmer	nt	21.8	21.4	22.6	24.4	25.2	26.0

STATIONARY S	SOURCE NOISE PREDICTION MODEL	11/24/2019
<b>Observer Location: R5</b> Source: Outdoor Playground Condition: Operational	Project Name: Bedford Marketplace Job Number: 12751 Analyst: B. Lawson	
N	OISE MODEL INPUTS	
Noise Distance to Observer 1,561.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier: 1,561.0 feet	Noise Source Height:	5.0 feet
Barrier Distance to Observer: 0.0 feet	Observer Height:	5.0 feet
Observer Elevation: 976.0 feet Noise Source Elevation: 923.0 feet	Barrier Type (0-Wall, 1-Berm): Drop Off Coefficient:	0 20.0
Barrier Elevation: 976.0 feet	20 = 6 dBA per doubling of 15 = 4.5 dBA per doubling	

NOISE MODEL PROJECTIONS							
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	5.0	63.4	61.7	64.1	67.0	69.7	73.9
Distance Attenuation	1,561.0	-49.9	-49.9	-49.9	-49.9	-49.9	-49.9
Shielding (Barrier Attenuation)	1,561.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		13.5	11.8	14.2	17.1	19.8	24.0
60 Minute Hourly Adjustmer	nt	13.5	11.8	14.2	17.1	19.8	24.0