

Majestic Gateway

NOISE AND VIBRATION IMPACT ANALYSIS CITY OF BAKERSFIELD

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13923-09 Noise Study

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LIST OF ABBREVIATED TERMS

(1)	Reference
ANSI	American National Standards Institute
Calveno	California Vehicle Noise
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
dBA	A-weighted decibels
EPA	Environmental Protection Agency
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
INCE	Institute of Noise Control Engineering
L _{eq}	Equivalent continuous (average) sound level
L _{max}	Maximum level measured over the time interval
mph	Miles per hour
NOP	Notice of Preparation
PPV	Peak Particle Velocity
Project	Majestic Gateway
REMEL	Reference Energy Mean Emission Level
RMS	Root-mean-square
VdB	Vibration Decibels



EXECUTIVE SUMMARY

Urban Crossroads, Inc. has prepared this noise study to determine the noise exposure and the necessary noise mitigation measures for the proposed Majestic Gateway development ("Project"). The Project site is located on the east side of State Route 99 (SR-99), north of Hosking Avenue, south of Berkshire Road, and west of South H Street in City of Bakersfield. The project applicant proposes to construct one distribution warehouse building with a maximum of 1,012,185 square feet (sf) and twelve commercial buildings with up to 187,500 sf of building space. This noise study has been prepared to satisfy applicable City of Bakersfield noise standards and significance criteria based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (1)

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

Anghais	Report	Significance Findings			
Analysis	Section	Unmitigated	Mitigated		
Off-Site Traffic Noise	7	Less Than Significant	-		
Operational Noise	9	Less Than Significant	-		
Construction Noise		Less Than Significant	-		
Nighttime Concrete Pour	10	Less Than Significant	-		
Construction Vibration		Less Than Significant	-		

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 Majestic Gateway ("Project"). This noise study briefly describes the proposed Project, provides information regarding noise fundamentals, sets out the local regulatory setting, presents the study methods and procedures for transportation related CNEL traffic noise analysis, and evaluates the future exterior noise environment. In addition, this study includes an analysis of the potential Project-related long-term stationary-source operational noise and short-term construction noise and vibration impacts.

1.1 SITE LOCATION

The proposed Project is located east of State Route 99 (SR-99), north of Hosking Avenue, south of Berkshire Road, and west of South H Street in City of Bakersfield, as shown on Exhibit 1-A. The Project Site is currently vacant and was used in the past (prior to 2009) for the cultivation of a variety of crops. Uses surrounding the Project Site are generally described as follows

- North: Land immediately north of the Project Site on the north side of Berkshire Road is vacant and is owned by Kaiser Permanente for possible medical facility development. Further north on the east and west sides of Colony Street is a commercial development that includes uses including but not limited to Floor & Décor, CarMax, Tractor Supply Co., a motel (Vagabond Inn), O-Reilly Auto Parts, and various fast food and sit-down restaurants, and a gas station/mini-mart (Chevron). Additional commercial development is north of Panama Lane including but not limited to Wal-Mart, Lowes, Aldi, and various smaller retailers, fast-food and sit-down restaurants, and a gas station/mini mart (Shell).
- East: To the east of the Project Site is South H Street beyond which is the Kern Island Canal, which is fenced and managed by Kern Delta Water District. East of the canal is a solid wall, behind which is a residential neighborhood of single-family residential homes. Horizon Elementary School and Golden Valley High School are both located at the intersection of Hosking Avenue and Monitor Street and Oliver Middle School is located at the intersection of Berkshire Road and Monitor Street. Monitor Street is approximately 0.5-mile east of the Project Site.
- **South:** To the south of the Project Site at the northwest corner of Hosking Avenue and South H Street is vacant land anticipated for future commercial development. South of Hosking Avenue and west of South H Street is vacant land also anticipated for future commercial development.
- West: To the west of the Project Site is SR 99. West of SR-99 directly west of the Project Site is a light industrial use (The Trailer Mart) and a residential community containing single-family residential homes, Granite Pointe Park, and vacant parcels.



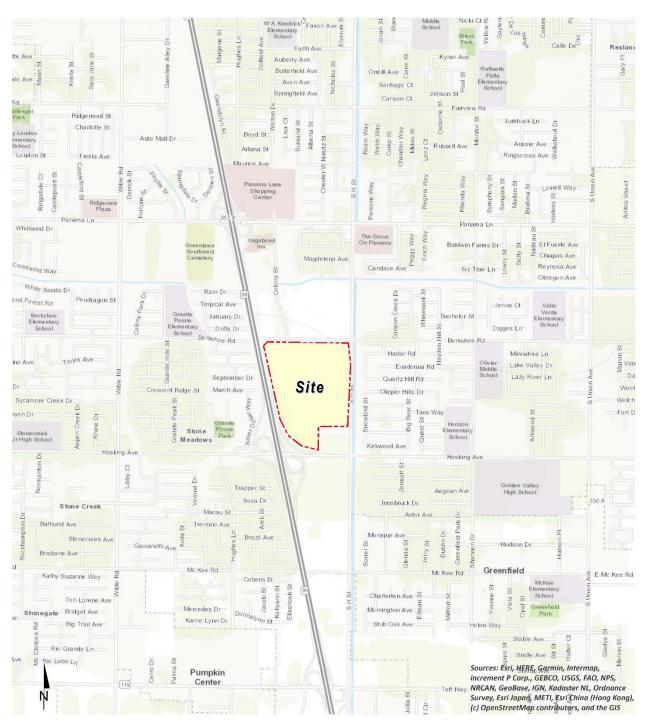


EXHIBIT 1-A: LOCATION MAP



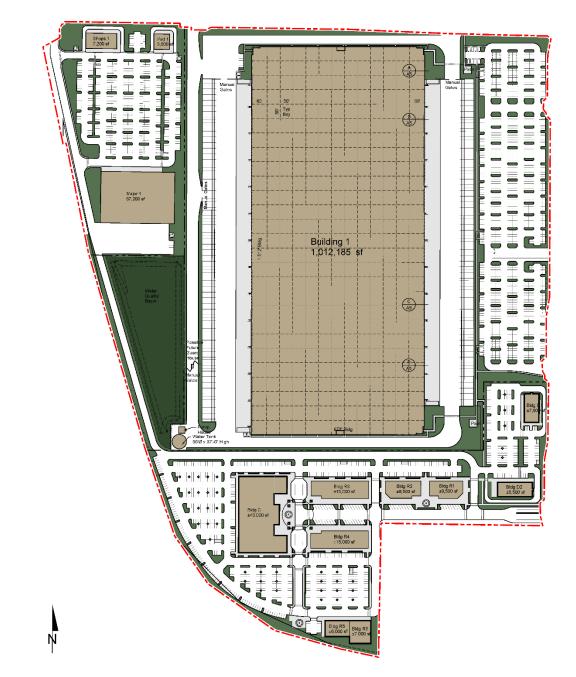
1.2 PROJECT DESCRIPTION

The Majestic Gateway Project involves the proposed development of commercial and distribution warehouse land use as shown on Exhibit 1-B. The warehouse component of the Project entails the construction and operation of one distribution warehouse building having a maximum of 1,012,185 square feet (sf) of building space. The commercial component of the Project entails the construction and operation of twelve commercial buildings collectively having a maximum of 187,500 sf of building space. Other features of the Project include an on-site detention basin, landscaping, parking areas, drive aisles, lighting, signage, and frontage improvements to Berkshire Road and South H Street. Off-site widening and improvements to South H Street between Berkshire Road and Hosking Avenue also are included as part of the Project and the Study Area.

The on-site Project-related noise sources are expected to include: outdoor loading dock activity, roof-top air conditioning units, drive-through speakerphone activity, trash enclosure activity, parking lot vehicle movements, and truck movements. This noise analysis is intended to describe the noise level impacts associated with the expected typical operational activities at the Project site.



EXHIBIT 1-B: SITE PLAN



2 FUNDAMENTALS

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

COMMON OUTDOOR ACTIVITIES	COMMON INDOOR ACTIVITIES	A - WEIGHTED SOUND LEVEL dBA	SUBJECTIVE LOUDNESS	EFFECTS OF NOISE	
THRESHOLD OF PAIN		140	\mathbf{X}		
NEAR JET ENGINE		130	INTOLERABLE OR		
		120	DEAFENING	HEARING LOSS	
JET FLY-OVER AT 300m (1000 ft)	ROCK BAND	110			
LOUD AUTO HORN		100			
GAS LAWN MOWER AT 1m (3 ft)		90			
DIESEL TRUCK AT 15m (50 ft), at 80 km/hr (50 mph)	FOOD BLENDER AT 1m (3 ft)	80			
NOISY URBAN AREA, DAYTIME	VACUUM CLEANER AT 3m (10 ft)	70	LOUD	SPEECH INTERFERENCE	
HEAVY TRAFFIC AT 90m (300 ft)	NORMAL SPEECH AT 1m (3 ft)	60			
QUIET URBAN DAYTIME	LARGE BUSINESS OFFICE	50	MODERATE	CLEED	
QUIET URBAN NIGHTTIME	THEATER, LARGE CONFERENCE ROOM (BACKGROUND)	40		SLEEP 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 FAINT		

EXHIBIT 2-A: TYPICAL NOISE LEVELS

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

2.1 RANGE OF NOISE

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



at approximately 1,000 feet, which can cause serious discomfort. (3) Another important aspect of noise is the duration of the sound and the way it is described and distributed in time.

2.2 NOISE DESCRIPTORS

Environmental noise descriptors are generally based on averages, rather than instantaneous, noise levels. The most used metric 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.

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 addition of 10 decibels to dBA L_{eq} sound levels at night between 10:00 p.m. and 7:00 a.m. These additions are made to account for the noise sensitive time periods during the evening and night hours when noise can become more intrusive. CNEL does not represent the actual sound level heard at any time, but rather represents the total sound exposure. The City of Bakersfield 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. (2)

2.3.2 GROUND ABSORPTION

The propagation path of noise from a highway to a receiver is usually very close to the ground. Noise attenuation from ground absorption and reflective wave canceling adds to the attenuation associated with geometric spreading. Traditionally, the excess attenuation has also been expressed in terms of attenuation per doubling of distance. This approximation is usually



sufficiently accurate for distances of less than 200 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 such as soft dirt, grass, or scattered bushes and trees), an excess ground attenuation value of 1.5 dB per doubling of distance is normally assumed. When added to the cylindrical spreading, the excess ground attenuation results in an overall drop-off rate of 4.5 dB per doubling of distance from a line source. (4)

2.3.3 ATMOSPHERIC EFFECTS

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

2.3.4 Shielding

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



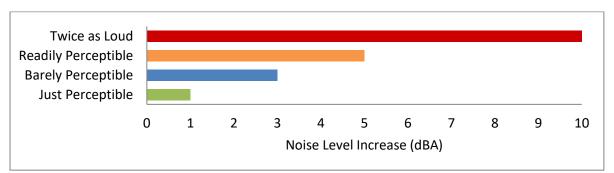
2.6 LAND USE COMPATIBILITY WITH NOISE

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

Approximately sixteen 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 may occur. Twenty to thirty percent of the population will not complain even in very severe noise environments. (7 pp. 8-6) Thus, a variety of reactions can be expected from people exposed to any given noise environment.

Surveys have shown that community response to noise varies from no reaction to vigorous action for newly introduced noises averaging from 10 dB below existing to 25 dB above existing. (8) According to research originally published in the Noise Effects Handbook (7), the percentage of high annoyance ranges from approximately 0 percent at 45 dB or less, 10 percent are highly annoyed around 60 dB, and increases rapidly to approximately 70 percent being highly annoyed at approximately 85 dB or greater. Despite this variability in behavior on an individual level, the population can be expected to exhibit the following responses to changes in noise levels as shown on Exhibit 2-B. A change of 3 dBA is considered barely perceptible, and changes of 5 dBA are considered readily perceptible. (4)







2.8 VIBRATION

Per the Federal Transit Administration (FTA) *Transit Noise Impact and Vibration Impact Assessment Manual* (8), 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.



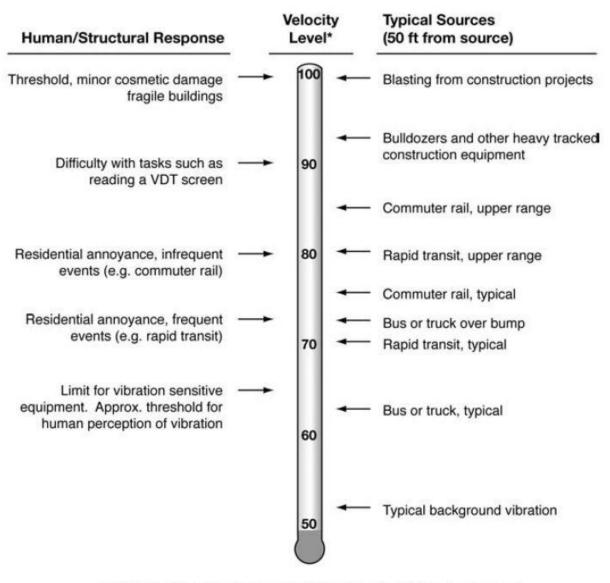


EXHIBIT 2-C: TYPICAL LEVELS OF GROUND-BORNE VIBRATION

* RMS Vibration Velocity Level in VdB relative to 10⁻⁶ inches/second

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



3 REGULATORY SETTING

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

3.1 STATE OF CALIFORNIA NOISE REQUIREMENTS

The State of California regulates freeway noise, sets standards for sound transmission, provides occupational noise control criteria, identifies noise standards, and provides guidance for local land use compatibility. State law requires that each county and city adopt a General Plan that includes a Noise Element which is to be prepared per guidelines adopted by the Governor's Office of Planning and Research (OPR). (9) The purpose of the Noise Element is to *limit the exposure of the community to excessive noise levels*. In addition, the California Environmental Quality Act (CEQA) requires that all known environmental effects of a project be analyzed, including environmental noise impacts.

3.2 CITY OF BAKERSFIELD GENERAL PLAN NOISE ELEMENT

The City of Bakersfield has adopted a Noise Element of the General Plan to protect local citizens from the harmful effect of excessive noise exposure. (10) The Noise Element identifies the following two goals.

- 1. Ensure that residents of the Bakersfield Metropolitan Area are protected from excessive noise and existing moderate levels of noise are maintained.
- 2. Protect citizens of the planning area from the harmful effects of exposure to excessive noise and protect the economic base of the area by preventing the encroachment of incompatible land uses near known noise-producing roadways, industries, railroads, airports, and other sources.

The policies and implementation measures specified in the City of Bakersfield Noise Element are designed to satisfy these goals. For example, Policy 3 involves review of discretionary industrial, commercial, or other noise-generating land use project for compatibility with nearby noise-sensitive land use. Additional implementation measures include requiring proposed commercial and industrial uses to be designed or arranged so that they will not subject residential or noise sensitive land use to exterior noise levels in excess of the noise level performance standards in Table VII-2 (Table 3-1).



3.2.1 LAND USE COMPATIBILITY GUIDELINES

To ensure that residents are protected from excessive noise, the City of Bakersfield General Plan Noise Element provides guidelines to evaluate the *Land Use Compatibility for Community Noise Environments* (Figure VII-1). These guidelines presented on Exhibit 3-A are based on the Governor's Office of Planning and Research (9) and are used to describe land use categories of compatibility and not specific noise standards. According to the *Land Use Compatibility for Community for Community Noise Environment* guidelines, noise sensitive land uses such as single-family residences are *normally acceptable* with exterior noise levels below 60 dBA CNEL and *conditionally acceptable* with noise levels below 70 dBA CNEL. The City of Bakersfield General Plan Noise Element is included in Appendix 3.1.

		Con	nmunity No L _{dn} or C				
Land Use Category	55	60	65	70	75	80	INTERPRETATION:
Residential - Low Density Single Family, Duplex, Mobile Homes							Normally Acceptable
Residential - Multi. Family		Ē	T.	h	4		Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation
Transient Lodging - Motels, Hotels		T	Т			4	requirements.
Schools, Libraries, Churches, Hospitals, Nursing Homes				2			Conditionally Acceptable New construction or development should be undertaken only after a detailed analysis of the noise reduction
Auditoriums, Concert Halls, Amphitheaters							requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning
Sports Arena, Outdoor Spectator Sports							will normally suffice.
Playgrounds, Neighborhood Parks							Normally Unacceptable New construction or development should generally be discouraged. If new construction or development does
Golf Courses, Riding Stables, Water Recreation, Cemeteries							proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
Office Buildings, Business Commercial and Professional							Clearly Unacceptable New construction or development
Industrial, Manufacturing, Utilities, Agriculture							should generally not be undertaken.

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

Source: OPR General Plan Guidelines, Appendix D: Noise Element Guidelines, Figure 2.



3.3.2 Noise Level Performance Standards

The City of Bakersfield General Plan Table VII-2 establishes the exterior noise level standards for stationary noise sources. Since the Project's land use could potentially impact nearby noise-sensitive uses in the Project study area, this noise study relies on the noise-sensitive residential stationary noise level standards given in the General Plan to describe Project related operational noise impacts. For residential properties, the exterior noise level shall not exceed 55 dBA L_{eq} during the daytime hours (7:00 a.m. to 10:00 p.m.) and 50 dBA L_{eq} during the nighttime hours (10:00 p.m. to 7:00 a.m.).

The exterior noise level standards apply for a cumulative period of 30 minutes in any hour, as well as the standard plus 5 dBA cannot be exceeded for a cumulative period of more than 15 minutes in any hour, or the standard plus 10 dBA for a cumulative period of more than 5 minutes in any hour, or the standard plus 15 dBA for a cumulative period of more than 1 minute in any hour, or the standard plus 20 dBA for any period of time. The City of Bakersfield stationary source noise level standards are shown on Table 3-1 and included in Appendix 3.2.

	Exterior Noise Level Standards (dBA) ¹					
Time Period	L ₅₀ (30 mins)	L ₂₅ (15 mins)	L ₈ (5 mins)	L ₂ (1 min)	L _{max} (Anytime)	
Daytime (7:00 a.m. to 10:00 p.m.)	55	60	65	70	75	
Nighttime (10:00 p.m. to 7:00 a.m.)	50	55	60	65	70	

TABLE 3-1: NOISE LEVEL PERFORMANCE STANDARDS

¹ City of Bakersfield General Plan Noise Element Table VII-2 Noise Level Performance Standards (Appendix 3.1). The percent noise level is the level exceeded "n" percent of the time during the measurement period. L_{50} is the noise level exceeded 50% of the time.

The percentile noise descriptors are provided to ensure that the duration of the noise source is fully considered. However, because the Project's operational activities are assumed to be relatively constant in intensity and do not involve loud bursts of single-event noise, the L_{50} or average L_{eq} noise level metrics best describe the outdoor loading dock activity, roof-top air conditioning units, drive-through speakerphone activity, trash enclosure activity, parking lot vehicle movements, and truck movements. In addition, the L_{eq} noise level metric accounts for noise fluctuations over time by averaging the louder and quieter events and giving more weight to the louder events. In addition, due to the mathematical relationship between the median (L_{50}) and the mean (L_{eq}), the L_{eq} will always be larger than or equal to the L_{50} . The more variable the noise becomes, the larger the L_{eq} sound level limits to describe the Project operational noise levels.

3.3 CITY OF BAKERSFIELD MUNICIPAL CODE

Chapter 9.22, Noise of the City of Bakersfield Municipal Code included in Appendix 3.2 finds that excessive, unnecessary, and annoying noise levels are detrimental to the public health, welfare and safety and contrary to the public interest.



3.3.1 NOISE GENERALLY

In addition to the noise level performance standards outlined in Table VII-2 of the General Plan Noise Element, the Municipal Code identifies the following provisions to protect persons from excessive levels of noise.

- Section 9.22.030[A]: It is unlawful for any person to willfully make or continue, or allow to be made or continued, any loud, unnecessary noise which disturbs the peace or quiet of any neighborhood or which causes discomfort or annoyance to persons residing within one thousand feet of the noise source.
- Section 9.22.030[C]: Refrigerator trucks shall be permitted to operate in any commercial or manufacturing zone at all hours; provided, however, that such use does not emit noise or vibration detrimentally impacting neighboring residential properties and the occupants thereof between ten p.m. and seven a.m.

3.3.2 Noise During Construction

To control noise impacts associated with construction, which would include construction of the proposed Project, Section 9.22.050 of the Municipal Code has established limits to the hours of construction activities. Section 9.22.050[A] states that it is unlawful for any person, firm or corporation to erect, demolish, alter or repair any building, or to grade or excavate land, streets or highways, other than between the hours of six a.m. and nine p.m. on weekdays, and between eight a.m. and nine p.m. on weekends. According to Section 9.22.050[C], limits to the hours of construction shall not apply to any work of construction performed one thousand feet or more from the nearest residential dwelling.

3.4 CONSTRUCTION NOISE STANDARDS

According to the FTA, local noise ordinances are typically not very useful in evaluating construction noise. They usually relate to nuisance and hours of allowed activity, and sometimes specify limits in terms of maximum levels, but are generally not practical for assessing the impact of a construction project. Project construction noise criteria should account for the existing noise environment, the absolute noise levels during construction activities, the duration of the construction, and the adjacent land use. Due to the lack of standardized construction noise thresholds, the FTA provides guidelines that can be considered reasonable criteria for construction noise assessment. The FTA considers a daytime exterior construction noise level of 80 dBA L_{eq} as a reasonable threshold for noise sensitive residential land use with a nighttime exterior construction noise level of 70 dBA L_{eq} . (8 p. 179)

3.5 CONSTRUCTION VIBRATION STANDARDS

Construction activity can result in varying degrees of ground-borne vibration, depending on the equipment and methods used, distance to the affected structures and soil type. Construction vibration is generally associated with pile driving and rock blasting. Other construction equipment such as air compressors, light trucks, hydraulic loaders, etc., generates little or no ground vibration. (8) To analyze vibration impacts originating from the operation and construction of the Majestic Gateway, vibration-generating activities are appropriately evaluated

against standards established under a City's Municipal Code, if such standards exist. However, the City of Bakersfield does not identify specific vibration level limits. Therefore, for analysis purposes, the Caltrans *Transportation and Construction Vibration Guidance Manual*, (11 p. 38) Table 19, vibration damage are used in this noise study to assess potential temporary construction-related impacts at adjacent building locations. The nearest noise sensitive buildings adjacent to the Project site can best be described as "older residential structures" with a maximum acceptable continuous vibration threshold of 0.3 PPV (in/sec).



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4 SIGNIFICANCE CRITERIA

The following significance criteria are based on currently adopted guidance provided by Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (1) For the purposes of this report, impacts would be potentially significant if the Project results in or causes:

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

4.1 Noise Level Increases (Threshold A)

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 baseline 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) 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_{eq}).

As previously stated, the approach used in this noise study recognizes *that there is no single noise increase that renders the noise impact significant*, based on a 2008 California Court of Appeal ruling on Gray v. County of Madera. (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, a *readily perceptible* 5 dBA or greater project-related noise level increase is considered a significant impact when the without project noise levels are below 60 dBA. Per the FICON, in areas where the without project noise levels range from 60 to 65 dBA, a 3 dBA *barely perceptible* noise level increase appears to be appropriate for most people. When the without project noise levels already exceed 65 dBA, any

increase in community noise louder than 1.5 dBA or greater is considered a significant impact if the noise criteria for a given land use is exceeded, since it likely contributes to an existing noise exposure exceedance. The FICON guidance provides an established source of criteria to assess the impacts of substantial temporary or permanent increase in baseline ambient noise levels. Based on the FICON criteria, the amount to which a given noise level increase is considered acceptable is reduced when the without Project (baseline) noise levels are already shown to exceed certain land-use specific exterior noise level criteria. The specific levels are based on typical responses to noise level increases of 5 dBA or *readily perceptible*, 3 dBA or *barely perceptible*, and 1.5 dBA depending on the underlying without Project noise levels for noisesensitive uses.

According to the General Plan Noise Element *Standards for Project Noise Impacts for Mobile Sources* (10 p. VII_13), the off-site traffic noise level increase criteria is limited to existing noise-sensitive land uses. In addition, these levels of increases and their perceived acceptance are consistent with the guidance provided by both the Federal Highway Administration (4 p. 9) and Caltrans (14 p. 2_48).

4.2 VIBRATION (THRESHOLD B)

As described in Section 3.5, the vibration impacts originating from the construction of Majestic Gateway, vibration-generating activities are appropriately evaluated using the Caltrans vibration damage thresholds to assess potential temporary construction-related impacts at adjacent building locations. The nearest noise sensitive buildings adjacent to the Project site can best be described as "older residential structures" with a maximum acceptable continuous vibration threshold of 0.3 PPV (in/sec).

4.3 CEQA GUIDELINES NOT FURTHER ANALYZED (THRESHOLD C)

CEQA Noise Threshold C applies when there are nearby public and private airports and/or air strips and focuses on land use compatibility of the Project to nearby airports and airstrips. The Project site is not located within two miles of an airport or airstrip. The closest airport is the Bakersfield Municipal Airport located roughly 2.5 miles northeast of the Project site. As such, the Project site would not be exposed to excessive noise levels from airport operations, and therefore, impacts are considered *less than significant*, and no further noise analysis is conducted in relation to Appendix G to the CEQA Guidelines, Noise Threshold C.



4.4 SIGNIFICANCE CRITERIA SUMMARY

Noise impacts shall be considered significant if any of the following occur as a direct result of the proposed development. Table 4-1 shows the significance criteria summary matrix that includes the allowable criteria used to identify potentially significant incremental noise level increases.

Anghusia	Condition(a)	Significance Criteria			
Analysis	Condition(s)	Daytime	Nighttime		
	If ambient is < 60 dBA CNEL	bient is < 60 dBA CNEL ≥ 5 dBA CNEL Project incr			
Off-Site Traffic ¹	If ambient is 60 - 65 dBA CNEL	≥ 3 dBA CNEL P	roject increase		
Hame	If ambient is > 65 dBA CNEL	≥ 1.5 dBA CNEL	Project increase		
	Exterior Noise Level Standards ²	55 dBA L _{eq}	50 dBA L _{eq}		
Operational	If ambient is < 60 dBA Leq ¹ \geq 5 dBA L _{eq} Project increase				
Operational	If ambient is 60 - 65 dBA Leq ¹ \geq 3 dBA L _{eq} Project increase				
	If ambient is > 65 dBA Leq^1	≥ 1.5 dBA L _{eq} Project increase			
Construction	Construction activities are restricted within 1,000 feet of residential dwellings other than between the hours of six a.m. and nine p.m. on weekdays, and between eight a.m. and nine p.m. on weekends ³				
	Noise Level Threshold ⁴	80 dBA L _{eq}	70 dBA L _{eq}		
	Vibration Level Threshold ⁵	0.3 PPV	(in/sec)		

¹ FICON, 1992 and the City of Bakersfield Noise Element Standards for Project Noise Impacts for Mobile Sources. Consistent with the General Plan Noise Element (VII-13), off-site traffic noise level increase criteria are limited to existing noise-sensitive land uses.

² Metropolitan Bakersfield Noise Element Table VII-2 Noise Level Performance Standards.

³ City of Bakersfield Municipal Code Section 9.22.050[A].

⁴ Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual.

⁵ Caltrans Transportation and Construction Vibration Manual, April 2020 Table 19.

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



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5 EXISTING NOISE LEVEL MEASUREMENTS

To assess the existing noise level environment, 24-hour noise level measurements were taken at nine locations in the Project study area. The receiver locations were selected to describe and document the existing noise environment within the Project study area. Exhibit 5-A provides the boundaries of the Project study area and the noise level measurement locations. To fully describe the existing noise conditions, noise level measurements were collected by Urban Crossroads, Inc. on Wednesday, July 28, 2021. These measurements are intended to describe the baseline noise conditions existing at the time of the Project Notice of Preparation (NOP). 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 equivalent daytime and nighttime hourly noise levels. 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. (15)

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. (2) 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. (8)*

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. (8) 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 equivalent or the hourly energy average 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.

Location ¹	Description	Energy Average Noise Level (dBA L _{eq}) ²		
		Daytime	Nighttime	
L1	Located west of the Project site near single-family residence at 2402 Basque Hills Drive.	58.3	57.7	
L2	Located north of the Project site near single-family residence at 6801 Gretchen Court.	46.4	48.3	
L3	Located east of the Project site near single-family residence at 1609 Berkshire Road.	60.9	61.9	
L4	Located east of the Project site near single-family residence at 7417 Cross Glade Street.	59.8	60.2	
L5	Located east of the Project site near single-family residence at 7719 Snowbird Street.	60.8	59.3	
L6	Located east of the Project site near single-family residence at 8017 Snowbird Street.	65.8	65.0	
L7	Located south of the Project site near Guru Nanak Mission Sikh Center at 8601 South H Street.	53.6	56.0	
L8	Located southwest of the Project site near single- family residence at 2208 McGwire Court.	53.8	55.1	
L9	Located west of the Project site near single-family residence at 2303 March Avenue.	63.3	63.0	

TABLE 5-1: AMBIENT NOISE LEVEL MEASUREMENTS

¹ See Exhibit 5-A for the noise level measurement locations.

² Energy (logarithmic) average levels. The long-term 24-hour measurement worksheets are included in Appendix 5.2. "Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

Table 5-1 provides the equivalent 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 of the daytime and nighttime hours.



EXHIBIT 5-A: NOISE MEASUREMENT LOCATIONS

Site Boundary 🔺 Measurement Locations



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6 TRAFFIC NOISE METHODS AND PROCEDURES

The following section outlines the methods and procedures used to estimate and analyze the future traffic noise environment. Consistent with City of Bakersfield *Land Use Compatibility for Community Noise Environments* Guidelines for Land Use Planning (see Exhibit 3-A), all transportation related noise levels are presented in terms of the 24-hour CNEL's.

6.1 FHWA TRAFFIC NOISE PREDICTION MODEL

The expected roadway noise level increases from vehicular traffic were calculated by Urban Crossroads, Inc. using a computer program that replicates the Federal Highway Administration (FHWA) Traffic Noise Prediction Model- FHWA-RD-77-108. (16) This methodology is commonly used to describe the off-site traffic noise levels throughout California and is consistent with the City of Bakersfield General Plan Noise Element.

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 conducted by Caltrans has shown that the use of soft site conditions is appropriate for the application of the FHWA traffic noise prediction model used in this analysis. (18)

6.1.1 OFF-SITE TRAFFIC NOISE PREDICTION MODEL INPUTS

Table 6-1 presents the roadway parameters used to assess the Project's off-site transportation noise impacts. Table 6-1 identifies the twenty off-site study area roadway segments, the distance from the centerline to adjacent land use based on the functional roadway classifications per the Metropolitan Bakersfield General Plan Circulation Element, and the posted vehicle speeds. The ADT volumes used in this study area presented on Table 6-2 are based on the Traffic Study for a Proposed Industrial/Warehouse and Retail Commercial Land Development at South H Street & Hosking Avenue, prepared by Ruettgers & Schuler Civil Engineers ("Traffic Study") for the following traffic scenarios. (19)

- 1. Existing (2021)
- 2. Existing (2021) + Full Project (Phases 1&2)
- 3. Year 2024 + Cumulative Other Projects
- 4. Year 2024 + Cumulative Other Projects + Full Project (Phases 1&2)
- 5. Year 2029 + Cumulative Other Projects



- 6. Year 2029 + Cumulative Other Projects + Full Project (Phases 1&2)
- 7. Year 2042 + Cumulative Other Projects
- 8. Year 2042 + Cumulative Other Projects + Full Project (Phases 1&2)

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

ID	Roadway	Segment	Classification ¹	Distance from Centerline to Receiving Land Use (Feet)	Vehicle Speed (mph)
1	S. H St.	n/o Fairview Rd.	Arterial	55'	45
2	S. H St.	n/o Panama Ln.	Arterial	55'	45
3	S. H St.	s/o Panama Ln.	Arterial	55'	50
4	S. H St.	n/o Hosking Av.	Arterial	160'	50
5	S. H St.	s/o Hosking Av.	Arterial	160'	50
6	S. H St.	n/o Taft Hwy.	Arterial	160'	50
7	Panama Ln.	w/o Akers Rd.	Arterial	55'	50
8	Panama Ln.	w/o Wible Rd.	Arterial	55'	50
9	Panama Ln.	e/o Wible Rd.	Arterial	55'	50
10	Panama Ln.	w/o Colony St.	Arterial	55'	50
11	Panama Ln.	w/o S. H St.	Arterial	55'	50
12	Panama Ln.	e/o S. H St.	Arterial	55'	45
13	Berkshire Rd.	w/o S. H St.	Collector	37'	45
14	Berkshire Rd.	e/o S. H St.	Collector	37'	45
15	Berkshire Rd.	e/o Monitor St.	Collector	37'	45
16	Hosking Av.	w/o Akers Rd.	Arterial	55'	50
17	Hosking Av.	w/o Wible Rd.	Arterial	55'	50
18	Hosking Av.	e/o Wible Rd.	Arterial	55'	50
19	Hosking Av.	w/o S. H St.	Arterial	55'	50
20	Hosking Av.	e/o S. H St.	Arterial	55'	50

TABLE 6-1: OFF-SITE ROADWAY PARAMETERS

¹ Metropolitan Bakersfield General Plan Circulation Element

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



		Segment	Average Daily Traffic Volumes ¹							
ID	Roadway		Existing		Year 2024 + Cumulative		Year 2029 + Cumulative		Year 2042 + Cumulative	
			Without Project	With Project	Without Project	With Project	Without Project	With Project	Without Project	With Project
1	S. H St.	n/o Fairview Rd.	18,902	21,205	19,087	21,390	19,147	21,450	19,343	21,646
2	S. H St.	n/o Panama Ln.	14,867	17,655	15,757	18,545	16,400	19,188	18,680	21,468
3	S. H St.	s/o Panama Ln.	8,958	14,776	10,153	15,971	10,447	16,265	11,472	17,290
4	S. H St.	n/o Hosking Av.	9,020	15,238	10,367	16,585	10,625	16,843	11,515	17,733
5	S. H St.	s/o Hosking Av.	6,251	6,493	8,950	9,192	9,632	9,874	12,351	12,593
6	S. H St.	n/o Taft Hwy.	6,263	6,505	6,497	6,739	6,544	6,786	6,699	6,941
7	Panama Ln.	w/o Akers Rd.	34,139	35,230	35,656	36,747	37,147	38,238	42,441	43,532
8	Panama Ln.	w/o Wible Rd.	31,594	32,564	32,819	33,789	33,927	34,897	37,794	38,764
9	Panama Ln.	e/o Wible Rd.	40,269	41,481	40,432	41,644	40,379	41,591	40,208	41,420
10	Panama Ln.	w/o Colony St.	30,064	32,910	30,900	33,746	31,316	34,162	32,708	35,554
11	Panama Ln.	w/o S. H St.	29,962	32,265	30,741	33,044	31,304	33,607	33,205	35,508
12	Panama Ln.	e/o S. H St.	21,669	22,396	22,257	22,984	22,604	23,331	23,772	24,499
13	Berkshire Rd.	w/o S. H St.	7,012	7,776	8,147	8,911	8,291	9,055	8,780	9,544
14	Berkshire Rd.	e/o S. H St.	7,113	7,234	7,776	7,897	8,394	8,515	10,766	10,887
15	Berkshire Rd.	e/o Monitor St.	7,144	7,265	7,876	7,997	8,654	8,775	11,760	11,881
16	Hosking Av.	w/o Akers Rd.	9,458	10,912	11,185	12,639	12,521	13,975	18,135	19,589
17	Hosking Av.	w/o Wible Rd.	11,286	13,104	13,543	15,361	15,138	16,956	21,836	23,654
18	Hosking Av.	e/o Wible Rd.	15,627	18,051	18,031	20,455	20,239	22,663	29,514	31,938
19	Hosking Av.	w/o S. H St.	16,096	19,266	19,417	22,587	21,691	24,861	31,244	34,414
20	Hosking Av.	e/o S. H St.	14,587	15,557	16,816	17,786	18,876	19,846	27,534	28,504

TABLE 6-2: AVERAGE DAILY TRAFFIC VOLUMES

¹ Traffic Study for a Proposed Industrial/Warehouse and Retail Commercial Development at South H Street and Hosking Avenue, Bakersfield, Ruettgers & Schuler.

Table 6-3 provides the time of day (daytime, evening, and nighttime) vehicle splits. Table 6-4 shows the traffic flow by vehicle type (vehicle mix) used for all without Project traffic scenarios, and Tables 6-5 to 6-8 show the vehicle mixes used for the with Project traffic scenarios. Due to the added Project truck trips, the increase in Project traffic volumes and the distributions of trucks on the study area road segments, the percentage of autos, medium trucks and heavy trucks will vary for each of the traffic scenarios. This explains why the existing and future traffic volumes and vehicle mixes vary between seemingly identical study area roadway segments.



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

TABLE 6-3: TIME OF DAY VEHICLE SPLITS

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

TABLE 6-4: WITHOUT PROJECT VEHICLE MIX

Classification	Total % Traffic Flow			Tabal	
Classification	Autos ¹	Medium Trucks ²	Heavy Trucks ³	Total	
All Segments	92.00%	3.00%	5.00%	100.00%	

¹ All vehicles with two axles and four wheels designed primarily for transportation of nine or fewer passengers (automobiles) or transportation of cargo (light trucks).

² All vehicles with two axles and six wheels designed for transportation of cargo.

³ All vehicles with three or more axles designed for the transportation of cargo.

TABLE 6-5: EXISTING WITH PROJECT VEHICLE MIX

			With Project ¹			
ID	Roadway	Segment	Autos	Medium Trucks	Heavy Trucks	Total ²
1	S. H St.	n/o Fairview Rd.	92.87%	2.67%	4.46%	100.00%
2	S. H St.	n/o Panama Ln.	93.26%	2.53%	4.21%	100.00%
3	S. H St.	s/o Panama Ln.	95.15%	1.82%	3.03%	100.00%
4	S. H St.	n/o Hosking Av.	91.84%	1.78%	6.39%	100.00%
5	S. H St.	s/o Hosking Av.	92.30%	2.89%	4.81%	100.00%
6	S. H St.	n/o Taft Hwy.	92.30%	2.89%	4.81%	100.00%
7	Panama Ln.	w/o Akers Rd.	92.25%	2.91%	4.85%	100.00%
8	Panama Ln.	w/o Wible Rd.	92.24%	2.91%	4.85%	100.00%
9	Panama Ln.	e/o Wible Rd.	92.23%	2.91%	4.85%	100.00%
10	Panama Ln.	w/o Colony St.	92.52%	2.74%	4.74%	100.00%
11	Panama Ln.	w/o S. H St.	92.57%	2.79%	4.64%	100.00%
12	Panama Ln.	e/o S. H St.	92.26%	2.90%	4.84%	100.00%
13	Berkshire Rd.	w/o S. H St.	86.07%	2.71%	11.22%	100.00%
14	Berkshire Rd.	e/o S. H St.	92.13%	2.95%	4.92%	100.00%
15	Berkshire Rd.	e/o Monitor St.	92.13%	2.95%	4.92%	100.00%
16	Hosking Av.	w/o Akers Rd.	93.07%	2.60%	4.33%	100.00%
17	Hosking Av.	w/o Wible Rd.	93.11%	2.58%	4.31%	100.00%
18	Hosking Av.	e/o Wible Rd.	93.07%	2.60%	4.33%	100.00%
19	Hosking Av.	w/o S. H St.	91.96%	2.51%	5.53%	100.00%
20	Hosking Av.	e/o S. H St.	92.50%	2.81%	4.69%	100.00%

¹ Total of vehicle mix percentage values rounded to the nearest one-hundredth.



				With P	roject ¹	
ID	Roadway	Segment	Autos	Medium Trucks	Heavy Trucks	Total ²
1	S. H St.	n/o Fairview Rd.	92.86%	2.68%	4.46%	100.00%
2	S. H St.	n/o Panama Ln.	93.20%	2.55%	4.25%	100.00%
3	S. H St.	s/o Panama Ln.	94.91%	1.91%	3.18%	100.00%
4	S. H St.	n/o Hosking Av.	91.85%	1.88%	6.27%	100.00%
5	S. H St.	s/o Hosking Av.	92.21%	2.92%	4.87%	100.00%
6	S. H St.	n/o Taft Hwy.	92.29%	2.89%	4.82%	100.00%
7	Panama Ln.	w/o Akers Rd.	92.24%	2.91%	4.85%	100.00%
8	Panama Ln.	w/o Wible Rd.	92.23%	2.91%	4.86%	100.00%
9	Panama Ln.	e/o Wible Rd.	92.23%	2.91%	4.85%	100.00%
10	Panama Ln.	w/o Colony St.	92.50%	2.75%	4.75%	100.00%
11	Panama Ln.	w/o S. H St.	92.56%	2.79%	4.65%	100.00%
12	Panama Ln.	e/o S. H St.	92.25%	2.91%	4.84%	100.00%
13	Berkshire Rd.	w/o S. H St.	86.83%	2.74%	10.43%	100.00%
14	Berkshire Rd.	e/o S. H St.	92.12%	2.95%	4.92%	100.00%
15	Berkshire Rd.	e/o Monitor St.	92.12%	2.95%	4.92%	100.00%
16	Hosking Av.	w/o Akers Rd.	92.92%	2.65%	4.42%	100.00%
17	Hosking Av.	w/o Wible Rd.	92.95%	2.64%	4.41%	100.00%
18	Hosking Av.	e/o Wible Rd.	92.95%	2.64%	4.41%	100.00%
19	Hosking Av.	w/o S. H St.	91.97%	2.58%	5.45%	100.00%
20	Hosking Av.	e/o S. H St.	92.44%	2.84%	4.73%	100.00%

TABLE 6-6: YEAR 2024 WITH PROJECT VEHICLE MIX

¹ Total of vehicle mix percentage values rounded to the nearest one-hundredth.



				With P	roject ¹	
ID	Roadway	Segment	Autos	Medium Trucks	Heavy Trucks	Total ²
1	S. H St.	n/o Fairview Rd.	92.86%	2.68%	4.46%	100.00%
2	S. H St.	n/o Panama Ln.	93.16%	2.56%	4.27%	100.00%
3	S. H St.	s/o Panama Ln.	94.86%	1.93%	3.21%	100.00%
4	S. H St.	n/o Hosking Av.	91.85%	1.89%	6.25%	100.00%
5	S. H St.	s/o Hosking Av.	92.20%	2.93%	4.88%	100.00%
6	S. H St.	n/o Taft Hwy.	92.29%	2.89%	4.82%	100.00%
7	Panama Ln.	w/o Akers Rd.	92.23%	2.91%	4.86%	100.00%
8	Panama Ln.	w/o Wible Rd.	92.22%	2.92%	4.86%	100.00%
9	Panama Ln.	e/o Wible Rd.	92.23%	2.91%	4.85%	100.00%
10	Panama Ln.	w/o Colony St.	92.50%	2.75%	4.75%	100.00%
11	Panama Ln.	w/o S. H St.	92.55%	2.79%	4.66%	100.00%
12	Panama Ln.	e/o S. H St.	92.25%	2.91%	4.84%	100.00%
13	Berkshire Rd.	w/o S. H St.	86.91%	2.75%	10.34%	100.00%
14	Berkshire Rd.	e/o S. H St.	92.11%	2.96%	4.93%	100.00%
15	Berkshire Rd.	e/o Monitor St.	92.11%	2.96%	4.93%	100.00%
16	Hosking Av.	w/o Akers Rd.	92.83%	2.69%	4.48%	100.00%
17	Hosking Av.	w/o Wible Rd.	92.86%	2.68%	4.46%	100.00%
18	Hosking Av.	e/o Wible Rd.	92.86%	2.68%	4.47%	100.00%
19	Hosking Av.	w/o S. H St.	91.97%	2.62%	5.41%	100.00%
20	Hosking Av.	e/o S. H St.	92.39%	2.85%	4.76%	100.00%

TABLE 6-7: YEAR 2029 WITH PROJECT VEHICLE MIX

¹ Total of vehicle mix percentage values rounded to the nearest one-hundredth.



				With P	roject ¹	
ID	Roadway	Segment	Autos	Medium Trucks	Heavy Trucks	Total ²
1	S. H St.	n/o Fairview Rd.	92.85%	2.68%	4.47%	100.00%
2	S. H St.	n/o Panama Ln.	93.04%	2.61%	4.35%	100.00%
3	S. H St.	s/o Panama Ln.	94.69%	1.99%	3.32%	100.00%
4	S. H St.	n/o Hosking Av.	91.86%	1.95%	6.19%	100.00%
5	S. H St.	s/o Hosking Av.	92.15%	2.94%	4.90%	100.00%
6	S. H St.	n/o Taft Hwy.	92.28%	2.90%	4.83%	100.00%
7	Panama Ln.	w/o Akers Rd.	92.20%	2.92%	4.87%	100.00%
8	Panama Ln.	w/o Wible Rd.	92.20%	2.92%	4.87%	100.00%
9	Panama Ln.	e/o Wible Rd.	92.23%	2.91%	4.85%	100.00%
10	Panama Ln.	w/o Colony St.	92.48%	2.76%	4.76%	100.00%
11	Panama Ln.	w/o S. H St.	92.52%	2.81%	4.68%	100.00%
12	Panama Ln.	e/o S. H St.	92.24%	2.91%	4.85%	100.00%
13	Berkshire Rd.	w/o S. H St.	87.17%	2.76%	10.07%	100.00%
14	Berkshire Rd.	e/o S. H St.	92.09%	2.97%	4.94%	100.00%
15	Berkshire Rd.	e/o Monitor St.	92.08%	2.97%	4.95%	100.00%
16	Hosking Av.	w/o Akers Rd.	92.59%	2.78%	4.63%	100.00%
17	Hosking Av.	w/o Wible Rd.	92.61%	2.77%	4.62%	100.00%
18	Hosking Av.	e/o Wible Rd.	92.61%	2.77%	4.62%	100.00%
19	Hosking Av.	w/o S. H St.	91.98%	2.72%	5.30%	100.00%
20	Hosking Av.	e/o S. H St.	92.27%	2.90%	4.83%	100.00%

TABLE 6-8: YEAR 2042 WITH PROJECT VEHICLE MIX

¹ Total of vehicle mix percentage values rounded to the nearest one-hundredth.



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7 OFF-SITE TRAFFIC NOISE ANALYSIS

To assess the off-site transportation CNEL noise level impacts associated with development of the proposed Project, noise contours were developed based on the Traffic Study for a Proposed Industrial/Warehouse and Retail Commercial Land Development at South H Street & Hosking Avenue, prepared by Ruettgers & Schuler Civil Engineers. (19) Noise contour boundaries represent the equal levels of noise exposure and are measured in CNEL from the center of the roadway.

7.1 TRAFFIC NOISE CONTOURS

Noise contours were used to assess the Project's incremental traffic-related noise impacts at land uses adjacent to roadways conveying Project traffic. The noise contours represent the distance to noise levels of a constant value and are measured from the center of the roadway for the 70, 65, and 60 dBA noise levels. The noise contours do not consider the effect of any existing noise barriers or topography that may attenuate ambient noise levels. In addition, because the noise contours reflect modeling of vehicular noise on area roadways, they appropriately do not reflect noise contributions from the surrounding stationary noise sources within the Project study area. Tables 7-1 to 7-8 present a summary of the exterior traffic noise levels for each traffic condition. Appendix 7.1 includes the traffic noise level contours worksheets.

ID	Road	Segment	CNEL at Receiving	Distance to Contour from Centerline (Feet)		
טו			Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	S. H St.	n/o Fairview Rd.	72.7	83	178	384
2	S. H St.	n/o Panama Ln.	71.6	70	152	327
3	S. H St.	s/o Panama Ln.	70.3	58	125	268
4	S. H St.	n/o Hosking Av.	62.7	RW	RW	241
5	S. H St.	s/o Hosking Av.	61.1	RW	RW	189
6	S. H St.	n/o Taft Hwy.	61.1	RW	RW	189
7	Panama Ln.	w/o Akers Rd.	76.1	141	304	655
8	Panama Ln.	w/o Wible Rd.	75.8	134	289	622
9	Panama Ln.	e/o Wible Rd.	76.9	157	339	731
10	Panama Ln.	w/o Colony St.	75.6	130	279	601
11	Panama Ln.	w/o S. H St.	75.6	129	279	600
12	Panama Ln.	e/o S. H St.	73.2	91	195	420
13	Berkshire Rd.	w/o S. H St.	71.0	43	92	199
14	Berkshire Rd.	e/o S. H St.	71.0	43	93	201
15	Berkshire Rd.	e/o Monitor St.	71.0	43	94	202
16	Hosking Av.	w/o Akers Rd.	70.6	60	129	278
17	Hosking Av.	w/o Wible Rd.	71.3	67	145	313
18	Hosking Av.	e/o Wible Rd.	72.7	84	180	389

TABLE 7-1: EXISTING WITHOUT PROJECT CONTOURS



ID	Road	Segment	CNEL at Receiving	Distance to Contour from Centerline (Feet)		
			Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
19	Hosking Av.	w/o S. H St.	72.9	85	184	397
20	Hosking Av.	e/o S. H St.	72.4	80	172	371

RW" = Location of the respective noise contour falls within the right-of-way of the road.

ID	Road	Segment	CNEL at Receiving	Distance to Contour from Centerline (Feet)		
			Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	S. H St.	n/o Fairview Rd.	72.8	85	183	394
2	S. H St.	n/o Panama Ln.	71.9	73	158	340
3	S. H St.	s/o Panama Ln.	71.2	66	143	308
4	S. H St.	n/o Hosking Av.	65.4	RW	170	366
5	S. H St.	s/o Hosking Av.	61.1	RW	RW	191
6	S. H St.	n/o Taft Hwy.	61.2	RW	RW	191
7	Panama Ln.	w/o Akers Rd.	76.2	142	306	660
8	Panama Ln.	w/o Wible Rd.	75.8	135	291	626
9	Panama Ln.	e/o Wible Rd.	76.9	159	342	736
10	Panama Ln.	w/o Colony St.	75.8	134	289	623
11	Panama Ln.	w/o S. H St.	75.7	132	284	611
12	Panama Ln.	e/o S. H St.	73.3	91	197	423
13	Berkshire Rd.	w/o S. H St.	73.7	65	141	304
14	Berkshire Rd.	e/o S. H St.	71.0	43	94	202
15	Berkshire Rd.	e/o Monitor St.	71.1	44	94	202
16	Hosking Av.	w/o Akers Rd.	70.8	62	134	288
17	Hosking Av.	w/o Wible Rd.	71.6	70	151	325
18	Hosking Av.	e/o Wible Rd.	73.0	87	187	403
19	Hosking Av.	w/o S. H St.	73.8	99	213	459
20	Hosking Av.	e/o S. H St.	72.5	81	175	377

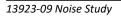
TABLE 7-2: EXISTING WITH PROJECT CONTOURS

 $^{\rm 1}$ The CNEL is calculated at the boundary of the receiving adjacent land use.



ID	Road	Segment	CNEL at Receiving	Distance to Contour from Centerline (Feet)		
U			Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	S. H St.	n/o Fairview Rd.	72.7	83	179	386
2	S. H St.	n/o Panama Ln.	71.9	73	158	340
3	S. H St.	s/o Panama Ln.	70.9	63	135	292
4	S. H St.	n/o Hosking Av.	63.3	RW	RW	265
5	S. H St.	s/o Hosking Av.	62.6	RW	RW	240
6	S. H St.	n/o Taft Hwy.	61.3	RW	RW	194
7	Panama Ln.	w/o Akers Rd.	76.3	145	313	674
8	Panama Ln.	w/o Wible Rd.	76.0	137	296	638
9	Panama Ln.	e/o Wible Rd.	76.9	158	340	733
10	Panama Ln.	w/o Colony St.	75.7	132	284	613
11	Panama Ln.	w/o S. H St.	75.7	132	283	610
12	Panama Ln.	e/o S. H St.	73.4	92	199	428
13	Berkshire Rd.	w/o S. H St.	71.6	47	102	220
14	Berkshire Rd.	e/o S. H St.	71.4	46	99	213
15	Berkshire Rd.	e/o Monitor St.	71.5	46	100	215
16	Hosking Av.	w/o Akers Rd.	71.3	67	144	311
17	Hosking Av.	w/o Wible Rd.	72.1	76	164	353
18	Hosking Av.	e/o Wible Rd.	73.4	92	199	428
19	Hosking Av.	w/o S. H St.	73.7	97	209	449
20	Hosking Av.	e/o S. H St.	73.1	88	190	408

 TABLE 7-3: YEAR 2024 WITHOUT PROJECT CONTOURS





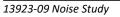
ID	Road	Segment	CNEL at Receiving	Distance to Contour from Centerline (Feet)		
U			Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	S. H St.	n/o Fairview Rd.	72.9	85	184	396
2	S. H St.	n/o Panama Ln.	72.1	76	164	353
3	S. H St.	s/o Panama Ln.	71.7	71	153	330
4	S. H St.	n/o Hosking Av.	65.7	RW	179	385
5	S. H St.	s/o Hosking Av.	62.7	RW	RW	242
6	S. H St.	n/o Taft Hwy.	61.3	RW	RW	196
7	Panama Ln.	w/o Akers Rd.	76.4	146	315	679
8	Panama Ln.	w/o Wible Rd.	76.0	138	298	642
9	Panama Ln.	e/o Wible Rd.	76.9	159	343	738
10	Panama Ln.	w/o Colony St.	75.9	137	294	634
11	Panama Ln.	w/o S. H St.	75.8	134	288	621
12	Panama Ln.	e/o S. H St.	73.4	93	200	431
13	Berkshire Rd.	w/o S. H St.	74.1	69	149	321
14	Berkshire Rd.	e/o S. H St.	71.4	46	99	214
15	Berkshire Rd.	e/o Monitor St.	71.5	47	100	216
16	Hosking Av.	w/o Akers Rd.	71.5	69	149	321
17	Hosking Av.	w/o Wible Rd.	72.3	79	169	364
18	Hosking Av.	e/o Wible Rd.	73.6	95	205	441
19	Hosking Av.	w/o S. H St.	74.5	109	236	508
20	Hosking Av.	e/o S. H St.	73.1	89	192	414

TABLE 7-4: YEAR 2024 WITH PROJECT CONTOURS



ID	Road	Segment	CNEL at Receiving	Distance to Contour from Centerline (Feet)		
U			Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	S. H St.	n/o Fairview Rd.	72.7	83	180	387
2	S. H St.	n/o Panama Ln.	72.0	75	162	349
3	S. H St.	s/o Panama Ln.	71.0	64	138	297
4	S. H St.	n/o Hosking Av.	63.4	RW	RW	269
5	S. H St.	s/o Hosking Av.	63.0	RW	RW	252
6	S. H St.	n/o Taft Hwy.	61.3	RW	RW	195
7	Panama Ln.	w/o Akers Rd.	76.5	149	321	692
8	Panama Ln.	w/o Wible Rd.	76.1	140	303	652
9	Panama Ln.	e/o Wible Rd.	76.9	158	340	732
10	Panama Ln.	w/o Colony St.	75.8	133	287	618
11	Panama Ln.	w/o S. H St.	75.8	133	287	618
12	Panama Ln.	e/o S. H St.	73.4	93	201	432
13	Berkshire Rd.	w/o S. H St.	71.7	48	103	223
14	Berkshire Rd.	e/o S. H St.	71.7	48	104	225
15	Berkshire Rd.	e/o Monitor St.	71.9	49	106	229
16	Hosking Av.	w/o Akers Rd.	71.8	72	156	335
17	Hosking Av.	w/o Wible Rd.	72.6	82	177	381
18	Hosking Av.	e/o Wible Rd.	73.9	100	214	462
19	Hosking Av.	w/o S. H St.	74.2	104	225	484
20	Hosking Av.	e/o S. H St.	73.6	95	205	441

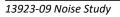
 TABLE 7-5: YEAR 2029 WITHOUT PROJECT CONTOURS





ID	Road	Segment	CNEL at Receiving	Distance to Contour from Centerline (Feet)		
U			Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	S. H St.	n/o Fairview Rd.	72.9	86	184	397
2	S. H St.	n/o Panama Ln.	72.3	78	168	362
3	S. H St.	s/o Panama Ln.	71.8	72	156	335
4	S. H St.	n/o Hosking Av.	65.8	RW	180	388
5	S. H St.	s/o Hosking Av.	63.0	RW	RW	254
6	S. H St.	n/o Taft Hwy.	61.3	RW	RW	197
7	Panama Ln.	w/o Akers Rd.	76.5	150	324	697
8	Panama Ln.	w/o Wible Rd.	76.2	141	305	656
9	Panama Ln.	e/o Wible Rd.	76.9	159	342	737
10	Panama Ln.	w/o Colony St.	76.0	138	297	639
11	Panama Ln.	w/o S. H St.	75.9	135	292	628
12	Panama Ln.	e/o S. H St.	73.5	94	202	435
13	Berkshire Rd.	w/o S. H St.	74.1	70	150	323
14	Berkshire Rd.	e/o S. H St.	71.8	49	105	225
15	Berkshire Rd.	e/o Monitor St.	71.9	50	107	230
16	Hosking Av.	w/o Akers Rd.	72.0	74	160	345
17	Hosking Av.	w/o Wible Rd.	72.8	84	182	391
18	Hosking Av.	e/o Wible Rd.	74.0	102	220	475
19	Hosking Av.	w/o S. H St.	74.9	116	251	540
20	Hosking Av.	e/o S. H St.	73.6	96	207	446

TABLE 7-6: YEAR 2029 WITH PROJECT CONTOURS





ID	Road	Segment	CNEL at Receiving	Distance to Contour from Centerline (Feet)		
			Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	S. H St.	n/o Fairview Rd.	72.8	84	181	390
2	S. H St.	n/o Panama Ln.	72.6	82	177	381
3	S. H St.	s/o Panama Ln.	71.4	68	147	316
4	S. H St.	n/o Hosking Av.	63.7	RW	RW	284
5	S. H St.	s/o Hosking Av.	64.0	RW	RW	298
6	S. H St.	n/o Taft Hwy.	61.4	RW	RW	198
7	Panama Ln.	w/o Akers Rd.	77.1	163	351	757
8	Panama Ln.	w/o Wible Rd.	76.6	151	325	701
9	Panama Ln.	e/o Wible Rd.	76.8	157	339	730
10	Panama Ln.	w/o Colony St.	75.9	137	295	636
11	Panama Ln.	w/o S. H St.	76.0	138	298	643
12	Panama Ln.	e/o S. H St.	73.7	96	208	447
13	Berkshire Rd.	w/o S. H St.	71.9	50	107	231
14	Berkshire Rd.	e/o S. H St.	72.8	57	123	265
15	Berkshire Rd.	e/o Monitor St.	73.2	61	130	281
16	Hosking Av.	w/o Akers Rd.	73.4	93	199	429
17	Hosking Av.	w/o Wible Rd.	74.2	105	226	486
18	Hosking Av.	e/o Wible Rd.	75.5	128	276	594
19	Hosking Av.	w/o S. H St.	75.7	133	286	617
20	Hosking Av.	e/o S. H St.	75.2	122	263	567

TABLE 7-7: YEAR 2042 WITHOUT PROJECT CONTOURS



ID	Road	Segment	CNEL at Receiving	Distance to Contour from Centerline (Feet)		
			Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	S. H St.	n/o Fairview Rd.	72.9	86	186	400
2	S. H St.	n/o Panama Ln.	72.8	85	182	393
3	S. H St.	s/o Panama Ln.	72.1	76	164	353
4	S. H St.	n/o Hosking Av.	66.0	RW	186	401
5	S. H St.	s/o Hosking Av.	64.1	RW	RW	299
6	S. H St.	n/o Taft Hwy.	61.4	RW	RW	200
7	Panama Ln.	w/o Akers Rd.	77.1	164	353	761
8	Panama Ln.	w/o Wible Rd.	76.6	152	327	705
9	Panama Ln.	e/o Wible Rd.	76.9	158	341	735
10	Panama Ln.	w/o Colony St.	76.2	142	305	657
11	Panama Ln.	w/o S. H St.	76.1	141	303	653
12	Panama Ln.	e/o S. H St.	73.7	97	209	450
13	Berkshire Rd.	w/o S. H St.	74.3	71	153	330
14	Berkshire Rd.	e/o S. H St.	72.8	57	123	266
15	Berkshire Rd.	e/o Monitor St.	73.2	61	131	282
16	Hosking Av.	w/o Akers Rd.	73.5	94	203	437
17	Hosking Av.	w/o Wible Rd.	74.3	107	230	495
18	Hosking Av.	e/o Wible Rd.	75.6	130	281	605
19	Hosking Av.	w/o S. H St.	76.3	144	310	668
20	Hosking Av.	e/o S. H St.	75.3	123	265	572

 TABLE 7-8: YEAR 2042 WITH PROJECT CONTOURS

RW" = Location of the respective noise contour falls within the right-of-way of the road.

7.2 EXISTING PROJECT TRAFFIC NOISE LEVEL INCREASES

An analysis of existing traffic noise levels plus traffic noise generated by the proposed Project has been included in this report for informational purposes and to fully analyze all the existing traffic scenarios identified in the Traffic Study. However, the analysis of existing off-site traffic noise levels plus traffic noise generated by the proposed Project scenario will not actually occur since the Project would not be fully constructed and operational until 2029 conditions. Table 7-1 shows the Existing without Project conditions CNEL noise levels. The Existing without Project exterior noise levels range from 61.1 to 76.9 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-2 shows the Existing with Project conditions ranging from 61.1 to 76.9 dBA CNEL. Table 7-9 shows that the Project off-site traffic noise level increases range from 0.0 to 2.7 dBA CNEL on the study area roadway segments.

Based on the significance criteria for off-site traffic noise presented in Section 4.1, existing noise sensitive land uses adjacent to the study area roadway segments would experience *less than significant* noise level impacts due to the unmitigated Project-related traffic noise levels. According to the General Plan Noise Element *Standards for Project Noise Impacts for Mobile*



Sources (10 p. VII_13), the off-site traffic noise level increase criteria is limited to existing noise sensitive land uses. Therefore, off-site traffic noise level impacts are limited to existing noise sensitive receivers that are likely to perceive an increase in traffic noise levels.

While the analysis shows that Berkshire Road west of S. H Street (Segment #13) will experience a noise level increase of 2.7 dBA CNEL, the land to the south is represented by the Project and the land to the north is vacant and is owned by Kaiser Permanente for possible medical facility development. Therefore, the off-site traffic noise level increase of 2.7 dBA CNEL on Berkshire Road west of S. H Street (Segment #13) is not considered a significant noise level impact since there are no existing adjacent noise sensitive receivers that will experience this increase over time.

7.3 2024 TRAFFIC NOISE LEVEL INCREASES

Table 7-3 presents the 2024 without Project conditions CNEL noise levels. The 2024 without Project exterior noise levels range from 61.3 to 76.9 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-4 shows that the 2024 with Project conditions will range from 61.3 to 76.9 dBA CNEL. Table 7-10 shows that the Project off-site traffic noise level increases range from 0.0 to 2.5 dBA CNEL.

Based on the significance criteria for off-site traffic noise presented in Section 4.1, land use adjacent to the study area roadway segments would experience *less than significant* noise level impacts due to the unmitigated Project-related traffic noise levels. While the analysis shows that Berkshire Road west of S. H Street (Segment #13) will experience a noise level increase of 2.5 dBA CNEL, the land to the south is represented by the Project and the land to the north is vacant and is owned by Kaiser Permanente for possible medical facility development. Therefore, the off-site traffic noise level increase of 2.5 dBA CNEL on Berkshire Road west of S. H Street (Segment #13) is not considered a significant noise level impact since there are no existing adjacent noise sensitive receivers that will experience this increase over time.

7.4 2029 TRAFFIC NOISE LEVEL INCREASES

Table 7-5 presents the 2029 without Project conditions CNEL noise levels. The 2029 without Project exterior noise levels range from 61.3 to 76.9 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-6 shows that the 2029 with Project conditions will range from 61.3 to 76.9 dBA CNEL. Table 7-11 shows that the Project off-site traffic noise level increases range from 0.0 to 2.4 dBA CNEL.

Based on the significance criteria for off-site traffic noise presented in Section 4.1, land use adjacent to the study area roadway segments would experience *less than significant* noise level impacts due to the unmitigated Project-related traffic noise levels. While the analysis shows that Berkshire Road west of S. H Street (Segment #13) will experience a noise level increase of 2.4 dBA CNEL, the land to the south is represented by the Project and the land to the north is vacant and is owned by Kaiser Permanente for possible medical facility development. Therefore, the off-site traffic noise level increase of 2.4 dBA CNEL on Berkshire Road west of S. H Street (Segment #13)



is not considered a significant noise level impact since there are no existing adjacent noise sensitive receivers that will experience this increase over time.

7.5 2042 TRAFFIC NOISE LEVEL INCREASES

Table 7-7 presents the 2042 without Project conditions CNEL noise levels. The 2042 without Project exterior noise levels range from 61.4 to 77.1 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-8 shows that the 2042 with Project conditions will range from 61.4 to 77.1 dBA CNEL. Table 7-12 shows that the Project off-site traffic noise level increases range from 0.0 to 2.4 dBA CNEL.

Based on the significance criteria for off-site traffic noise presented in Section 4.1, land use adjacent to the study area roadway segments would experience *less than significant* noise level impacts due to the unmitigated Project-related traffic noise levels. While the analysis shows that Berkshire Road west of S. H Street (Segment #13) will experience a noise level increase of 2.4 dBA CNEL, the land to the south is represented by the Project and the land to the north is vacant and is owned by Kaiser Permanente for possible medical facility development. Therefore, the off-site traffic noise level increase of 2.4 dBA CNEL on Berkshire Road west of S. H Street (Segment #13) is not considered a significant noise level impact since there are no existing adjacent noise sensitive receivers that will experience this increase over time.



ID	Road	Segment		EL at Receind Use (dE	-	Incremental Noise Level Increase Threshold ²		
			No Project	With Project	Project Addition	Limit	Exceeded?	
1	S. H St.	n/o Fairview Rd.	72.7	72.8	0.1	1.5	No	
2	S. H St.	n/o Panama Ln.	71.6	71.9	0.3	1.5	No	
3	S. H St.	s/o Panama Ln.	70.3	71.2	0.9	1.5	No	
4	S. H St.	n/o Hosking Av.	62.7	65.4	2.7	3.0	No	
5	S. H St.	s/o Hosking Av.	61.1	61.1	0.0	3.0	No	
6	S. H St.	n/o Taft Hwy.	61.1	61.2	0.1	3.0	No	
7	Panama Ln.	w/o Akers Rd.	76.1	76.2	0.1	1.5	No	
8	Panama Ln.	w/o Wible Rd.	75.8	75.8	0.0	1.5	No	
9	Panama Ln.	e/o Wible Rd.	76.9	76.9	0.0	1.5	No	
10	Panama Ln.	w/o Colony St.	75.6	75.8	0.2	1.5	No	
11	Panama Ln.	w/o S. H St.	75.6	75.7	0.1	1.5	No	
12	Panama Ln.	e/o S. H St.	73.2	73.3	0.1	1.5	No	
13	Berkshire Rd.	w/o S. H St.	71.0	73.7	2.7	_3	_3	
14	Berkshire Rd.	e/o S. H St.	71.0	71.0	0.0	1.5	No	
15	Berkshire Rd.	e/o Monitor St.	71.0	71.1	0.1	1.5	No	
16	Hosking Av.	w/o Akers Rd.	70.6	70.8	0.2	1.5	No	
17	Hosking Av.	w/o Wible Rd.	71.3	71.6	0.3	1.5	No	
18	Hosking Av.	e/o Wible Rd.	72.7	73.0	0.3	1.5	No	
19	Hosking Av.	w/o S. H St.	72.9	73.8	0.9	1.5	No	
20	Hosking Av.	e/o S. H St.	72.4	72.5	0.1	1.5	No	

TABLE 7-9: EXISTING WITH PROJECT TRAFFIC NOISE LEVEL INCREASES



ID	Road	Segment		EL at Receind Use (dE	-	Incremental Noise Level Increase Threshold ²		
			No Project	With Project	Project Addition	Limit	Exceeded?	
1	S. H St.	n/o Fairview Rd.	72.7	72.9	0.2	1.5	No	
2	S. H St.	n/o Panama Ln.	71.9	72.1	0.2	1.5	No	
3	S. H St.	s/o Panama Ln.	70.9	71.7	0.8	1.5	No	
4	S. H St.	n/o Hosking Av.	63.3	65.7	2.4	3.0	No	
5	S. H St.	s/o Hosking Av.	62.6	62.7	0.1	3.0	No	
6	S. H St.	n/o Taft Hwy.	61.3	61.3	0.0	3.0	No	
7	Panama Ln.	w/o Akers Rd.	76.3	76.4	0.1	1.5	No	
8	Panama Ln.	w/o Wible Rd.	76.0	76.0	0.0	1.5	No	
9	Panama Ln.	e/o Wible Rd.	76.9	76.9	0.0	1.5	No	
10	Panama Ln.	w/o Colony St.	75.7	75.9	0.2	1.5	No	
11	Panama Ln.	w/o S. H St.	75.7	75.8	0.1	1.5	No	
12	Panama Ln.	e/o S. H St.	73.4	73.4	0.0	1.5	No	
13	Berkshire Rd.	w/o S. H St.	71.6	74.1	2.5	_3	_3	
14	Berkshire Rd.	e/o S. H St.	71.4	71.4	0.0	1.5	No	
15	Berkshire Rd.	e/o Monitor St.	71.5	71.5	0.0	1.5	No	
16	Hosking Av.	w/o Akers Rd.	71.3	71.5	0.2	1.5	No	
17	Hosking Av.	w/o Wible Rd.	72.1	72.3	0.2	1.5	No	
18	Hosking Av.	e/o Wible Rd.	73.4	73.6	0.2	1.5	No	
19	Hosking Av.	w/o S. H St.	73.7	74.5	0.8	1.5	No	
20	Hosking Av.	e/o S. H St.	73.1	73.1	0.0	1.5	No	

TABLE 7-10: 2024 WITH PROJECT TRAFFIC NOISE LEVEL INCREASES



ID	Road	Segment		EL at Receind Use (dE	-	Incremental Noise Level Increase Threshold ²		
			No Project	With Project	Project Addition	Limit	Exceeded?	
1	S. H St.	n/o Fairview Rd.	72.7	72.9	0.2	1.5	No	
2	S. H St.	n/o Panama Ln.	72.0	72.3	0.3	1.5	No	
3	S. H St.	s/o Panama Ln.	71.0	71.8	0.8	1.5	No	
4	S. H St.	n/o Hosking Av.	63.4	65.8	2.4	3.0	No	
5	S. H St.	s/o Hosking Av.	63.0	63.0	0.0	3.0	No	
6	S. H St.	n/o Taft Hwy.	61.3	61.3	0.0	3.0	No	
7	Panama Ln.	w/o Akers Rd.	76.5	76.5	0.0	1.5	No	
8	Panama Ln.	w/o Wible Rd.	76.1	76.2	0.1	1.5	No	
9	Panama Ln.	e/o Wible Rd.	76.9	76.9	0.0	1.5	No	
10	Panama Ln.	w/o Colony St.	75.8	76.0	0.2	1.5	No	
11	Panama Ln.	w/o S. H St.	75.8	75.9	0.1	1.5	No	
12	Panama Ln.	e/o S. H St.	73.4	73.5	0.1	1.5	No	
13	Berkshire Rd.	w/o S. H St.	71.7	74.1	2.4	_3	_3	
14	Berkshire Rd.	e/o S. H St.	71.7	71.8	0.1	1.5	No	
15	Berkshire Rd.	e/o Monitor St.	71.9	71.9	0.0	1.5	No	
16	Hosking Av.	w/o Akers Rd.	71.8	72.0	0.2	1.5	No	
17	Hosking Av.	w/o Wible Rd.	72.6	72.8	0.2	1.5	No	
18	Hosking Av.	e/o Wible Rd.	73.9	74.0	0.1	1.5	No	
19	Hosking Av.	w/o S. H St.	74.2	74.9	0.7	1.5	No	
20	Hosking Av.	e/o S. H St.	73.6	73.6	0.0	1.5	No	

TABLE 7-11: 2029 WITH PROJECT TRAFFIC NOISE LEVEL INCREASES



ID Road		Segment		EL at Receind Use (dE	-	Incremental Noise Level Increase Threshold ²		
			No Project	With Project	Project Addition	Limit	Exceeded?	
1	S. H St.	n/o Fairview Rd.	72.8	72.9	0.1	1.5	No	
2	S. H St.	n/o Panama Ln.	72.6	72.8	0.2	1.5	No	
3	S. H St.	s/o Panama Ln.	71.4	72.1	0.7	1.5	No	
4	S. H St.	n/o Hosking Av.	63.7	66.0	2.3	3.0	No	
5	S. H St.	s/o Hosking Av.	64.0	64.1	0.1	3.0	No	
6	S. H St.	n/o Taft Hwy.	61.4	61.4	0.0	3.0	No	
7	Panama Ln.	w/o Akers Rd.	77.1	77.1	0.0	1.5	No	
8	Panama Ln.	w/o Wible Rd.	76.6	76.6	0.0	1.5	No	
9	Panama Ln.	e/o Wible Rd.	76.8	76.9	0.1	1.5	No	
10	Panama Ln.	w/o Colony St.	75.9	76.2	0.3	1.5	No	
11	Panama Ln.	w/o S. H St.	76.0	76.1	0.1	1.5	No	
12	Panama Ln.	e/o S. H St.	73.7	73.7	0.0	1.5	No	
13	Berkshire Rd.	w/o S. H St.	71.9	74.3	2.4	_3	_3	
14	Berkshire Rd.	e/o S. H St.	72.8	72.8	0.0	1.5	No	
15	Berkshire Rd.	e/o Monitor St.	73.2	73.2	0.0	1.5	No	
16	Hosking Av.	w/o Akers Rd.	73.4	73.5	0.1	1.5	No	
17	Hosking Av.	w/o Wible Rd.	74.2	74.3	0.1	1.5	No	
18	Hosking Av.	e/o Wible Rd.	75.5	75.6	0.1	1.5	No	
19	Hosking Av.	w/o S. H St.	75.7	76.3	0.6	1.5	No	
20	Hosking Av.	e/o S. H St.	75.2	75.3	0.1	1.5	No	

TABLE 7-12: 2042 WITH PROJECT TRAFFIC NOISE LEVEL INCREASES



8 SENSITIVE RECEIVER LOCATIONS

To assess the potential for long-term operational and short-term construction noise impacts, the following sensitive receiver locations, as shown on Exhibit 8-A, were identified as representative locations for analysis. Sensitive 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, outpatient clinics, cemeteries, golf courses, country clubs, athletic/tennis clubs, and equestrian clubs. Land uses that are considered relatively insensitive to noise include business, commercial, and professional developments. Land uses that are typically not affected by noise include: industrial, manufacturing, utilities, agriculture, undeveloped land, parking lots, warehousing, liquid and solid waste facilities, salvage yards, and transit terminals.

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

- R1: Location R1 represents the existing noise sensitive residence at 2402 Basque Hills Drive, approximately 199 feet west of the Project site. R1 is placed in the private outdoor living areas (backyard) facing the Project site. A 24-hour noise measurement was taken near this location, L1, to describe the existing ambient noise environment.
- R2: Location R2 represents the existing noise sensitive residence at 6816 Gretchen Court, approximately 1,447 feet north of the Project site. R2 is placed in the private outdoor living areas (backyard) facing the Project site. A 24-hour noise measurement was taken near this location, L2, to describe the existing ambient noise environment.
- R3: Location R3 represents the existing noise sensitive residence at 1609 Berkshire Road, approximately 259 feet east of the Project site. R3 is placed in the private outdoor living areas (backyard) facing the Project site. A 24-hour noise measurement was taken near this location, L3, to describe the existing ambient noise environment.
- R4: Location R4 represents the existing noise sensitive residence at 7503 Cross Glade Street, approximately 209 feet east of the Project site. R4 is placed in the private outdoor living areas (backyard) facing the Project site. A 24-hour noise measurement was taken near this location, L4, to describe the existing ambient noise environment.





EXHIBIT 8-A: RECEIVER LOCATIONS



- R5: Location R5 represents the existing noise sensitive residence at 7719 Snowbird Street, approximately 215 feet east of the Project site. R5 is placed in the private outdoor living areas (backyard) facing the Project site. A 24-hour noise measurement was taken near this location, L5, to describe the existing ambient noise environment.
- R6: Location R6 represents the existing noise sensitive residence at 8013 Snowbird Street, approximately 404 feet east of the Project site. R6 is placed in the private outdoor living areas (backyard) facing the Project site. A 24-hour noise measurement was taken near this location, L6, to describe the existing ambient noise environment.
- R7: Location R7 represents the existing noise sensitive Guru Nanak Mission Sikh Center at 8601 South H Street, approximately 1,539 feet south of the Project site. R7 is placed on the Gurdwara's building façade closest to the Project site. A 24-hour noise measurement was taken near this location, L7, to describe the existing ambient noise environment.
- R8: Location R8 represents the existing noise sensitive residence at 2204 McGwire Court, approximately 875 feet southwest of the Project site. R8 is placed in the private outdoor living areas (backyard) facing the Project site. A 24-hour noise measurement was taken near this location, L8, to describe the existing ambient noise environment.
- R9: Location R9 represents the existing noise sensitive residence at 2303 March Avenue, approximately 301 feet west of the Project site. R9 is placed in the private outdoor living areas (backyard) facing the Project site. A 24-hour noise measurement was taken near this location, L9, to describe the existing ambient noise environment.



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9 OPERATIONAL NOISE IMPACTS

This section analyzes the potential stationary-source operational noise impacts at the nearest receiver locations, identified in Section 8, resulting from the operation of the proposed Majestic Gateway Project. Exhibit 9-A identifies the noise source locations used to assess the operational noise levels.

9.1 OPERATIONAL NOISE SOURCES

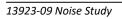
This operational noise analysis is intended to describe noise level impacts associated with the expected typical of daytime and nighttime activities at the Project site. Consistent with similar warehouse uses, the Project business operations would primarily be conducted within the enclosed buildings, except for traffic movement, parking, as well as loading and unloading of trucks at designated loading bays. The on-site Project-related noise sources are expected to include: outdoor loading dock activity, roof-top air conditioning units, drive-through speakerphone activity, trash enclosure activity, parking lot vehicle movements, and truck movements.

9.2 REFERENCE NOISE LEVELS

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

9.2.1 MEASUREMENT PROCEDURES

The reference noise level measurements presented in this section were collected using 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. (15)





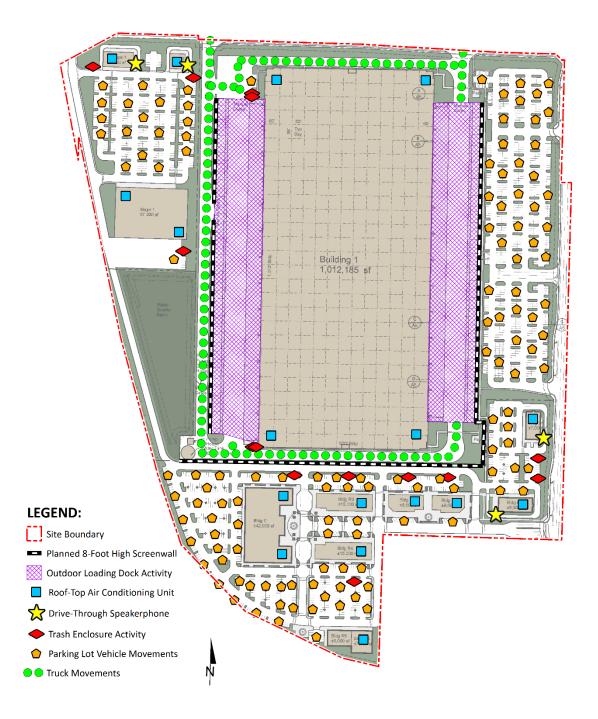


EXHIBIT 9-A: OPERATIONAL NOISE SOURCE LOCATIONS



Noise Source ¹	NUISE		n./ ur²	Reference Noise Level	Sound Power	
Noise Source-	Height (Feet)	Day	Night	(dBA L _{eq}) @ 50 Feet	Level (dBA) ³	
Outdoor Loading Dock Activity	8'	60	60	64.4	109.7	
Roof-Top Air Conditioning Units	5'	39	28	57.2	88.9	
Drive-Through Speakerphone Activity	3'	60	60	50.0	84.0	
Trash Enclosure Activity	5'	10	10	57.3	89.0	
Parking Lot Vehicle Movements	5'	60	60	55.7	87.8	
Truck Movements	8'	60	60	59.9	91.6	

TABLE 9-1: REFERENCE NOISE LEVEL MEASUREMENTS

¹ As measured by Urban Crossroads, Inc.

² Anticipated duration (minutes within the hour) of noise activity during typical hourly conditions expected at the Project site. "Daytime" = 7:00 a.m. - 10:00 p.m.; "Nighttime" = 10:00 p.m. - 7:00 a.m.

³Sound power level represents the total amount of acoustical energy (noise level) produced by a sound source independent of distance or surroundings. Sound power levels calculated using the CadnaA noise model at the reference distance to the noise source.

9.2.2 OUTDOOR LOADING DOCK ACTIVITY

To describe the outdoor loading dock activities, reference noise level measurements were collected at the Tejon Ranch Commerce Center located west of the I-5 Freeway in unincorporated Kern County. The 24-hour reference noise level measurements were collected adjacent to the Dollar General Distribution Center loading docks entry gate and represent the typical outdoor operational noise activities associated with the planned Project warehouse land uses. This includes heavy tractor trailer truck deliveries, air brakes, backup alarms, trailer docking and background operation activities. To ensure that the reference noise level accurately describes the peak hourly noise source activities, sixty of the highest one-minutes individual measurements observed over the 1,440 minute or 24-hour measurement period, were used to describe the outdoor loading dock activities. At a uniform distance of 50 feet from the source the outdoor loading dock activities representing multiple concurrent noise sources produced a combined noise level of 64.4 dBA Leq.

The outdoor loading dock activity reference noise level measurements collected at the Tejon Ranch Commerce Center are generally consistent with similar levels collected by Urban Crossroads, Inc. This includes the noise levels generated by cold storage loading dock activity that can be slightly higher due to the use of refrigerated trucks or reefers. Previous measurements collected at the Nature's Best distribution facility located at 16081 Fern Avenue in the City of Chino suggest that reefer activity (refrigerator truck/cold storage) generate a combined noise level of 65.7 dBA L_{eq} at a uniform distance of 50 feet. Since the warehouse floor space is reasonably expected to be occupied by 90% fulfillment center and 10% cold storage (19), a reference noise level of 65.7 dBA L_{eq} is used in this operational noise analysis to fully describe all the Project outdoor loading dock activities.



9.2.3 ROOF-TOP AIR CONDITIONING UNITS

To assess the noise levels created by the roof-top air conditioning units, reference noise level measurements were collected from a Lennox SCA120 series 10-ton model packaged air conditioning unit. At 5 feet from the roof-top air conditioning unit, the exterior noise levels were measured at 77.2 dBA L_{eq} . At the uniform reference distance of 50 feet, the reference noise levels are 57.2 dBA L_{eq} . Based on the typical operating conditions observed over a four-day measurement period, the roof-top air conditioning units are estimated to operate for and average 39 minutes per hour during the daytime hours, and 28 minutes per hour during the nighttime hours. These operating conditions reflect peak summer cooling requirements with measured temperatures approaching 96 degrees Fahrenheit (°F) with average daytime temperatures of 82°F. For this noise analysis, the air conditioning units are expected to be located on the roof of the Project buildings. This reference noise level describes the expected roof-top air conditioning units located 5 feet above the roof for the planned air conditioning units at the Project site.

9.2.4 DRIVE-THROUGH SPEAKERPHONE ACTIVITY

To describe the potential noise level impacts associated with the planned drive-thru speakerphones, this analysis relies on the drive-through intercom system manufactured by HME. This type of system is commonly used by the quick service restaurant (QSR) industry for drive-thru communications. The HME SPP2 speaker post intercom system produces a maximum noise level of 84 dBA at one foot from the speaker post. The system may also be equipped with an automatic volume control that can automatically reduce the sound levels as the ambient noise level decreases. The reference speakerphone noise level describes continuous drive-through operations and does not include any periods of inactivity.

9.2.5 TRASH ENCLOSURE ACTIVITY

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

9.2.5 PARKING LOT VEHICLE MOVEMENTS

To describe the on-site parking lot vehicle movement activity, a long-term 24-hour reference noise level measurement was collected in the center of activity within the employee parking lot of the Dollar General Distribution Center. To ensure that the reference noise level accurately describes the peak hourly noise source activities, sixty of the highest one-minutes individual



measurements observed over the 1,440 minute or 24-hour measurement period, were used to describe the parking lot vehicle movements. At 50 feet from the center of activity, the parking lot produced a reference noise level of 55.7 dBA L_{eq} . Parking activities are expected to take place during the full hour (60 minutes) throughout the daytime and evening hours. The parking lot noise levels are mainly due cars pulling in and out of parking spaces in combination with car doors opening and closing.

9.2.6 TRUCK MOVEMENTS

The truck movements reference noise level measurement was collected on Tejon Industrial Drive at the intersection of Industrial Parkway Drive. The truck movements at this location include the heavy tractor trailers truck movements associated with the Dollar General, Vision Media, and the IKEA distribution centers. Using the sixty highest one-minute measurements collected over a 24-hour period, the heavy trucks entering and exiting the outdoor loading dock area produced a reference noise level of 59.9 dBA Leq at 50 feet

9.3 CADNAA NOISE PREDICTION MODEL

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

Using the ISO 9613-2 protocol, CadnaA will calculate the distance from each noise source to the noise receiver locations, using the ground absorption, distance, and barrier/building attenuation inputs to provide a summary of noise level at each receiver and the partial noise level contributions by noise source. Consistent with the ISO 9613-2 protocol, the CadnaA noise prediction model relies on the reference sound power level (L_w) to describe individual noise sources. While sound pressure levels (e.g., L_{eq}) quantify in decibels the intensity of given sound sources at a reference distance, sound power levels (L_w) are connected to the sound source and are independent of distance. Sound pressure levels vary substantially with distance from the source and diminish because of intervening obstacles and barriers, air absorption, wind, and other factors. Sound power is the acoustical energy emitted by the sound source and is an absolute value that is not affected by the environment.

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

9.4 PROJECT OPERATIONAL NOISE LEVELS

Using the reference noise levels to represent the proposed Project operations that include outdoor loading dock activity, roof-top air conditioning units, drive-through speakerphone activity, trash enclosure activity, parking lot vehicle movements, and truck movements, Urban Crossroads, Inc. calculated the operational source noise levels that are expected to be generated at the Project site and the Project-related noise level increases that would be experienced at each of the sensitive receiver locations. Table 9-2 shows the Project operational noise levels during the daytime hours of 7:00 a.m. to 10:00 p.m. The daytime hourly noise levels at the off-site receiver locations are expected to range from 36.8 to 48.1 dBA Leq. This includes the additional noise attenuation provided by the existing noise barriers shown on Exhibit 8-A and the planned 8-foot-high screen walls shown on Exhibit 9-A.

Noise Source ¹		Operational Noise Levels by Receiver Location (dBA Leq)								
Noise Source-	R1	R2	R3	R4	R5	R6	R7	R8	R9	
Outdoor Loading Dock Activity	35.0	42.7	44.8	46.9	46.4	39.6	36.6	38.6	40.6	
Roof-Top Air Conditioning Units	25.7	28.1	28.8	28.7	34.6	32.0	28.7	28.7	28.4	
Drive-Through Speakerphone Activity	6.6	16.9	12.7	13.3	23.5	19.5	12.5	9.1	11.1	
Trash Enclosure Activity	17.1	20.1	14.0	17.5	25.1	22.2	15.1	17.0	17.1	
Parking Lot Vehicle Movements	30.7	34.2	39.3	41.8	40.6	36.0	34.5	35.1	34.4	
Truck Movements	22.4	30.7	30.4	27.8	23.2	21.1	19.1	23.9	25.0	
Total (All Noise Sources)	36.8	43.4	46.0	48.1	47.7	41.7	39.1	40.5	41.8	

TABLE 9-2: DAYTIME PROJECT OPERATIONAL NOISE LEVELS

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

Tables 9-3 shows the Project operational noise levels during the nighttime hours of 10:00 p.m. to 7:00 a.m. The nighttime hourly noise levels at the off-site receiver locations are expected to range from 36.6 to 48.1 dBA L_{eq} . The differences between the daytime and nighttime noise levels are largely related to the estimated duration of noise activity as outlined in Table 9-1 and Appendix 9.1.

Noise Source ¹		Operational Noise Levels by Receiver Location (dBA Leq)								
		R2	R3	R4	R5	R6	R7	R8	R9	
Outdoor Loading Dock Activity	35.0	42.7	44.8	46.9	46.4	39.6	36.6	38.6	40.6	
Roof-Top Air Conditioning Units	23.3	25.7	26.4	26.3	32.2	29.6	26.3	26.3	26.0	
Drive-Through Speakerphone Activity	6.6	16.9	12.7	13.3	23.5	19.5	12.5	9.1	11.1	
Trash Enclosure Activity	16.2	19.2	13.0	16.5	24.2	21.2	14.1	16.0	16.1	
Parking Lot Vehicle Movements	30.7	34.2	39.3	41.8	40.6	36.0	34.5	35.1	34.4	
Truck Movements	22.4	30.7	30.4	27.8	23.2	21.1	19.1	23.9	25.0	
Total (All Noise Sources)	36.6	43.4	45.9	48.1	47.6	41.5	39.0	40.4	41.7	

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



9.5 PROJECT OPERATIONAL NOISE LEVEL COMPLIANCE

To demonstrate compliance with local noise regulations, the Project-only operational noise levels are evaluated against exterior noise level thresholds based on the City of Bakersfield exterior noise level standards at nearby noise-sensitive receiver locations. Table 9-4 shows the operational noise levels associated with Majestic Gateway Project will satisfy the City of Bakersfield daytime and nighttime exterior noise level standards. Therefore, the operational noise impacts are considered *less than significant* at the nearby noise-sensitive receiver locations.

Receiver Location ¹	Project Operational Noise Levels (dBA Leq) ²			l Standards Leq) ³	Noise Level Standards Exceeded? ⁴		
Location	Daytime	Nighttime	Daytime	Nighttime	Daytime	Nighttime	
R1	36.8	36.6	55	50	No	No	
R2	43.4	43.4	55	50	No	No	
R3	46.0	45.9	55	50	No	No	
R4	48.1	48.1	55	50	No	No	
R5	47.7	47.6	55	50	No	No	
R6	41.7	41.5	55	50	No	No	
R7	39.1	39.0	55	50	No	No	
R8	40.5	40.4	55	50	No	No	
R9	41.8	41.7	55	50	No	No	

TABLE 9-4: OPERATIONAL NOISE LEVEL COMPLIANCE

¹ See Exhibit 8-A for the receiver locations.

 $^{\rm 2}$ Proposed Project operational noise levels as shown on Tables 9-2 and 9-3.

³ City of Bakersfield Noise Element Table VII-2 Noise Level Performance Standards (Table 3-1).

⁴ Do the estimated Project operational noise source activities exceed the noise level standards?

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

9.5 PROJECT OPERATIONAL NOISE LEVEL INCREASES

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

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

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 describes the Project noise level increases 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 9-5 and 9-6, respectively.

As indicated on Tables 9-5, the Project will generate a daytime operational noise level increases ranging from 0.0 to 1.8 dBA Leq at the nearest receiver locations. Table 9-6 shows that the Project will generate a nighttime operational noise level increases ranging from 0.0 to 1.2 dBA Leq at the nearest receiver locations. Project-related operational noise level increases will satisfy the operational noise level increase significance criteria presented in Table 4-1. Therefore, the increases at the sensitive receiver locations will be less than significant.

Receiver Location ¹	Total Project Operational Noise Level ²	Measurement Location ³	Reference Ambient Noise Levels ⁴	Combined Project and Ambient ⁵	Project Increase ⁶	Increase Criteria ⁷	Increase Criteria Exceeded?
R1	36.8	L1	58.3	58.3	0.0	5.0	No
R2	43.4	L2	46.4	48.2	1.8	5.0	No
R3	46.0	L3	60.9	61.0	0.1	3.0	No
R4	48.1	L4	59.8	60.1	0.3	5.0	No
R5	47.7	L5	60.8	61.0	0.2	3.0	No
R6	41.7	L6	65.8	65.8	0.0	1.5	No
R7	39.1	L7	53.6	53.8	0.2	5.0	No
R8	40.5	L8	53.8	54.0	0.2	5.0	No
R9	41.8	L9	63.3	63.3	0.0	3.0	No
_	41.8	_	63.3	63.3	0.0	3.0	No

TABLE 9-5: DAYTIME PROJECT OPERATIONAL NOISE LEVEL INCREASES

¹ See Exhibit 8-A for the receiver locations.

² Total Project daytime operational noise levels as shown on Table 9-2.

³ Reference noise level measurement locations as shown on Exhibit 5-A.

⁴ Observed daytime ambient noise levels as shown on Table 5-1.

⁵ Represents the combined ambient conditions plus the Project activities.

⁶ The noise level increase expected with the addition of the proposed Project activities.

⁷ Significance increase criteria as shown on Table 4-1.



Receiver Location ¹	Total Project Operational Noise Level ²	Measurement Location ³	Reference Ambient Noise Levels ⁴	Combined Project and Ambient ⁵	Project Increase ⁶	Increase Criteria ⁷	Increase Criteria Exceeded?
R1	36.6	L1	57.7	57.7	0.0	5.0	No
R2	43.4	L2	48.3	49.5	1.2	5.0	No
R3	45.9	L3	61.9	62.0	0.1	3.0	No
R4	48.1	L4	60.2	60.5	0.3	3.0	No
R5	47.6	L5	59.3	59.6	0.3	5.0	No
R6	41.5	L6	65.0	65.0	0.0	1.5	No
R7	39.0	L7	56.0	56.1	0.1	5.0	No
R8	40.4	L8	55.1	55.2	0.1	5.0	No
R9	41.7	L9	63.0	63.0	0.0	3.0	No

TABLE 9-6: NIGHTTIME OPERATIONAL NOISE LEVEL INCREASES

¹ See Exhibit 8-A for the receiver locations.

² Total Project nighttime operational noise levels as shown on Table 9-2.

³ Reference noise level measurement locations as shown on Exhibit 5-A.

⁴ Observed nighttime ambient noise levels as shown on Table 5-1.

⁵ Represents the combined ambient conditions plus the Project activities.

⁶ The noise level increase expected with the addition of the proposed Project activities.

⁷ Significance increase criteria as shown on Table 4-1.



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10 CONSTRUCTION IMPACTS

This section analyzes potential impacts resulting from the short-term construction activities associated with the development of the Project. Exhibit 10-A shows the limits of construction noise source activities in relation to the nearby sensitive receiver locations previously described in Section 8. The limits of construction include the off-site roadway and utility improvements needed to support the Project development. According to Section 9.22.050[A] of the City of Bakersfield Municipal Code, it is unlawful for any person, firm or corporation to erect, demolish, alter or repair any building, or to grade or excavate land, streets or highways, other than between the hours of six a.m. and nine p.m. on weekdays, and between eight a.m. and nine p.m. on weekends within one thousand feet of a residential dwelling. Section 9.22.050[C], limits to hours of construction shall not apply to any work of construction performed one thousand feet or more from the nearest residential dwelling.

Neither the General Plan or Municipal Code establish numeric maximum acceptable construction source noise levels at potentially affected receivers for CEQA analysis purposes. Therefore, a numerical construction threshold based on Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual is used for analysis of daytime construction impacts. The FTA considers a daytime exterior construction noise level of 80 dBA Leq as a reasonable threshold for noise sensitive residential land use. (8 p. 179)

10.1 CONSTRUCTION NOISE LEVELS

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

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

10.2 CONSTRUCTION REFERENCE NOISE LEVELS

To describe peak construction noise activities, this construction noise analysis was prepared using reference noise level measurements published in the Update of Noise Database for Prediction of Noise on Construction and Open Sites by the Department for Environment, Food and Rural Affairs (DEFRA) (24). The DEFRA database provides the most recent and comprehensive source of reference construction noise levels. Table 10-1 provides a summary of the DEFRA construction reference noise level measurements expressed in hourly average dBA L_{eq} using the estimated FHWA Roadway Construction Noise Model (RCNM) usage factors (25) to describe the construction activities for each stage of Project construction.





EXHIBIT 10-A: CONSTRUCTION NOISE SOURCE LOCATIONS

13923-09 Noise Study



Construction Stage	Reference Construction Activity ¹	Reference Noise Level @ 50 Feet (dBA L _{eq}) ¹	Combined Noise Level (dBA L _{eq}) ²	
C'I	Crawler Tractors	77		
Site Preparation	Hauling Trucks	71	79	
reparation	Rubber Tired Dozers	71		
	Graders	79		
Grading	Excavators	64	79	
	Compactors	67		
	Cranes	67		
Building Construction	Tractors	72	74	
construction	Welders	65		
	Pavers	70		
Paving	Paving Equipment	69	74	
	Rollers	69		
	Cranes	67		
Architectural Coating	Air Compressors	67	72	
coating	Generator Sets	67		

TABLE 10-1: CONSTRUCTION REFERENCE NOISE LEVELS

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

² Represents the combined noise level for all equipment assuming they operate at the same time consistent with FTA Transit Noise and Vibration Impact Assessment guidance for general construction noise assessment.

10.3 CONSTRUCTION NOISE ANALYSIS

Using the reference construction equipment noise levels and the CadnaA noise prediction model, calculations of the Project construction noise level impacts at the nearby sensitive receiver locations were completed. To assess the worst-case construction noise levels, the Project construction noise analysis relies on the highest noise level impacts when multiple pieces of equipment with the highest reference noise level are operating at the closest point from the edge of primary construction activity (Project site boundary) to each receiver location. Consistent with FTA guidance for general construction noise assessment, Table 10-1 presents the combined noise levels for all equipment, assuming they operate at the same time at the Project site boundary, which although not realistic in a practical sense is a worst-case assumption for analytical purposes in determining the highest possible noise level are expected to range from 53.3 to 68.9 dBA L_{eq}, and the highest construction levels are expected to range from 60.3 to 68.9 dBA L_{eq} at the nearby receiver locations. This includes the additional noise attenuation provided by the existing noise barriers shown on Exhibit 10-A. Appendix 10.1 includes the detailed CadnaA construction noise model inputs.



Receiver Location ¹	Construction Noise Levels (dBA Leq)					
	Site Preparation	Grading	Building Construction	Paving	Architectural Coating	Highest Levels ²
R1	60.3	60.3	55.3	55.3	53.3	60.3
R2	65.4	65.4	60.4	60.4	58.4	65.4
R3	67.2	67.2	62.2	62.2	60.2	67.2
R4	68.7	68.7	63.7	63.7	61.7	68.7
R5	68.9	68.9	63.9	63.9	61.9	68.9
R6	67.9	67.9	62.9	62.9	60.9	67.9
R7	64.3	64.3	59.3	59.3	57.3	64.3
R8	62.9	62.9	57.9	57.9	55.9	62.9
R9	64.0	64.0	59.0	59.0	57.0	64.0

TABLE 10-2: CONSTRUCTION EQUIPMENT NOISE LEVEL SUMMARY

¹Noise receiver locations are shown on Exhibit 10-A.

² Construction noise level calculations based on distance from the construction activity, which is measured from the Project site boundary to the nearest receiver locations. CadnaA construction noise model inputs are included in Appendix 10.1.

10.4 CONSTRUCTION NOISE LEVEL COMPLIANCE

To evaluate whether the Project will generate potentially significant short-term noise levels at nearest receiver locations, a construction-related daytime noise level threshold of 80 dBA L_{eq} is used as a reasonable threshold to assess the daytime construction noise level impacts. The construction noise analysis shows that the nearest receiver locations will satisfy the reasonable daytime 80 dBA L_{eq} significance threshold during Project construction activities as shown on Table 10-3. Therefore, the direct noise impacts due to Project construction noise are considered *less than significant* at all receiver locations.

It is expected that the nearest sensitive receiver locations may also experience additional background construction noise impacts due to other project construction activities. However, it is unlikely that combined cumulative construction noise levels of multiple concurrent projects would not exceed the reasonable daytime 80 dBA L_{eq} significance threshold at the nearby receiver locations. In addition, the Municipal Code Section 9.22.050[A] limits the days and hours of construction activity to avoid disturbances during the noise sensitive nighttime hours. Because construction activities are typically limited to weekdays, during daylight hours, the direct and cumulative construction noise impacts are considered a nuisance or annoying, rather than a significant impact upon surrounding land uses



	Construction Noise Levels (dBA Leq)				
Receiver Location ¹	Highest Construction Noise Levels ²	Threshold ³	Threshold Exceeded? ⁴		
R1	60.3	80	No		
R2	65.4	80	No		
R3	67.2	80	No		
R4	68.7	80	No		
R5	68.9	80	No		
R6	67.9	80	No		
R7	64.3	80	No		
R8	62.9	80	No		
R9	64.0	80	No		

TABLE 10-3: CONSTRUCTION NOISE LEVEL COMPLIANCE

¹Noise receiver locations are shown on Exhibit 10-A.

 2 Highest construction noise level calculations based on distance from the construction noise source activity to the nearest receiver locations as shown on Table 10-2.

³ Construction noise level thresholds as shown on Table 4-1.

⁴ Do the estimated Project construction noise levels exceed the construction noise level threshold?

10.5 NIGHTTIME CONCRETE POUR NOISE ANALYSIS

It is our understanding that nighttime concrete pouring activities will occur as a part of Project building construction activities. Nighttime concrete pouring activities are often used to support reduced concrete mixer truck transit times and lower air temperatures than during the daytime hours and are generally limited to the actual building pad area. Since the nighttime concrete pours will take place during the restricted City of Bakersfield Municipal Code Section 9.22.050[A] hours of six a.m. and nine p.m. on weekdays, and between eight a.m. and nine p.m. on weekends, the Project Applicant will be required to obtain authorization for nighttime work from the City of Bakersfield. Any nighttime construction noise activities are evaluated against the FTA nighttime exterior construction noise level threshold of 70 dBA Leq for noise sensitive residential land use (8 p. 179).

10.5.1 NIGHTTIME CONCRETE POUR REFERENCE NOISE LEVEL MEASUREMENTS

To estimate the noise levels due to nighttime concrete pour activities, sample reference noise level measurements were taken during a nighttime concrete pour at the Prologis Redlands Distribution Center construction site. Urban Crossroads, Inc. collected short-term nighttime concrete pour reference noise level measurements during the noise-sensitive nighttime hours between 1:00 a.m. to 2:00 a.m. at 27334 San Bernardino Avenue in the City of Redlands. The reference noise levels describe the expected concrete pour noise sources that may include concrete mixer truck movements and pouring activities, concrete paving equipment, rear mounted concrete mixer truck backup alarms, engine idling, air brakes, generators, and workers communicating/whistling.



To describe the nighttime concrete pour noise levels associated with the construction of the Majestic Gateway, this analysis relies on reference noise levels of 67.7 dBA L_{eq} at 50 feet with a noise source height of 6 feet. While the Project noise levels will depend on the actual duration of activities and specific equipment fleet in use at the time of construction, the sample reference noise levels of 67.7 dBA L_{eq} is used to describe the expected Project nighttime concrete pour noise activities.

10.5.2 NIGHTTIME CONCRETE POUR NOISE LEVEL COMPLIANCE

As shown on Table 10-4, the noise levels associated with the nighttime concrete pour activities are estimated to range from 49.0 to 57.6 dBA L_{eq} . This includes the additional noise attenuation provided by the existing noise barriers shown on Exhibit 10-A. The analysis shows that the unmitigated nighttime concrete pour activities will satisfy the FTA 70 dBA L_{eq} nighttime residential noise level threshold at all the nearest noise sensitive receiver locations. Appendix 10.2 includes the CadnaA nighttime concrete pour noise model inputs.

	Concrete Pour Construction Noise Levels (dBA Leq)				
Receiver Location ¹	Exterior Noise Levels ²	Threshold ³	Threshold Exceeded? ⁴		
R1	49.0	70	No		
R2	54.1	70	No		
R3	55.9	70	No		
R4	57.4	70	No		
R5	57.6	70	No		
R6	56.6	70	No		
R7	53.0	70	No		
R8	51.6	70	No		
R9	52.7	70	No		

TABLE 10-4: NIGHTTIME CONCRETE POUR NOISE LEVEL COMPLIANCE

¹Noise receiver locations are shown on Exhibit 10-A.

²Nighttime Concrete Pour noise model inputs are included in Appendix 10.2.

 $^{\rm 3}$ Construction noise level thresholds as shown on Table 4-1.

⁴ Do the estimated Project construction noise levels exceed the construction noise level threshold?

10.6 CONSTRUCTION VIBRATION ANALYSIS

Construction activity can result in varying degrees of ground vibration, depending on the equipment and methods employed. Operation of construction equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Ground vibration levels associated with various types of construction equipment are summarized on Table 10-5. Based on the representative vibration levels presented for various construction equipment types, it is possible to estimate the potential for human response (annoyance) and building damage using the following vibration assessment methods defined by the FTA.



To describe the vibration impacts the FTA provides the following equation: $PPV_{equip} = PPV_{ref} x (25/D)^{1.5}$

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

TABLE 10-5:	: VIBRATION SOURCE LEVELS FOR CONSTRUCT	TION EQUIPMENT

Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual

Table 10-6 presents the expected Project related vibration levels at the nearby receiver locations. At distances ranging from 187 to 1,447 feet from Project construction activities, construction vibration velocity levels are estimated to range from 0.000 to 0.004 in/sec PPV. Based on maximum acceptable continuous vibration threshold of 0.3 PPV (in/sec), the typical Project construction vibration levels will fall below the building damage thresholds at all the noise sensitive receiver locations. Therefore, the Project-related vibration impacts are considered *less than significant* during typical construction activities at the Project site. Moreover, the vibration levels reported at the sensitive receiver locations are unlikely to be sustained during the entire construction period but will occur rather only during the times that heavy construction equipment is operating adjacent to the Project site perimeter.

	Distance to	Typical Construction Vibration Levels PPV (in/sec) ³				Thresholds	Thresholds	
Receiver ¹	Const. Activity (Feet) ²	Small bulldozer	Jackhammer	Loaded Trucks	Large bulldozer	Highest Vibration Level	PPV (in/sec)⁴	Exceeded? ⁵
R1	192'	0.000	0.002	0.004	0.004	0.004	0.3	No
R2	1,415'	0.000	0.000	0.000	0.000	0.000	0.3	No
R3	199'	0.000	0.002	0.003	0.004	0.004	0.3	No
R4	195'	0.000	0.002	0.003	0.004	0.004	0.3	No
R5	196'	0.000	0.002	0.003	0.004	0.004	0.3	No
R6	187'	0.000	0.002	0.004	0.004	0.004	0.3	No
R7	1,447'	0.000	0.000	0.000	0.000	0.000	0.3	No
R8	875'	0.000	0.000	0.000	0.000	0.000	0.3	No
R9	301'	0.000	0.001	0.002	0.002	0.002	0.3	No

TABLE 10-6: PROJECT CONSTRUCTION VIBRATION LEVELS

¹Receiver locations are shown on Exhibit 10-A.

² Distance from receiver location to Project construction boundary.

³ Based on the Vibration Source Levels of Construction Equipment (Table 10-4).

⁴ Caltrans Transportation and Construction Vibration Guidance Manual, April 2020, Tables 19, p. 38.

⁵ Does the peak vibration exceed the acceptable vibration thresholds?

"PPV" = Peak Particle Velocity



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- 24. FHWA. Roadway Construction Noise Model. January 2006.



12 CERTIFICATION

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

Bill Lawson, P.E., INCE Principal URBAN CROSSROADS, INC. 1133 Camelback #8329 Newport Beach, CA 92658 (949) 581-3148 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

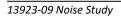
PE – Registered Professional Traffic Engineer – TR 2537 • January, 2009
AICP – American Institute of Certified Planners – 013011 • June, 1997–January 1, 2012
PTP – Professional Transportation Planner • May, 2007 – May, 2013
INCE – Institute of Noise Control Engineering • March, 2004

PROFESSIONAL AFFILIATIONS

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

PROFESSIONAL CERTIFICATIONS

Certified Acoustical Consultant – County of San Diego • March, 2018 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 BAKERSFIELD GENERAL PLAN NOISE ELEMENT



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STATUTORY REQUIREMENTS

The contents of a Noise Element have been determined by the requirements of Section 65302(f) of the California Government Code and by "Guidelines for the Preparation and Content of Noise Elements of the General Plan" published by the California Office of Noise Control (ONC) in 1976. The Government Code and ONC Guidelines require that certain major noise sources and areas containing noise sensitive land uses be identified and quantified by preparing generalized noise exposure contours for current and projected levels of activity within the community.

Pursuant to the Government Code and ONC Guidelines, the following major noise sources were considered in the preparation of the Noise Element:

- Highways and freeways
- Primary arterials and major local streets
- Railroad operations
- Aircraft and airport operations
- Local industrial facilities
- Other stationary sources

Due to the size and scale of the noise contour maps (1"=400'), they are not reproduced in this document, but can be referenced in the City of Bakersfield Planning Department or the Kern County Department of Planning and Development Services.

Also considered in the preparation of the Noise Element are areas containing the following noise sensitive land uses:

- Schools
- Hospitals
- Rest homes
- Long-term medical or mental care facilities
- Other uses deemed noise sensitive by the local jurisdiction

The purpose of this Noise Element is to provide a means for protecting local citizens from the harmful effects of excessive exposure to noise.

OVERVIEW OF EXISTING CONDITIONS

MAJOR NOISE SOURCES

Based on discussions with government officials and the results of field studies by Brown-Buntin Associates (BBA), it was determined that there are four major sources of community noise within the study area. These sources are traffic on state highways and major local streets, railroad operations, airport operations and local industrial activities. Specific noise sources selected for study are listed.

STATE HIGHWAYS

- State Route 58
- State Route 99
- State Route 119
- State Route 178
- State Route 184
- State Route 204

MAJOR LOCAL STREETS RAILROAD OPERATIONS

- Burlington Northern Santa Fe Railway (B.N.S.E.) -Southern Pacific Transportation Company (SPTCo.)

AIRPORT OPERATIONS

- Kern County Airport (Meadows Field)
- Bakersfield Airpark

INDUSTRIAL FACILITIES AND OTHER MAJOR STATIONARY NOISE SOURCES

- Lake Ming Boat Races
- Mesa Marin Raceway
- Burlington Northern Santa Fe Classification Yard
- Southern Pacific Classification Yard
- Kern Rock Company
- Calcrete
- Coors Recycling Center
- United States Cold Storage

A combination of noise monitoring and analytical noise modeling techniques were used to develop generalized noise exposure contours around the major noise sources identified above for existing (1985 or 1986) and future (2010) conditions.

The analytical methods used in this report closely follow recommendations made by ONC, and were supplemented where appropriate by field-measured noise level data to account for local conditions. It should be noted that the noise exposure contours presented in this report are based upon annual average or in some cases maximum noise level conditions, and are not intended to be site-specific where local topography, vegetation or intervening structures may significantly affect noise exposure at a particular location.

1. Highways and Major Local Streets

The Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA-RD-77-108) was used to develop Community Noise Equivalent Level (CNEL) contours for state highways and major local streets within the study area.

The FHWA Model was developed to predict hourly L_{eq} values for free-flowing traffic conditions, and is generally considered to be accurate within plus or minus 1.5 dB. To predict CNEL values, it is necessary to determine the hourly distribution of traffic for a typical 24-hour day and adjust the traffic volume input data to yield an equivalent hourly traffic volume.

Traffic volumes and truck percentages for existing (1985-86) and future (2010) conditions on the state highways in the study area were obtained from Caltrans. Future projections of annual average daily traffic volumes on state highways are based upon a yearly growth factor of 3.6 percent which is the five-year average for 1979-1984 as published by Caltrans. Traffic volumes for existing and future conditions on major local streets were obtained from the City of Bakersfield and County of Kern Roads Departments.

Using existing traffic data and the FHWA methodology, traffic noise levels as defined by CNEL were calculated for existing (1985-86) and projected future (2010) traffic volumes on the state highways and the major local streets identified for study.

The approximate locations of the 60 and 65 dB CNEL contours for these roadways have been plotted on 400 scale maps. Only those contours which are located at distances of greater than 75 feet from the center of the roadway are shown on the 400 scale maps. It should be noted that since the methodology used to develop generalized contours did not take into consideration shielding which may be caused by buildings or topography in some areas, the distances on the 400 scale maps should be considered as worst-case estimates of traffic noise exposure in the community.

2. Railroad Operations

Two rail companies provide service in the Bakersfield area. Noise measurements of Burlington Northern Santa Fe and Southern Pacific Transportation Co, trains were conducted in Bakersfield in May 1986 to document noise levels generated by individual rail movements in the community. Noise level measurements of branch line operations conducted.

Noise exposure levels as defined by CNEL for railroad operations in the study area were calculated using the Simplified Procedure for Assessment of Noise Emitted by On-Line Railroad Operations, prepared by Wyle Laboratories (Report No. 59197-1) in March 1974 and railroad operational data. The Wyle Methodology is an analytical method used to predict railway noise which is based upon reference energy emission levels for diesel locomotives and freight/passenger cars with consideration given to numbers of locomotives and cars, speed, track conditions, and distance to the receiver. The approximate locations of the 65 and 60 CNEL contours for 1986 conditions are shown on the 400 scale maps.

As in the case of traffic noise contours, railroad noise contours should be considered as estimates of worst-case exposure since no adjustments have been made for shielding provided by intervening topography or buildings. CNEL contours for the McKittrick and Oildale branch lines have not been illustrated on the 400 scale maps.

Although noise levels from individual train movements on these branch lines produce short term noise impacts when they occur, such impacts do not occur frequently enough to produce a significant noise exposure as defined by CNEL.

TABLE VII-1

Distance (Feet) from Center of Track to CNEL Contour Values for Existing (1986) Railroad Operations

Railroad	Segment	CNEL 65 dB	CNEL 60 dB
Southern Pacific Transportation Co.	SPTCo. Mainline Yard to the northwest within 1,000' of grade crossings)	342 (631)	730 (1,360)
Southern Pacific Transportation Co. and Burlington Northern Santa Fe	SPTCo. Mainline Combined Operations Yard to Edison (within 1,000' of grade crossings)	464 (858)	1,000 (1,848)
Burlington Northern Santa Fe	AT&SF Mainline Yard to the northwest (within 1,000' of grade crossings)	342 (631)	730 (1,360)
Burlington Northern Santa Fe	SPTCo. Arvin Branchline (within 1,000' of grade crossings)	369 (681)	794 (1,468)
Southern Pacific Transportation Co.	SPTCo. McKittrick Branchline (within 1,000' of grade crossings)	25 (46)	54 (100)
Burlington Northern	SPTCo. Oildale Branchline (within 1,000' of grade crossings)	25 (46)	54 (100)

Source: Brown-Buntin Associates.

3. Airport Operations

Two airports are located within the planning area. Meadows Field is owned and operated by Kern County. Bakersfield Municipal Airport is owned and operated by the City of Bakersfield.

In 1996, the City and County adopted the Airport Land Use Compatibility Plan (ALUCP). This document was prepared using the materials entitled "Kern County Airport Land Use Compatibility Plan" dated June 1994. It includes material, including noise contours, prepared by Hodges and Shutt, an aviation consulting firm under contract to the Kern Council of Governments (Kern COG).

The noise contours contained in the ALUCP are calculated based on aircraft activity forecasts which are set forth in an airport master plan or which are considered by the local agency to be plausible.

The locations of CNEL contours are one of the factors used to define compatibility zone boundaries and criteria. It is intended that noise compatibility criteria be applied at the general plan level. Because of the inherent variability of flight paths and other factors that influence noise emissions, the depicted contour boundaries are not absolute determinants of the compatibility of a given land use.

4. Industrial Facilities and Other Stationary Noise Sources

a. Calcrete

The Calcrete plant is located near the intersection of Pacheco and Wible Roads. The most significant sources of noise associated with this operation are vibrators located in the sand and cement bins to keep materials moving through the system.

Maximum noise levels during the operation of the cement bin vibrator were 60-65 dB(A) at approximately 500 feet northwest of the plant. Based upon the above-described noise level data and operational data, a generalized 60 dB CNEL contour was prepared depicting a worst case condition with a 12-hour work shift beginning at 7 a.m.

b. Lake Ming Boat Races

Lake Ming, located about nine miles northeast of central Bakersfield, is operated by the Kern County Parks and Recreation Department as a recreational lake for both power and sail boats. Several times each year, boat racing consisting of circle boat or drag boat racing, is permitted on the lake. On April 19, 1986, Brown-Buntin Associates monitored noise levels from drag racing events at four different locations around the lake in order to determine maximum noise levels (L_{max}).

The noise levels recorded by Brown-Buntin Associates and Kern County indicate that drag boat racing activity on Lake Ming can conflict with noise-sensitive land uses in the area. A generalized 75 dB(A) maximum noise level contour for boat racing activities at Lake Ming is shown on the 400 scale 1986 and 2010 noise exposure contour maps. 75 dB(A) represents the maximum exterior daytime noise level currently allowed by the City of Bakersfield Noise Element for residential properties. CNEL contours for boat racing on Lake Ming were not prepared since such activities occur only a few times per year.

c. Mesa Marin Raceway

Mesa Marin Raceway is located near the intersection of State Routes 178 and 184 about 8 miles east of central Bakersfield. Classes of modified stock cars racing at the track include Street Stocks, Super Modified Stocks, and Open Competition Stocks

Noise level measurements near Mesa Marin Raceway were conducted by Brown-Buntin Associates during the evening of April 19, 1986. Typical median (L_{50}) noise levels recorded ranged from 61 to 70 dB(A) with typical maximum levels reaching 87 dB(A). At El Dorado Estates, about 2 miles from Mesa Marin maximum noise levels of 48-52 dB(A) were recorded. At a site 0.9 miles west of the raceway, maximum noise levels ranged from 58-62 dB(A).

In the parking lot of the raceway, maximum noise levels of 60-67 dB(A) were recorded. It should be noted that at this location the earthen berm which borders the southern portion of the oval track considerably reduces noise levels. Based upon the above-described topographical factors and noise level data, the worst case 70 and 75 dB(A) maximum noise level contours were plotted on 400 scale maps. CNEL contours were not prepared for this facility due to the relatively infrequent use of the track.

d. Kern Rock Company

The Kern Rock Company sand and gravel operation is located approximately 1,500 feet west of the intersection of Wible and Pacheco Roads. Noise generating activities include truck traffic (hauling sand and gravel to the stockpile area, picking up loads of bulk cement and hauling concrete ready-mix), and the operation of the plant itself. Based upon noise levels and plant operational data, the location of the 60 dB CNEL contour was estimated to be 300 feet from the plant.

e. Burlington Northern Santa Fe: Railroad Classification Yard

The Burlington Northern Santa Fe railroad yard is located east of Oak Street between 16th Street and California Avenue. Generalized CNEL contours for this facility were prepared using operational data obtained from the railroad for existing conditions. These are shown on the 400 scale noise exposure maps for 1986 and 2010. Operational data obtained from the railroad were intended to be representative of annual average conditions, although it was recognized that activity varies considerably with seasonal demands and economic conditions

f. Southern Pacific Transportation Company: Railroad Classification Yard

The SPTCo. railroad classification yard is located east of Beale Avenue between Sumner and Kentucky Streets in Bakersfield. The Wyle methodology was used to develop generalized CNEL contours around the facility for existing levels of yard operations, which are shown on the large scale map.

Operational data were obtained from the railroad to represent annual average conditions, although it was recognized that activity varies considerably throughout the year due to seasonal demands and economic conditions.

g. Jack Frost Ice Co.

The Jack Frost Ice Co. facility is located at the southwest intersection of Stine Road and District Boulevard. Noise sources associated with the plant include two compressors located on the roof of the building and truck traffic entering and leaving the loading dock area.

Noise measurements with both compressors operating at a distance of 140 feet from the approximate center of the plant resulted in a noise level of 64.1 dB(A) L_{eq} . The approximate location of the 60 dB CNEL contour based upon the above-described noise level and operational data are shown on the large scale map.

h. Joey Recycling Center

This facility is located on the south side of White Lane between Hughes Lane and South H Street. Noise generating activities consist of the unloading and crushing of aluminum cans using a hydraulic press. Noise measurements 400 feet from the facility were conducted on the morning of May 14, 1986, while the crusher was in operation. The measured Leq at this location was 64.7 dB(A). Based upon the above-described noise level and operational data, a generalized 60 dB CNEL contour was prepared and is shown on the 400 scale maps.

NOISE SENSITIVE AREAS

The following noise sensitive land uses have been identified in the study area:

- Residential areas
- Schools
- Convalescent and acute care hospitals
- Parks and recreational areas

As suggested by the Office of Noise Control Guidelines, a community noise survey was conducted in March 1986 to document existing noise exposure in areas of the community containing noise sensitive land uses. The purpose of the community noise survey was to define the existing noise environment in areas of the community outside the Ldn 60 dB contour where noise sensitive land uses are located; to provide a numerical check of noise levels determined by mathematical modeling techniques and to serve as a basis for establishing quantitative land use compatibility criteria and noise performance standards consistent with existing noise levels in the community. Since the geographic scope of the study area is over 400 square miles, including both developed and undeveloped lands, noise measurements were conducted only in urbanized areas.

The results of the community noise survey indicate that the mean noise level as defined by CNEL in areas of the community where noise sensitive land uses are located is approximately 57 dB, ranging from 44 to 64 dB. Such levels are typical of suburban residential neighborhoods and are considered normally acceptable for all noise sensitive land uses according to criteria suggested by the Office of Noise Control Guidelines (Figure VII-1).

The median noise level (L_{50}) is the criterion commonly used in noise ordinances or in other types of performance standards to assess the acceptability of noise sensitive land uses located in proximity to commercial or industrial noise sources. During the survey, median (L_{50}) noise levels at the sites monitored continuously for 24 hours or more ranged from 38 to 49 dB(A) during the daytime hours (7 a.m. to 10 p.m.). During the nighttime hours (10 p.m. to 7 a.m.), L_{50} levels ranged from 24 to 48 dB(A).

Maintenance of desirable noise exposures for sensitive areas are addressed through consideration of sporadic noise normally associated with stationary land uses. Table VII-2 provides a method of determining land use compatibility for sensitive uses through the assignment of noise exceedence levels and time restrictions.

TABLE VII-2

NOISE LEVEL PERFORMANCE STANDARDS* Exterior Noise Level Standards

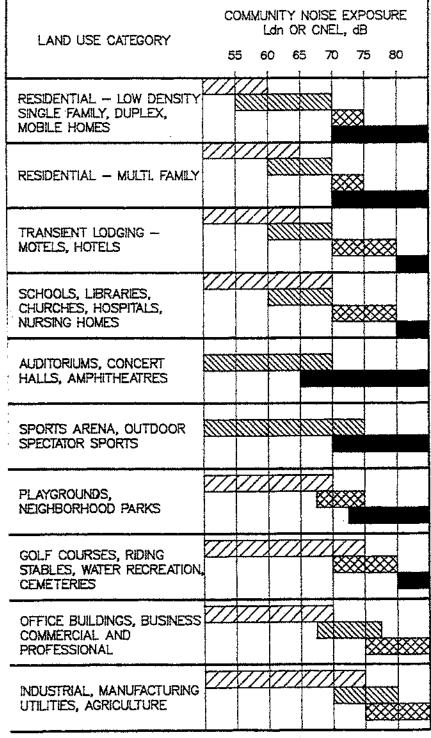
Category	Cumulative Number of minutes in any one-hour time period	Daytime 7 a.m. to 10 p.m.	Nighttime 10 p.m. to 7 a.m.	
1	30	55	50	
2	15	60	55	
3	5	65	60	
4	1	70	65	
5	0	75	70	

Each of the noise level standards specified in this table shall be reduced by five (5) dB(A) for pure tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises. These noise level standards should be applied at a residential or other noise-sensitive land use and not on the property of a noisegenerating land use.

SUMMARY

Existing and projected future traffic volumes, as well as noise sources from industry, trains, aircraft and recreational activities have the potential to increase noise to unacceptable levels in residential and other noise-sensitive areas of the plan area. Similarly, the expansion of residential uses near industry and airports may displace these activities if improper land use planning with regard to noise occurs. A series of policies and implementation measures have been prepared to address these issues.

LAND USE COMPATABLILTY FOR COMMUNITY NOISE ENVIRONMENTS



(Source: Office of Noise Control, California Department of Health)

INTERPRETATION



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

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

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

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

-

FIGURE VII-1

VII-9

NOISE ISSUES

The following issues have been identified regarding noise:

- Noise exposure from conflicting land uses and transportation corridors.
- Maintenance of acceptable noise levels.

GOALS AND POLICIES

The following presents the goals and policies for noise in the planning area. Implementing programs are contained in the following subsection.

At the end of each policy is listed in parenthesis a code beginning with the letter "I" followed by a number. This code refers to the pertinent implementing program.

GOALS

- 1. Ensure that residents of the Bakersfield Metropolitan Area are protected from excessive noise and existing moderate levels of noise are maintained.
- 2. Protect the citizens of the planning area from the harmful effects of exposure to excessive noise, and protect the economic base of the area by preventing the encroachment of incompatible land uses near known noise-producing roadways, industries, railroads, airports and other sources.

POLICIES

Goals will be achieved through the following policies which set more specific directions and guide actions.

- Identify noise-impact areas exposed to existing or projected noise levels exceeding 65 dB CNEL (exterior) or the performance standards described in Table VII-2. The noise exposure contour maps on file at the City of Bakersfield and County of Kern indicate areas where existing and projected noise exposures exceed 65 dB CNEL (exterior) for the major noise sources identified (I-1).
- 2. Prohibit new noise-sensitive land uses in noise-impacted areas unless effective mitigation measures are incorporated into project design to reduce noise to acceptable levels. (I-2, I-3, I-6, I-7).
- 3. Review discretionary industrial, commercial or other noise-generating land use projects for compatibility with nearby noise-sensitive land uses.

Additionally, the development of new noise-generating land uses which are not preempted from local noise regulation will be reviewed if resulting noise levels will exceed the performance standards contained within Table VII-2 in areas containing residential or other noise-sensitive land uses (I-3, I-6, I-7).

- Require noise level criteria applied to land uses other than residential or other n noise-sensitive uses to be consistent with the recommendations of the California Office of Noise Control (see Figure VII-1 (I-4)).
- 5. Encourage vegetation and landscaping along roadways and adjacent to other noise sources in order to increase absorption of noise (I-7).
- 6. Encourage interjurisdictional coordination and cooperation with regard to noise impact issues (I-8).
- 7. Establish threshold standards for the determination of the existence of project and cumulative noise impacts for mobile noise generating land uses that are significant, and will therefore require mitigation to achieve acceptable noise standards that do not exceed the standards contained in this element (I-9, 1-10)

IMPLEMENTATION

The following are programs to be carried out by the City of Bakersfield and County of Kern to implement the goals and policies of the Noise Element. This listing is not to limit the scope of implementation of this plan. State law requires that planning agencies recommend various methods of implementation of the general plan as part of their on-going duties.

- 1. Maintain noise contour maps which enable planning agencies, developers and the public to identify noise impacted areas on the land use map.
- Review discretionary development plans, programs and proposals, including those initiated by both the public and private sectors, to ascertain and ensure their conformance to the policy framework outlined in this element.
- 3. Require development of proposed residential or other noise sensitive land uses in noise-impacted area to comply with the noise standards of 65 dB CNEL or less in outdoor activity areas and 45 dB CNEL or less within interior living spaces and the performance standards within Table VII-2.
- 4. Require proposed commercial and industrial uses or operations to be designed or arranged so that they will not subject residential or other noise sensitive land uses to exterior noise levels in excess of 65 dB CNEL and interior noise levels in excess of 45 dB CNEL and so that

impacts on noise sensitive uses shall not exceed the performance standards in Table VII-2.

At time of any discretionary approval, such as a request for zone change or subdivision, the developer may be required to submit an acoustical report indicating the means by which the developer proposes to comply with the noise standards. The acoustical report shall:

- a) Be the responsibility of the applicant.
- Be prepared by a qualified acoustical consultant experienced in the fields of environmental noise assessment and architectural acoustics.
- Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions.
- d) Include estimated noise levels in terms of CNEL and the standards of Table VII-2 (if applicable) for existing and projected future (10-20 years hence) conditions, with a comparison made to the adopted policies of the Noise Element.
- e) Include recommendations for appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element.
- f) Include estimates of noise exposure after the prescribed mitigation measures have been implemented. If compliance with the adopted standards and policies of the Noise Element will not be achieved, a rationale for acceptance of the project must be provided.
- 5. Develop implementation procedures to ensure that requirements imposed pursuant to the findings of an acoustical analysis are conducted as part of the project permitting process.
- 6. Enforce the State Noise Insulation Standards (California Administrative Code, Title 24) and Chapter 35 of the Uniform Building Code concerning the construction of new multiple-occupancy dwellings such as hotels, apartments, and condominiums.
- 7. Investigate development and adoption of a community noise control ordinance to address noise complaints, and to provide local industry with performance standards for future development and equipment modifications. The noise exposure information developed during the community noise survey should be used as a guide in preparation of the ordinance. The ordinance should be consistent with the "Model Community Noise Control Ordinance" prepared by the California Office of

Noise Control in 1977 with modifications made to reflect local concerns and conditions. Periodically review and update the City of Bakersfield's noise ordinance under Chapter 9.22 of the Municipal Code.

- 8. Amend the city and county zoning ordinances as necessary to reflect the policies and programs of the Noise Element.
- 9. Cooperate and discuss with all appropriate government agencies the planning documents governing noise-impact issues for consistency and coordination.

10. STANDARDS FOR PROJECT NOISE IMPACTS FOR MOBILE SOURCES

A significant increase of existing ambient noise levels affecting existing noisesensitive land uses (receptors), and requiring the adoption of practical and feasible mitigation measures, is deemed to occur where a project will cause:

- An increase of the existing ambient noise level by 5 dB or more, where the existing ambient level is less than 60 dB CNEL
- An increase of the existing ambient noise level by 3 dB or more, where the existing ambient level is 60 to 65 dB CNEL;
- An increase of the existing ambient noise level by 1.5 dB or more, where the existing ambient level is greater than 65 dB CNEL.

STANDARDS FOR CUMULATIVE NOISE IMPACTS FOR MOBILE SOURCES

A project's contribution to noise increase would normally be considered cumulatively considerable and considered significant when ambient noise levels affect noise sensitive land uses (receptors) and when the following occurs.

 A project increases the ambient (cumulative without project) noise level by 1 dB or more;

and

- The cumulative with project noise levels cause the following:
 - An increase of the existing ambient noise level by 5 dB or more, where the existing ambient level is less than 60 dB CNEL;
 - An increase of the existing ambient noise level by 3 dB or more, where the existing ambient level is 60 to 65 DB CNEL;
 - An increase on the existing ambient noise level by 1.5 dB or more, where the existing ambient level is greater than 65 dB CNEL.

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APPENDIX 3.2:

CITY OF BAKERSFIELD MUNICIPAL CODE



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Chapter 9.22 NOISE

Sections:

I. General Provisions

- 9.22.010 **Purpose**.
- 9.22.020 Definitions.
- 9.22.030 Noise generally.
- 9.22.040 Exemptions.
- 9.22.050 Noise during construction.
- 9.22.060 Assessment of service fee.
- 9.22.070 Other remedies.

II. Amplified sound

- 9.22.080 Purpose.
- 9.22.090 Registration and permit required.
- 9.22.100 Registration statement amendment.
- 9.22.110 Issuance and display of permit.
- 9.22.120 Regulations for use.
- 9.22.130 Amplification from aircraft prohibited.
- 9.22.140 Amplified sound from vehicles.
- 9.22.150 Revocation.
- 9.22.160 Appeal.

I. General Provisions

9.22.010 Purpose.

A. The city council declares and finds that excessive, unnecessary and annoying noise levels are detrimental to the public health, welfare and safety and contrary to the public interest as follows:

1. By interfering with the comfortable enjoyment of life, the full use and enjoyment of property, and with the conduct and operation of business and industry;

3. By adversely affecting the value of real property.

B. It is the intent of this chapter to protect persons from excessive levels of noise and the following regulations are enacted for this purpose. (Ord. 3924 § 3, 1999)

9.22.020 Definitions.

The following words, phrases and terms as used in this chapter shall have the following meanings specified in this section:

"Amplified sound" means sound created by the use of sound-amplifying equipment.

"Central traffic district' means that portion of the city defined as such by Chapter 10.08 or any other ordinance hereafter adopted by the city.

"Construction" means any site preparation, assembly, erection, substantial repair, alteration, demolition or similar action, for or of private or public rights-of-way, structures, utilities or similar property and includes the transportation or delivery of any materials, tools, equipment or personnel to or from the site of any construction project for the loading or unloading or use of such materials, tools, equipment or personnel.

"Emergency work" means work made necessary to restore property to a safe condition following a public calamity, work required to protect persons or property from exposure to danger, or work by private or public utilities when restoring utility services.

"Person" means any individual, partnership, corporation, organization, or association of any nature whatsoever.

"Public place" means any area open to the public within the jurisdiction and control of the city of Bakersfield.

"Public right-of-way" means any street, avenue, boulevard, highway, sidewalk, alley, easement or the like dedicated to and accepted by the city of Bakersfield.

"Sound equipment" means and includes any loudspeaker, public address system, sound amplifier, radio or phonograph equipped with a loudspeaker or sound amplifier, or any machine or device for the amplification or reproduction of the human voice, music or any other sound, when operated or maintained in such a manner as to cause any such sound to be audible to a person of average hearing faculties or capacity in, on or over any public right-of-way, public building, park or other public place or any private premises or vehicle other than that in or upon which any such machine or device is being operated or maintained. It does not include the operation of any public address system, loudspeaker or other machine or device for the necessary amplification or reproduction of sound in connection with any program, entertainment, contest, public celebration, performance, show, exhibit or similar event, with a volume no louder than necessary for the convenient hearing of those within the building, enclosure or space in which such program, entertainment, contest, public celebration, performance, show, exhibition or similar event is staged or conducted; the operation of any radio receiving set, musical instrument, phonograph or other machine or device for the producing or reproducing of sound with a volume no louder than necessary for the convenient hearing of the person or persons who are within the room, building, vehicle, chamber, space or location in which such machine or device is operated and are voluntary listeners thereto; or warning device on authorized emergency vehicles or horns or other authorized emergency vehicles or horns or other authorized warning devices on any vehicle used for traffic safety purposes.

"Sound truck" means any vehicle having mounted thereon, or attached thereto, any sound equipment defined in the definition of "sound equipment" of this section. (Ord. 3924 § 3, 1999)

9.22.030 Noise generally.

A. It is unlawful for any person to willfully make or continue, or allow to be made or continued, any loud, unnecessary noise which disturbs the peace or quiet of any neighborhood or which causes discomfort or annoyance to persons residing within one thousand feet of the noise source.

B. The standards which may be considered in determining whether a violation of the provisions of this section exists may include, but are not limited to the following:

- 1. The level of the noise;
- 2. The level and intensity of any background noise;
- 3. The proximity of the noise to residential sleeping facilities;
- 4. The nature and zoning of the area within which the noise occurs;
- 5. The density of habitation of the area within which the noise occurs;
- 6. The time of the day or night the noise occurs;
- 7. The duration of the noise;
- 8. Whether the noise is recurrent, intermittent or constant.

C. Refrigerator trucks shall be permitted to operate in any commercial or manufacturing zone at all hours; provided, however, that such use does not emit noise or vibration detrimentally impacting neighboring residential properties and the occupants thereof between ten p.m. and seven a.m. (Ord. 3924 § 3, 1999)

9.22.040 Exemptions.

The following activities shall be exempted from the provisions of this chapter:

A. The emission of sound for the purpose of alerting persons to the existence of an emergency or the emission of sound in the performance of emergency works for as long a period of time as is necessary to constitute adequate alerting of persons to the existence of the emergency or the emergency work;

B. Warning devices for the protection of the public safety, as for example, police, fire, ambulance, commercial, residential and vehicle alarm devices, and train horns;

C. All mechanical devices, apparatus or equipment which are utilized for the protection or salvage of agricultural crops during periods of potential or actual frost damage or other adverse weather conditions. (Ord. 3924 § 3, 1999)

9.22.050 Noise during construction.

A. Except as provided herein or in subsection <u>B</u>, <u>C</u> or <u>D</u> of this section, it is unlawful for any person, firm or corporation to erect, demolish, alter or repair any building, or to grade or excavate land, streets or highways, other than between the hours of six a.m. and nine p.m. on weekdays, and between eight a.m. and nine p.m. on weekends; provided, however, that city crews and those of the city's contractors performing street work between nine p.m. and six a.m. are exempt herefrom if the city engineer has directed that work be performed between such hours to alleviate potential traffic congestion.

B. Notwithstanding any other provisions of this chapter, if the city manager determines that the public health and safety will not be impaired by the erection, demolition, alteration or repair of any building or the excavating and grading of land, streets or highways between the hours of nine p.m. and six a.m., and if he or she further determines that loss or inconvenience would result to any party in interest by virtue of the requirements provided in subsection A of this section, he or she may grant a permit for such work to be done between the hours of nine p.m. and six a.m., upon application being made at the time the permit for the work is awarded or during the progress of the work. Such permit may be granted for a period not to exceed three days, and may be extended by the city manager for a period not to exceed three days.

C. The provisions of this section shall not apply to any work of construction performed one thousand feet or more from the nearest residential dwelling.

D. The provisions of this section shall not apply to performance of emergency work as defined in this chapter. (Ord. 3924 § 3, 1999)

9.22.060 Assessment of service fee.

In addition to the penalty provided for in Chapter <u>1.40</u> of this code, a property owner shall be assessed a service fee pursuant to Chapter <u>3.70</u> if Bakersfield enforcement personnel respond more than one time in a thirty-day period for violation(s) of this chapter. (Ord. 3924 § 3, 1999)

9.22.070 Other remedies.

No provision of this chapter shall be construed to impair any common law or statutory cause of action, or legal remedy therefrom, of any person for injury or damages arising from any violation of this chapter. (Ord. 3924 § 3, 1999)

II. Amplified sound

9.22.080 Purpose.

The city council enacts this article for the sole purpose of securing and promoting the public health, comfort, safety and welfare of its citizenry. While recognizing that the use of sound-amplifying equipment is protected by the constitutional rights of freedom of speech and assembly, the council nevertheless feels obligated to reasonably regulate the use of sound-amplifying equipment in order to protect the constitutional rights of the citizens of this community to privacy and freedom from public nuisance of loud and unnecessary amplified sound. (Ord. 3924 § 3, 1999)

9.22.090 Registration and permit required.

No person, other than personnel of law enforcement or governmental agencies, shall operate, maintain, or cause, allow or permit to be operated or maintained any sound equipment in the city before filing a registration statement in writing with the city finance director or his or her designee and procuring a valid permit. The registration statement shall be made on forms to be furnished by the city, shall be submitted no less than two working days prior to the event, shall be filed in duplicate and shall contain the following information:

- A. Name, address and telephone number of:
 - 1. The registrant,
 - 2. The owner of the sound equipment,
 - 3. The person in direct charge of the sound equipment, and
 - 4. All persons who will use or operate the sound equipment;
- B. A general description of the sound equipment which is to be used;

C. The location where such sound equipment is to be used; if on a sound truck, the name and address of the registered owner and the license number of same, and a general statement of the area or areas of the city in which such sound truck is to be operated;

D. A general statement of the purpose for which such sound equipment is to be used;

- E. The proposed hours of operation of such sound equipment;
- F. The dates of proposed operation of such sound equipment;
- G. The maximum sound producing power of the sound equipment to be used. State the following:
 - 1. The wattage to be used,
 - 2. The volume in decibels of the sound which will be produced,
 - 3. The approximate maximum distance sound will be transmitted from the sound equipment;

H. The applicant shall pay a fee not to exceed the cost of processing any such application as set forth in Chapter 3.70. (Ord. 3924 § 3, 1999)

9.22.100 Registration statement amendment.

All persons operating or maintaining, or causing, allowing or permitting to be operated or maintained any sound equipment shall amend any registration statement filed pursuant to this section within two working days after any change in the information therein furnished. (Ord. 3924 § 3, 1999)

9.22.110 Issuance and display of permit.

A. If the information on the registration statement demonstrates that the proposed operation will be consistent with the regulations in this chapter, the city finance director or his or her designee shall return to each registrant, one copy of such registration statement duly certified as a correct copy of such permit.

B. Such permit shall be in the possession of any person operating the sound equipment at all times, and such permit shall be displayed promptly to any enforcement personnel upon request. (Ord. 3924 § 3, 1999)

9.22.120 Regulations for use.

The operation or maintenance of sound equipment shall be subject to the following regulations:

A. Only music and human speech are permitted.

B. Operations are permitted only between the hours of nine a.m. and six p.m., of each day; except, that sound equipment operating from a fixed location on private premises included in a commercial or industrial zone by the provisions of Title <u>17</u> may be operated between the hours of nine a.m. and ten p.m. of any day. The hours of operation and location for use, including within the central traffic district, may be modified by special permit issued by the city manager as otherwise permitted by provisions of this municipal code.

C. Sound equipment shall not be operated within one hundred yards of:

1. Any hospital;

2. Any school, except after school hours and on days when school is not in session and when such school is not being used for the purpose of a public meeting;

3. Any church, except when the same is not being used for religious services or classes;

4. The City Hall or Kern County courthouses, except after five p.m. on weekdays or on weekends or legal holidays;

5. Any mortuary or cemetery, when services are in progress.

D. No sound truck or sound equipment shall be operated or maintained within the central traffic district where the volume of sound is audible for a distance in excess of fifty feet from the sound truck or the exterior boundaries of the premises upon which such sound equipment is located, except that the city council may issue a permit for the installation and operation of a stationary sound equipment affixed to a building for the reproduction or amplification of music or bell tones to be reproduced at regular stated intervals and for a stated period each time, during the day between nine a.m. and ten p.m., upon compliance with all other provisions of this chapter and amendments thereto; and, provided further, that the volume of sound shall be controlled so that it will not be audible for a distance of more than six hundred feet from the point of location of such sound equipment; and, provided further, that such permit may be revoked at any time by the city council, upon satisfactory evidence that such use of such equipment is a nuisance to the surrounding neighborhood, and disturbs and interferes with the reasonable and comfortable enjoyment of life or property of persons residing or working in the neighborhood of such equipment.

E. Except as otherwise stated in this section or by special permit referred to in subsection \underline{B} of this section, the volume of sound shall be controlled so that it will not be audible for a distance in excess of one hundred fifty feet from the exterior boundaries of the premises upon which such sound equipment is located, and so that such volume is not unreasonably loud, raucous, jarring, disturbing or a nuisance.

F. When any loudspeaker, public address system, sound amplifier, radio or phonograph equipped with loudspeaker, jukebox or any other machine or device for the amplification or reproduction of the human voice, music or any other sound is so arranged, operated or equipped that it can be heard both inside and outside of the building or premises where the same is maintained, and such machine or device is operated at times other than those in which the operation of sound equipment is permitted under the provisions of this chapter, then such machine or device shall be equipped with a control switch located inside such building or premises, in such a manner that all speakers located outside such building or premises can be turned off at times when the operation of sound equipment is chapter. (Ord. 3924 § 3, 1999)

9.22.130 Amplification from aircraft prohibited.

No person shall operate, or cause, allow or permit to be operated any aircraft for any purpose in or over the city from which any sound equipment is being operated with volume sufficiently loud to be audible to a person of average hearing faculties or capacity in or on any private premises in such city. (Ord. 3924 § 3, 1999)

9.22.140 Amplified sound from vehicles.

Except as otherwise allowed under this chapter, no person shall use or operate or permit to be used or operated a radio, tape player, tape recorder, compact disc player, or any similar device in or attached to a vehicle whether moving, stopped or parked, occupied or unoccupied, which is audible to a person of normal hearing sensitivity more than fifty feet from such vehicle or, as to any vehicle not located on a public street, so audible more than fifty feet from the property line of the property on which such vehicle is located. This section shall not apply to acts proscribed by Vehicle Code Section <u>27007</u> after the effective date of such section, to any sound system being operated to request assistance or to warn of a hazardous situation, to any authorized emergency vehicle or vehicles operated by gas, electric, communications or water utilities. (Ord. 3924 § 3, 1999)

9.22.150 Revocation.

Any permit issued pursuant to this chapter may be immediately revoked by the city finance director or his or her designee whenever he or she finds:

A. That false or misleading statement(s) were made on the application; or

B. That the applicant has done any act related to the application involving dishonesty, fraud or deceit with the intent to substantially benefit himself or another, or substantially injure another; or

- C. That the permit holder has violated any provision of this chapter or any other applicable law; or
- D. That any of the terms or conditions of such permit have been violated. (Ord. 3924 § 3, 1999)

9.22.160 Appeal.

A. 1. The decision of the city finance director on any registration statement filed under this chapter may be appealed to the city manager or his or her designee.

2. The applicant must file the appeal with the office of the city manager within five days of the mailing or delivery of such decision.

3. The city manager or his or her designee shall hold a hearing within three days of the filing of such appeal at the office of the city manager, at which hearing the applicant may present any evidence, testimony and information relevant to the registration statement.

4. The city manager or his or her designee may, within twenty-four hours after the conclusion thereof, issue a decision either affirming the denial of the application or directing the city finance director to issue a permit as applied for or upon such conditions as are reasonable under all the circumstances, in accordance with this chapter. The city manager or his or her designee shall specify the grounds for denial or the imposition of conditions.

B. 1. Should any applicant be dissatisfied with the decision of the city manager not to grant a permit or for the revocation of a permit, then such applicant may, no later than ten days after notice of such hearing is deposited in the United States mail, addressed to the applicant or permittee at the address provided on the application, make written objection to the city council setting forth the grounds for dissatisfaction, whereupon the council shall hear such objections at a regular meeting no later than three weeks following the filing of the objection with the city clerk. The applicant shall be given written notice no less than three days prior to such hearing. The council may, upon such hearing, sustain, suspend or overrule the decision of the city manager, which decision shall be final and conclusive.

2. Pending the hearing before the council, the decision of the city manager shall remain in full force and effect and any reversal thereof by the city council shall not be retroactive but shall take effect as of the date of the council's decision. (Ord. 3924 § 3, 1999)

The Bakersfield Municipal Code is current through Ordinance 5060, passed August 4, 2021.

Disclaimer: The city clerk has the official version of the Bakersfield Municipal Code. Users should contact the city clerk for ordinances passed subsequent to the ordinance cited above.

Note: This site does not support Internet Explorer. To view this site, Code Publishing Company recommends using one of the following browsers: Google Chrome, Firefox, or Safari.

<u>City Website: www.bakersfieldcity.us</u> City Telephone: (661) 326-3000 <u>Code Publishing Company</u> This page intentionally left blank



APPENDIX 5.1:

STUDY AREA PHOTOS



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JN: 13923 Study Area Photos



L1-E 35, 17' 15.640000"119, 1' 43.410000"



L1-N 35, 17' 15.640000"119, 1' 43.550000"



L1-S 35, 17' 15.630000"119, 1' 43.460000"



L1-W 35, 17' 15.650000"119, 1' 43.440000"



L2-E 35, 17' 35.070000"119, 1' 30.750000"



L2-N 35, 17' 35.360000"119, 1' 30.610000"



35, 17' 35.180000"119, 1' 30.690000"



L2-W 35, 17' 34.990000"119, 1' 30.800000"



L3-E 35, 17' 17.430000"119, 1' 14.650000"



L3-N 35, 17' 17.380000"119, 1' 14.790000"



L3-S

35, 17' 17.430000"119, 1' 14.650000"



L3-W 35, 17' 17.430000"119, 1' 14.710000"

L5-E 35, 17' 5.370000"119, 1' 14.680000"

L5-N

35, 17' 5.400000"119, 1' 14.760000"

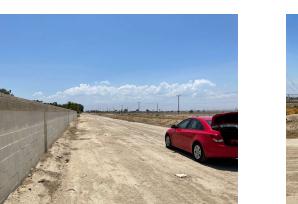


L4-S 35, 17' 13.530000"119, 1' 14.650000"



35, 17' 13.540000"119, 1' 14.620000"





L4-N 35, 17' 13.570000"119, 1' 14.680000"



L4-E

35, 17' 13.550000"119, 1' 14.620000"



JN: 13923 Study Area Photos

108

35, 16' 54.860000"119, 1' 14.710000"

L6-W 35, 16' 54.920000"119, 1' 14.710000"





L6-E 35, 16' 54.900000"119, 1' 14.680000"





L6-N 35, 16' 54.880000"119, 1' 14.710000"









L5-W 35, 17' 5.350000"119, 1' 14.680000"

JN: 13923 Study Area Photos

JN: 13923 Study Area Photos



L7-E 35, 16' 39.670000"119, 1' 25.720000"



L7-N 35, 16' 39.690000"119, 1' 25.750000"



L7-S 35, 16' 39.650000"119, 1' 25.720000"



L7-W 35, 16' 39.690000"119, 1' 25.750000"



L8-E 35, 16' 48.350000"119, 1' 40.140000"



L8-N 35, 16' 48.370000"119, 1' 40.200000"

L9-S 35, 17' 7.390000"119, 1' 41.870000"

1' 41.870000"

L9-W 35, 17' 7.370000"119, 1' 41.760000"



L9-E 35, 17' 7.390000"119, 1' 41.790000"



L9-N 35, 17' 7.400000"119, 1' 41.870000"



L8-W 35, 16' 48.380000"119, 1' 40.140000"



L8-S 35, 16' 48.380000"119, 1' 40.140000"



JN: 13923 Study Area Photos

APPENDIX 5.2:

NOISE LEVEL MEASUREMENT WORKSHEETS

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						24-Ho	ur Noise Le	evel Measu	urement Su	ummary						
		/, July 28, 202	21 ullfillment W	arabouco	Location:	L1 - Located	west of the Pi 2402 Basque	-	ear single-fan	nily	Meter:	Piccolo II				13923
Project:	Bakersheiu	nign-Cube F		arenouse		residence at									Analyst:	A. Khan
							Hourly L _{eq} d	IBA Readings	(unadjusted)							
85.0	0															
a 80.0																
(4 g p) 75.0 70.0																
	5															
A 55.0 A 55.0 A 50.0 A 50.0) — n —	- o ∞		59.2 60.4	59.5	59.3	58.7 58.7			<mark></mark>	57.5	2 <u>6</u> .	<mark></mark>	<u>.</u>	<mark>57.6</mark> 57.1	- 2
9 45.0 40.0	55.3	55.0 55.8	26.5	_ ŭ 0	N					r <u> r</u>	57.	<mark></mark>	<mark>57.</mark>	<mark></mark>	- 5 <mark>- 5</mark> -	56.2
35.0	5 — — —															
	0	1 2	3	4 5	6	7 8	9 1		12 1	3 14	15 10	5 17	18 19	20	21 22	23
								Hour Be	eginning							
Timeframe	Hour	L _{eq}	L max	L min	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L _{eq}	Adj.	Adj. L _{eq}
	0	55.3	60.7	50.6	60.5	60.3	59.6	58.8	56.1	54.2	51.6	51.1	50.7	55.3	10.0	65.3
	1 2	55.0 55.8	60.4 61.0	49.3 51.0	60.2 60.7	59.9 60.4	59.1 59.6	58.5 59.0	56.2 56.8	53.9 54.8	50.3 52.1	49.8 51.6	49.4 51.1	55.0 55.8	10.0 10.0	65.0 65.8
Night	3	56.5	61.5	50.7	61.3	61.0	60.2	59.7	57.7	55.6	52.1	51.3	50.8	56.5	10.0	66.5
Ũ	4	59.2	63.5	54.8	63.3	63.0	62.2	61.7	60.1	58.7	56.0	55.4	54.9	59.2	10.0	69.2
	5	60.4	64.1	56.9	63.9	63.7	63.0	62.5	61.2	60.0	57.9	57.4	57.0	60.4	10.0	70.4
	6	59.5	64.1	55.4	63.9	63.7	62.9	62.3	60.3	59.0	56.5	55.9	55.5	59.5	10.0	69.5
	7 8	59.3 59.3	63.9 63.4	55.1 55.1	63.6 63.2	63.3 63.0	62.7 62.5	62.2 62.0	60.1 60.2	58.6 58.7	56.1 56.2	55.7 55.7	55.2 55.2	59.3 59.3	0.0 0.0	59.3 59.3
	9	58.7	62.7	54.4	62.5	62.3	61.8	61.3	59.7	58.2	55.5	55.0	54.5	58.7	0.0	58.7
	10	58.8	64.2	54.3	64.0	63.6	62.7	61.8	59.5	57.9	55.4	54.9	54.5	58.8	0.0	58.8
	11	59.2	65.8	55.5	65.4	65.1	64.1	63.6	61.3	59.7	56.7	56.2	55.6	59.2	0.0	59.2
	12 13	58.8 58.2	62.7 62.6	55.0 54.5	62.5 62.4	62.3 62.0	61.6 61.3	61.2 60.7	59.6 59.1	58.3 57.6	56.0 55.4	55.6 55.0	55.2 54.6	58.8 58.2	0.0 0.0	58.8 58.2
Day	13	57.7	62.4	54.0	62.1	61.8	60.9	60.3	58.4	57.0	54.9	54.5	54.0	57.7	0.0	57.7
,	15	57.5	62.1	53.9	61.8	61.5	60.7	60.1	58.3	56.9	54.9	54.5	54.0	57.5	0.0	57.5
	16	57.8	62.5	53.8	62.2	61.9	61.0	60.4	58.6	57.0	54.8	54.3	53.9	57.8	0.0	57.8
	17	57.9	62.9	54.0	62.6	62.3	61.3	60.6	58.7	57.2	55.0	54.5	54.1	57.9	0.0	57.9
	18 19	57.2 57.9	61.6 64.1	53.0 53.4	61.3 63.8	61.1 63.4	60.3 62.0	59.9 60.9	58.2 58.4	56.5 56.8	54.1 54.4	53.6 53.9	53.1 53.5	57.2 57.9	0.0 5.0	57.2 62.9
	20	57.0	61.9	52.7	61.6	61.4	60.7	60.1	57.9	56.2	53.6	53.2	52.8	57.0	5.0	62.0
	21	57.6	64.0	53.4	63.7	63.2	61.5	60.3	58.1	56.5	54.3	53.9	53.5	57.6	5.0	62.6
Night	22	57.1	61.7	53.6	61.4	61.0	60.1	59.6	58.0	56.5	54.4	54.0	53.7	57.1	10.0	67.1
	23 Hour	56.2	61.0	52.0	60.8 L1%	60.6 L2%	59.8 L5%	59.2 L8%	57.2 L25%	55.4 L50%	53.0 L90%	52.5 L95%	52.1 L99%	56.2	10.0 L _{eg} (dBA)	66.2
	Min	L _{eq} 57.0	L _{max} 61.6	L _{min} 52.7	61.3	61.1	60.3	59.9	57.9	56.2	53.6	53.2	52.8		L _{eq} (UDA) Daytime	Nighttime
Day	Max	59.3	65.8	55.5	65.4	65.1	64.1	63.6	61.3	59.7	56.7	56.2	55.6	24-Hour	(7am-10pm)	(10pm-7am)
Energy	Average	58.3		rage:	62.8	62.5	61.7	61.0	59.1	57.5	55.2	54.7	54.3	50.0	FO O	
Night	Min	55.0	60.4	49.3	60.2	59.9	59.1	58.5	56.1	53.9	50.3	49.8	49.4	58.0	58.3	57.7
	Max Average	60.4 57.7	64.1 Ave	56.9 erage:	63.9 61.8	63.7 61.5	63.0 60.7	62.5 60.1	61.2 58.2	60.0 56.4	57.9 53.7	57.4 53.2	57.0 52.8			
Lifergy	Average -	57.7	Ave		01.0	01.5	00.7	00.1	30.2	50.4	- 33.7	33.2	52.0			



						24-	Hour Nois	e Level Me	asureme	nt Sur	mmary							
	Wednesday Bakersfield		21 Fullfillment W	/arehouse	Location		ed north of t at 6801 Gre	-	te near sing	gle-fam	iily	Met	<i>er:</i> Picc	olo II				1: 13923 1: A. Khan
Troject.	Bakersheld	ingii cube i		Varenouse		residence		. _{ea} dBA Read	inac lunadiu	ctad)							7 maryst	
							Hourry I	. _{eq} uba keuu	ngs (unuuju	steuj								
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(80.0 75.0 70.0 70.0																		
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		47.4	44	49.2 52.3	49.1	48.3	<mark>+ 4</mark> -	- <mark>4</mark> {	48.2	46.	46.1	46.8	46.2	<mark>46.</mark> 4	47.	48.0 46.5	46.0 46.0	45.7
35.0	0 ++	1 2	2 3	4 5	6	7 8	3 9	10 1	1 12	13	14	15	16	17	10	19 20	21 22	
	0	1 2	. 5	4 5	0	/ (5 9		r Beginning		14	15	10	17	18	19 20	21 22	23
Timeframe	Hour	L _{eq}	L max	L _{min}	L1%	L2%	L5%	L8%	L25	%	L50%	L90%		L95%	L99%	S L _{eq}	Adj.	Adj. L _{eq}
	0	43.3	48.0	41.6	47.3	46.6	45.2	44.6			42.9	42.1		41.9	41.7		10.0	53.3
	1 2	47.4 49.3	51.3 54.1	43.8 44.8	51.1 53.8	50.8 53.5	50.3 52.7	49.8			46.9 48.6	44.6 45.8		44.2 45.4	43.9		10.0 10.0	57.4 59.3
Night	3	44.5	48.6	42.3	48.2	47.9	47.2	46.6			43.9	42.8		42.6	42.4		10.0	54.5
Ũ	4	49.2	54.1	45.9	53.8	53.4	52.5	51.8		.9	48.5	46.6		46.3	46.0		10.0	59.2
	5	52.3	55.1	49.9	54.8	54.7	54.3	54.0			52.1	50.7		50.3	50.0		10.0	62.3
	6	49.1 48.3	51.8 57.8	47.3	51.6 57.6	51.3 57.2	50.8 56.3	50.5 55.6			48.8 48.2	47.8		47.6 46.4	47.4		10.0 0.0	59.1 48.3
	8	48.3	57.8	40.1	57.6	57.2	53.2				48.2 44.6	46.9 42.7		40.4	40.2		0.0	48.3 44.4
	9	43.8	50.1	41.4	49.6	49.1	47.9	47.2			44.2	42.3		41.7	41.5		0.0	43.8
	10	44.7	62.4	46.6	61.8	61.2	60.2	59.6			53.3	48.8		47.6	46.8		0.0	44.7
	11	43.2	47.7	41.3	47.3	46.8	45.7	45.1			42.7	41.8		41.6	41.4		0.0	43.2
	12 13	48.2 46.1	54.6 59.5	45.1 44.3	53.8 58.9	53.1 58.3	51.6 55.8	50.9 53.3			47.3 46.0	45.9 44.8		45.6 44.6	45.2 44.4		0.0 0.0	48.2 46.1
Day	14	46.1	52.0	43.4	51.6	51.2	49.7	48.8			44.8	43.9		43.7	43.5		0.0	46.1
	15	46.8	53.0	43.3	52.5	51.9	50.7	50.0		.6	45.2	43.8		43.6	43.4	46.8	0.0	46.8
	16	46.2	52.4	43.5	52.1	51.7	50.1	48.8			45.0	43.9		43.8	43.6		0.0	46.2
	17 18	46.4 47.1	51.0 51.8	44.4 44.4	50.8 51.4	50.3 50.8	49.2 49.7	48.5 49.3			45.8 46.5	44.9 45.0		44.7 44.8	44.5 44.5		0.0 0.0	46.4 47.1
	18	47.1	53.0	44.4	52.6	52.3	49.7 51.4	49.3 50.7			40.5	45.7		44.8	44.3		5.0	53.0
	20	46.5	50.1	44.5	49.7	49.3	48.5	48.1	47.	.0	46.1	45.1		44.9	44.7	46.5	5.0	51.5
	21	46.1	50.5	44.3	50.0	49.5	48.5				45.6	44.8		44.6	44.4		5.0	51.1
Night	22 23	46.0 45.7	50.3 51.2	43.9 42.6	49.9 50.7	49.6 50.3	48.8 49.3	48.3			45.4 44.8	44.4		44.2 43.0	44.0		10.0 10.0	56.0 55.7
Timeframe	Hour	L _{eq}	L max	L _{min}	L1%	L2%	L5%	-0 L8%			L50%	L90%		43.0 L95%	L99%		L _{eq} (dBA)	
Day	Min	43.2	47.7	41.3	47.3	46.8	45.7				42.7	41.8		41.6	41.4	24-HOUR	Daytime	Nighttime
	Max	48.3	62.4	46.6	61.8	61.2	60.2				53.3	48.8		47.6	46.8		(7am-10pm) (10pm-7am
	Average Min	46.4 43.3	48.0	erage: 41.6	52.9 47.3	52.4 46.6	51.3 45.2	50.4 44.6			46.2 42.9	44.7		44.4 41.9	44.1		46.4	48.3
Night	Max	43.3 52.3	55.1	41.0	54.8	54.7	54.3	44.0 54.0			42.9 52.1	50.7		50.3	50.0		40.4	40.3
Energy	Average	48.3		erage:	51.3	50.9	50.1				46.9	45.3		45.1	44.8			



						24-Ho	ur Noise Le	evel Meas	urement Si	ummary						
		/, July 28, 20		arabauca	Location:	L3 - Located residence at		•	ar single-fam	nily	Meter:	Piccolo II				13923
Project:	Bakersheid	nign-Cube F	ullfillment W	arenouse		residence at			(Anuiyst:	A. Khan
							HOURIY L _{eq} (aBA Reddings	(unadjusted)							
85.0 - 80.0) ++															
4 8 75.0	2															
ی-65.0 ای-60.0	2															
<u>≻</u> 55.0		62.1 61.6		62.2 63.2	63.0	62.7 61.5		61.0			60.2	60.1	60.6	<mark>61.2</mark>	61.1 60.9	6.09
PP 45.0 40.0									<u> </u>							
35.0) ++										45 4		10 10		24 22	
	0	1 2	3	4 5	6	7 8	9 1		12 1 eginning	3 14	15 1	6 17	18 19	20	21 22	23
Timeframe	Hour	L _{eq}	L _{max}	L _{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L _{eq}	Adj.	Adj. L _{eq}
	0	61.1	66.0	60.1	65.5	64.8	63.1	62.2	61.1	60.6	60.3	60.2	60.1	61.1	10.0	71.1
	1	62.1	67.1	60.7	67.0	66.6	65.4	64.2	61.9	61.3	60.9	60.9	60.8	62.1	10.0	72.1
Night	2	61.6 61.0	63.1 62.0	60.9 60.4	62.9 61.9	62.8 61.8	62.6 61.7	62.4 61.5	61.8 61.1	61.4 60.9	61.1 60.6	61.0 60.5	60.9 60.4	61.6 61.0	10.0 10.0	71.6 71.0
Might	4	62.2	64.2	61.4	64.1	63.9	63.6	63.3	62.4	62.0	61.6	61.5	61.4	62.2	10.0	72.2
	5	63.2	64.9	62.3	64.8	64.7	64.4	64.1	63.4	62.9	62.5	62.4	62.4	63.2	10.0	73.2
	6	63.0	69.0	61.8	68.4	67.6	65.7	64.5	62.8	62.4	62.0	62.0	61.9	63.0	10.0	73.0
	7	62.7	69.1	60.8	69.0	68.5	66.8	65.8	62.3	61.5	61.0	60.9	60.8	62.7	0.0	62.7
	8	61.5	65.5	60.3	65.3	64.9	63.7	63.1	61.5	61.1	60.5	60.4	60.3	61.5	0.0	61.5
	9 10	60.0 59.4	63.7 61.7	58.7 58.3	63.4 61.5	63.2 61.3	62.3 60.8	61.8 60.5	60.1 59.7	59.6 59.2	59.0 58.6	58.9 58.5	58.8 58.3	60.0 59.4	0.0 0.0	60.0 59.4
	10	61.0	67.7	58.4	67.0	66.4	65.0	63.6	61.1	60.0	58.8	58.7	58.5	61.0	0.0	61.0
	12	63.0	68.1	58.4	67.8	67.3	66.4	65.7	64.0	62.5	59.4	58.9	58.5	63.0	0.0	63.0
	13	59.3	62.6	58.0	62.3	62.1	61.2	60.7	59.5	58.9	58.3	58.2	58.0	59.3	0.0	59.3
Day	14	59.5	63.1	57.9	62.8	62.4	61.7	61.1	59.8	59.1	58.2	58.1	57.9	59.5	0.0	59.5
	15	60.2	65.5	58.1	65.0	64.5	63.2	62.3	60.4	59.4	58.5	58.4	58.2	60.2	0.0	60.2
	16 17	60.2 60.1	66.1 64.2	58.1 58.5	65.8 63.9	65.3 63.6	64.2 62.7	63.3 61.9	59.9 60.2	59.2 59.5	58.5 58.8	58.3 58.7	58.2 58.6	60.2 60.1	0.0 0.0	60.2 60.1
	18	60.6	65.4	58.8	65.1	64.8	63.8	63.1	60.7	59.8	59.1	59.0	58.9	60.6	0.0	60.6
	19	61.3	67.3	59.3	66.8	66.2	65.1	64.0	61.1	60.3	59.6	59.5	59.3	61.3	5.0	66.3
	20	61.2	68.0	59.4	67.3	66.5	64.3	62.9	61.1	60.4	59.7	59.6	59.5	61.2	5.0	66.2
	21	61.1	64.9	59.8	64.5	64.2	63.2	62.6	61.3	60.7	60.1	60.0	59.9	61.1	5.0	66.1
Night	22 23	60.9 60.9	64.0 63.5	59.8 59.9	63.7 63.3	63.4 63.1	62.7 62.6	62.3 62.1	61.1 61.1	60.6 60.6	60.1 60.2	60.0 60.1	59.9 60.0	60.9 60.9	10.0 10.0	70.9 70.9
Timeframe	Hour	L _{eq}	L max	L _{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%		L _{eq} (dBA)	, 0.0
Day	Min	59.3	61.7	57.9	61.5	61.3	60.8	60.5	59.5	58.9	58.2	58.1	57.9	24-Hour	Daytime	Nighttime
	Max	63.0	69.1	60.8	69.0	68.5	66.8	65.8	64.0	62.5	61.0	60.9	60.8		(7am-10pm)	(10pm-7am
	Average Min	60.9 60.9	62.0	rage: 59.8	65.2 61.9	64.8 61.8	63.6 61.7	62.8 61.5	60.9 61.1	60.1 60.6	59.2 60.1	59.1 60.0	58.9 59.9	61.3	60.9	61.9
Night	Max	63.2	62.0	62.3	68.4	67.6	65.7	64.5	63.4	62.9	62.5	62.4	62.4	01.5	00.3	01.9
Energy	Average	61.9		erage:	64.6	64.3	63.5	63.0	61.8	61.4	61.0	61.0	60.9			



						24-Ho	our Noise Le	evel Meas	urement Si	ummary						
	-	/, July 28, 202			Location:	L4 - Located		•	ear single-fam	nily	Meter:	Piccolo II				13923
Project:	Bakersfield	High-Cube F	ullfillment W	arenouse		residence at									Analyst:	A. Khan
							Hourly L _{eq} (dBA Readings	(unadjusted)							
85.0	0						1									
a 80.0																
(80.0 75.0 70.0 65.0 65.0	õ –															
ی.دو ہے 60.0 ت ے													8	<u> </u>	<u>и</u>	
1 55.0 1 55.0 1 50.0 0 45.0	יי 🗖 0	58.4	57.2	51.2 63.9	62.7	60.2 58.4		59.1		<mark>57.6</mark>	58.0 601	59.9	60.9	<mark></mark>	61.5 59.3	58.7
9 45.0 40.0	56.	5.8	5_			<u>й</u>	3	2	- ŭ - ŭ	57.					- <u> </u>	X
35.0	õ															
	0	1 2	3	4 5	6	7 8	91		. 12 1	3 14	15 1	6 17	18 19	20	21 22	23
									eginning							
Timeframe	Hour	L _{eq} 56.5	L _{max} 65.9	L _{min} 52.6	L1% 65.3	L2% 64.5	L5% 63.3	L8%	L25%	L50% 54.9	L90%	L95% 53.0	L99% 52.7	L _{eq} 56.5	Adj. 10.0	Adj. L _{eq}
	0	58.4	66.8	52.6	66.4	65.8	64.4	63.5	57.3	54.9	53.3	53.0	53.6	58.4	10.0	66.5 68.4
	2	58.1	64.8	54.0	64.3	63.6	62.5	61.6	58.7	56.6	54.8	54.5	54.1	58.1	10.0	68.1
Night	3	57.2	61.5	53.8	61.3	61.0	60.3	59.9	57.9	56.5	54.6	54.3	54.0	57.2	10.0	67.2
	4	61.2	67.8	57.6	67.6	67.4	66.5	65.7	62.2	60.2	58.3	58.0	57.7	61.2	10.0	71.2
	5	63.9 62.7	67.2 67.2	61.4 60.0	67.1 67.0	66.9 66.7	66.4 66.0	65.9 65.4	64.4 63.1	63.4 61.9	62.0 60.6	61.8 60.4	61.5 60.1	63.9 62.7	10.0 10.0	73.9 72.7
	7	60.2	68.0	52.9	67.8	67.4	66.5	65.6	60.3	56.8	53.7	53.3	53.0	60.2	0.0	60.2
	8	58.4	65.2	51.0	65.0	64.6	63.7	62.9	59.2	56.4	52.0	51.5	51.1	58.4	0.0	58.4
	9	58.4	65.6	51.6	65.2	64.8	63.5	62.4	59.0	56.6	52.6	52.1	51.7	58.4	0.0	58.4
	10	57.7	63.9	51.5	63.7	63.5	62.6	61.8	58.5	55.8	52.4	52.0	51.7	57.7	0.0	57.7
	11 12	59.1 58.2	69.5 66.5	51.3 52.9	68.8 66.0	68.2 65.4	66.5 64.2	64.0 63.1	59.0 59.2	56.2 56.9	52.3 53.9	51.8 53.4	51.4 53.0	59.1 58.2	0.0 0.0	59.1 58.2
	12	58.8	65.6	53.4	65.4	65.0	63.9	62.6	59.3	57.1	54.2	53.9	53.5	58.8	0.0	58.8
Day	14	57.6	64.4	52.1	64.0	63.6	62.5	61.6	58.2	56.1	53.0	52.5	52.2	57.6	0.0	57.6
	15	58.0	64.7	51.9	64.4	64.0	62.9	62.1	58.9	56.4	52.9	52.3	51.9	58.0	0.0	58.0
	16	60.1	68.7	52.2	68.5	68.1	66.7	65.8	59.6	56.6	53.2	52.7	52.3	60.1	0.0	60.1
	17 18	59.9 60.9	67.7 68.6	53.3 54.4	67.5 68.3	67.0 67.8	65.5 66.5	64.1 65.7	60.2 60.8	57.5 58.7	54.2 55.4	53.8 54.9	53.4 54.5	59.9 60.9	0.0 0.0	59.9 60.9
	19	62.2	68.7	56.9	68.4	68.0	67.1	66.2	62.7	60.5	58.0	57.5	57.1	62.2	5.0	67.2
	20	61.5	67.0	56.7	66.6	66.3	65.5	64.8	62.4	60.3	57.7	57.3	56.8	61.5	5.0	66.5
	21	61.5	67.1	56.8	66.9	66.6	65.8	65.2	62.3	60.3	57.6	57.3	56.9	61.5	5.0	66.5
Night	22 23	59.3 58.7	65.4 64.5	55.1 54.6	65.1 64.2	64.7 63.9	63.8 62.8	62.9 62.1	59.9 59.1	57.8 57.5	55.9 55.5	55.6 55.1	55.2 54.7	59.3 58.7	10.0 10.0	69.3 68.7
Timeframe	Hour	L eq	L max	54.6 L _{min}	64.2 L1%	L2%	62.8 L5%	L8%	L25%	L50%	L90%	L95%	L99%	50.7	L _{eq} (dBA)	00.7
	Min	57.6	63.9	51.0	63.7	63.5	62.5	61.6	58.2	55.8	52.0	51.5	51.1	24-Hour	Daytime	Nighttime
Day	Max	62.2	69.5	56.9	68.8	68.2	67.1	66.2	62.7	60.5	58.0	57.5	57.1	24=n0un	(7am-10pm)	(10pm-7am)
Energy	Average	59.8		erage:	66.4	66.0	64.9	63.8	60.0	57.5	54.2	53.8	53.4	50 0		60.2
Night	Min Max	56.5 63.9	61.5 67.8	52.6 61.4	61.3 67.6	61.0 67.4	60.3 66.5	59.9 65.9	57.3 64.4	54.9 63.4	53.3 62.0	53.0 61.8	52.7 61.5	59.9	59.8	60.2
Energy	Average	60.2	-	erage:	65.4	65.0	64.0	63.3	60.2	58.4	56.6	56.3	55.9			



						24-Ho	our Noise Le	vel Meas	urement Su	ummary						
		y, July 28, 20		(Location	: L5 - Located		-	ar single-fam	iily	Meter:	Piccolo II				13923
Project:	Bakersfield	High-Cube F	ullfillment W	arehouse		residence at	7719 Snowbi								Analyst:	A. Khan
							Hourly L _{eq} d	BA Readings	(unadjusted)							
85.0)															
a 80.0																
(Vap) 75.0 70.0 65.0 10.0 10.0	ž															
، 65.0 60.0 ت	5													+ +		
> 55.0		i ru	• • •	60.0 62.5	61.3	61.3 60.4	60.4		60.3	59.8	59.7 61.6	60.7	<mark>61.4</mark> 62.1	<mark>61.9</mark>	61.5 61.5 59.6	59.0
A Jun 55.0 45.0 45.0 40.0	ž – š –	56.5	26.0	_ o		9 9	9 0	9 - 9 -	9 9	_ <u>ن</u> _		, 6	- - -	+	<u>م</u>	<u></u>
35.0																
	0	1 2	3	4 5	6	7 8	9 1		12 1	3 14	15 16	5 17	18 19	20	21 22	23
									eginning							
imeframe	Hour	L _{eq}	L _{max}	L _{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L _{eq}	Adj.	Adj. L
	0	56.4	69.0	52.4	68.5	67.8	64.8	62.7	56.4	54.4	52.9	52.7	52.5	56.4	10.0	66.4
	1 2	56.8 56.5	64.2 61.6	52.9 53.0	63.7 61.4	63.3 61.1	62.3 60.5	61.3 59.7	57.8 57.0	55.7 55.4	53.7 53.7	53.4 53.4	53.0 53.1	56.8 56.5	10.0 10.0	66.8 66.9
Night	3	56.0	62.5	52.3	62.2	61.9	61.1	60.0	56.0	54.3	53.0	52.7	52.4	56.0	10.0	66.
0	4	60.0	67.2	54.5	67.0	66.8	65.9	64.8	60.1	57.3	55.2	54.9	54.6	60.0	10.0	70.
	5	62.5	66.8	59.5	66.6	66.5	65.9	65.3	63.1	61.8	60.1	59.9	59.6	62.5	10.0	72.5
	6	61.3	68.1	57.4	67.8	67.4	66.0	64.7	61.6	59.8	58.0	57.7	57.5	61.3	10.0	71.3
	7	61.3	69.8	52.7	69.6	69.3	67.7	66.3	61.6	58.0	53.4	53.1	52.8	61.3	0.0	61.3 60.4
	8 9	60.4 60.4	68.2 67.6	51.8 52.1	67.8 67.1	67.5 66.7	65.9 65.9	64.7 65.0	61.4 61.6	57.9 57.8	52.7 52.9	52.2 52.5	51.9 52.2	60.4 60.4	0.0 0.0	60. 60.
	10	60.0	66.9	52.2	66.5	66.0	65.0	64.1	61.2	58.0	53.3	52.8	52.3	60.0	0.0	60.
	11	60.3	65.8	53.3	65.5	65.3	64.7	64.1	61.6	59.0	54.6	54.0	53.5	60.3	0.0	60.
	12	60.3	67.8	52.9	67.2	66.7	65.1	63.9	61.5	58.7	54.1	53.5	53.0	60.3	0.0	60.
Dav	13	60.3	66.5	53.2	66.2	65.8	64.9	64.1	61.4	58.8	54.5	53.8	53.3	60.3	0.0	60.3
Day	14 15	59.8 59.7	67.8 65.3	52.1 51.8	67.0 65.1	66.2 64.9	64.8 64.3	63.7 63.6	60.8 61.2	58.0 58.3	53.2 52.9	52.7 52.3	52.2 51.9	59.8 59.7	0.0 0.0	59.8 59.3
	16	61.6	71.9	52.3	71.3	70.3	68.0	65.9	61.5	58.4	53.3	52.9	52.4	61.6	0.0	61.
	17	60.7	68.0	52.7	67.5	67.0	65.6	64.6	61.9	59.0	54.0	53.3	52.9	60.7	0.0	60.
	18	61.4	67.1	54.1	66.9	66.7	65.9	65.1	62.5	60.2	55.7	55.0	54.3	61.4	0.0	61.
	19	62.1	67.7	56.0	67.4	67.1	66.4	65.6	63.2	60.8	57.1	56.6	56.1	62.1	5.0	67.
	20 21	61.9 61.5	67.4 67.0	55.8 56.1	67.1 66.8	66.9 66.4	66.3 65.8	65.6 65.2	62.9 62.7	60.8 60.2	56.7 56.8	56.2 56.5	55.9 56.2	61.9 61.5	5.0 5.0	66. 66.
	22	59.6	66.1	55.0	65.8	65.5	64.4	63.5	60.4	57.6	55.6	55.4	55.1	59.6	10.0	69.6
Night	23	59.0	64.7	54.7	64.4	64.2	63.6	62.9	59.6	57.4	55.3	55.1	54.8	59.0	10.0	69.0
meframe	Hour	L _{eq}	L _{max}	L _{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%		L _{eq} (dBA)	
Day	Min	59.7	65.3	51.8	65.1	64.9 70.2	64.3	63.6	60.8	57.8	52.7	52.2	51.9	24-Hour	Daytime	Nightt
	Max Average	62.1 60.8	71.9 Ave	56.1 erage:	71.3 67.3	70.3 66.9	68.0 65.7	66.3 64.8	63.2 61.8	60.8 58.9	57.1 54.4	56.6 53.8	56.2 53.4		(7am-10pm)	(10pm-)
	Min	56.0	61.6	52.3	61.4	61.1	60.5	59.7	56.0	54.3	52.9	52.7	52.4	60.3	60.8	59.
Night	Max	62.5	69.0	59.5	68.5	67.8	66.0	65.3	63.1	61.8	60.1	59.9	59.6			
Energy	Average	59.3	Ave	erage:	65.3	64.9	63.8	62.8	59.1	57.1	55.3	55.0	54.7			



						24-Ho	our Noise Le	evel Meas	urement Si	ummary						
	-	/, July 28, 202 High-Cube Fi		arabousa	Location:	L6 - Located	east of the Pi 8017 Snowbi	•	ear single-fam	nily	Meter:	Piccolo II				13923 A. Khan
Projeci.	Dakersneiu	nigii-cube ri		arenouse		Tesidence at			(unadjusted)						Anuiyst.	A. KIIdII
							Houriy L _{eq} (іБА Redaings	(undajustea)							
85.0 - 80.0																
(80.0 75.0 70.0																
b 70.0 65.0 - 60.0	0	_			~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	m		<u>ь</u>						<u>-</u>		
60.0 ت ۔ 55.0 <u>ح</u>	64.1	63.9 64.1	63.9	65.1 67.:	66.3	66.2	65.2	66.5	64.9	64.2	64.6	64.6	<mark>65.8</mark> 67.1	<mark>67.</mark>	66.6 64.6	64.8
∧ 55.0 Jin 50.0 45.0		99	9							° °						
± 40.0 35.0	0 ++	-		-			+-						-	+-		+
55.0	0	1 2	3	4 5	6	7 8	9 1	.0 11	12 1	3 14	15 1	5 17	18 19	20	21 22	23
	Ū		5	. 5	Ū	, 0	<u> </u>		eginning	5 1	10 1	. 1,	10 10	20		20
Timeframe	Hour	L _{eq}	L _{max}	L _{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L _{eq}	Adj.	Adj. L _{eq}
	0	64.1	67.8	63.0	67.6	67.3	66.0	65.4	64.3	63.8	63.3	63.2	63.0	64.1	10.0	74.1
	1	63.9	66.4	62.9	66.2	66.1	65.7	65.2	64.1	63.6	63.1	63.1	62.9	63.9	10.0	73.9
Night	2	64.1 63.9	67.8 66.0	63.0 63.0	67.5	67.2 65.7	66.2 65.4	65.4 65.0	64.2 64.1	63.8 63.7	63.2 63.2	63.1 63.1	63.0 63.0	64.1 63.9	10.0 10.0	74.1 73.9
Night	4	65.1	69.3	63.6	65.9 68.9	68.4	67.5	66.8	65.3	64.6	63.2	63.8	63.0	65.1	10.0	73.9
	5	67.1	70.7	65.7	70.4	70.0	69.0	68.6	67.4	66.7	66.0	65.9	65.7	67.1	10.0	77.1
	6	66.3	71.4	64.6	70.9	70.4	69.1	68.3	66.3	65.5	64.9	64.8	64.6	66.3	10.0	76.3
	7	67.3	75.0	63.2	74.4	73.8	71.9	70.8	67.5	66.1	63.6	63.4	63.3	67.3	0.0	67.3
	8	66.2	73.7	63.4	73.2	72.7	71.1	69.4	65.6	64.6	63.7	63.6	63.5	66.2	0.0	66.2
	9 10	65.2 64.8	70.5 69.3	63.2 62.8	70.0 68.8	69.6 68.3	68.4 67.4	67.3 66.9	65.4 65.1	64.5 64.2	63.5 63.1	63.4 63.0	63.2 62.8	65.2 64.8	0.0 0.0	65.2 64.8
	10	66.5	77.3	62.3	76.7	75.7	72.4	69.3	64.9	63.7	62.7	62.6	62.4	66.5	0.0	66.5
	12	64.9	70.8	62.0	70.1	69.4	68.2	67.4	65.4	64.0	62.5	62.3	62.1	64.9	0.0	64.9
	13	63.8	68.7	61.7	68.3	67.9	66.9	66.0	64.0	63.1	62.1	61.9	61.7	63.8	0.0	63.8
Day	14	64.2	69.6	62.2	69.1	68.5	67.2	66.4	64.3	63.5	62.6	62.5	62.3	64.2	0.0	64.2
	15 16	64.6	71.0	62.1	70.4	69.7	68.3 68.5	67.3 67.5	64.6	63.6	62.5	62.3 62.5	62.1 62.3	64.6 64.8	0.0	64.6
	16	64.8 64.6	71.2 70.2	62.2 62.3	70.6 69.5	69.9 68.9	68.5	66.8	64.9 64.8	63.8 64.0	62.7 62.8	62.5	62.3	64.8 64.6	0.0 0.0	64.8 64.6
	18	65.8	73.6	62.5	72.7	71.9	70.4	69.1	65.5	64.3	63.0	62.8	62.6	65.8	0.0	65.8
	19	67.1	75.7	63.1	74.7	73.9	72.0	70.6	67.2	65.2	63.6	63.3	63.2	67.1	5.0	72.1
	20	67.5	76.3	63.8	75.4	74.6	72.3	70.8	67.3	65.5	64.2	64.0	63.8	67.5	5.0	72.5
	21	66.6	73.6	63.5	73.0	72.4 68.3	70.9	69.8	66.6	65.2	63.9	63.8	63.6	66.6	5.0	71.6
Night	22 23	64.6 64.8	69.1 67.6	62.8 63.5	68.8 67.4	68.3	67.2 66.6	66.4 66.2	64.9 65.0	64.1 64.4	63.2 63.8	63.0 63.7	62.9 63.6	64.6 64.8	10.0 10.0	74.6 74.8
Timeframe	Hour	L _{eq}	L _{max}	L _{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	00	L _{eq} (dBA)	
Day	Min	63.8	68.7	61.7	68.3	67.9	66.9	66.0	64.0	63.1	62.1	61.9	61.7	24-Hour	Daytime	Nighttime
	Max	67.5	77.3	63.8	76.7	75.7	72.4	70.8	67.5	66.1	64.2	64.0	63.8		(7am-10pm)	(10pm-7am
Energy	Average Min	65.8 63.9	66.0	erage: 62.8	71.8 65.9	71.1 65.7	69.6 65.4	68.4 65.0	65.6 64.1	64.4 63.6	63.1 63.1	62.9 63.0	62.8 62.9	65.5	65.8	65.0
Night	Max	67.1	71.4	65.7	70.9	70.4	69.1	68.6	67.4	66.7	66.0	65.9	65.7	05.5	03.0	05.0
Energy	Average	65.0	-	erage:	68.2	67.9	67.0	66.4	65.1	64.5	63.8	63.7	63.6			



Date:	Wednesday	/, July 28, 20	21		Location	24-Ho : L7 - Located	our Noise Lo			-	Meter	: Piccolo II			INI-	13923
		-	ullfillment W	'arehouse	Locution		at 8601 South	-			Wieter					A. Khan
							Hourly L _{eq} (dBA Readings	(unadjusted)							
85.0	D															
_ 80.0	n ————————————————————————————————————															
5 70.0	2															
(dBA) b 12:00 (dBA) b 12:000 (dBA) b 12:000 (dBA) b 12:000 (dBA) b 12:000 (dBA) b 12:0000 (dBA	2															+
∧ 55.0 ∧ 50.0 0 45.0	23.2	2.3	52.9	55.8 59.1	58.0	<mark>53.3</mark> 52.0		× 0		<mark></mark>	<u>.</u>	52.7	<mark>3.3</mark> 55.8	<mark></mark>	56.0	56.1
9 45.0 40.0 35.0		52.	· ۲			2 <mark>5, 53</mark>	22	52. 52.	- <mark>17</mark> 1	23 23	22	2 <mark>.2.</mark>	2 <mark>.5</mark>			
	0	1 2	3	4 5	6	7 8	9 1	.0 11		.3 14	15 1	.6 17	18 19	20	21 22	23
				_					eginning					-		
ïmeframe	Hour 0	L _{eq} 53.2	L _{max} 56.8	L _{min} 50.0	L1% 56.6	L2% 56.3	L5% 55.7	L8%	L25% 54.0	L50% 52.7	L90% 50.8	L95% 50.4	L99%	L _{eq} 53.2	Adj. 10.0	Adj. L
	1	52.3	55.5	48.7	55.3	55.1	54.7	54.5	53.2	51.9	49.7	49.3	48.8	52.3	10.0	62.3
	2	55.3	58.7	51.6	58.5	58.2	57.7	57.4	56.2	54.9	52.7	52.2	51.8	55.3	10.0	65.
Night	3	52.9	55.9	50.2	55.7	55.5	54.9	54.6	53.7	52.6	50.9	50.6	50.3	52.9	10.0	62.
	4 5	55.8 59.1	59.5 61.4	53.7 57.0	59.3 61.2	58.9 61.1	57.8 60.6	57.4 60.4	56.3 59.8	55.5 59.0	54.2 57.7	54.0 57.4	53.7 57.1	55.8 59.1	10.0 10.0	65. 69.
	6	58.0	60.3	56.3	60.1	59.9	59.6	59.3	58.5	57.9	56.9	56.7	56.4	58.0	10.0	68.0
	7	53.3	56.5	50.7	56.2	56.1	55.6	55.2	53.9	53.0	51.4	51.1	50.8	53.3	0.0	53.3
	8	52.0	55.1	49.3	54.8	54.7	54.3	54.0	52.7	51.7	50.0	49.7	49.4	52.0	0.0	52.
	9 10	52.7 51.8	56.1 54.8	49.9 49.2	55.8 54.6	55.5 54.4	55.0 54.0	54.6 53.6	53.4 52.4	52.4 51.5	50.7 49.9	50.4 49.6	50.0 49.3	52.7 51.8	0.0 0.0	52. 51.
	11	52.0	54.6	49.9	54.3	54.1	53.7	53.4	52.6	51.8	50.5	50.3	50.0	52.0	0.0	52.
	12	51.7	55.2	49.2	55.0	54.7	54.0	53.5	52.3	51.4	49.9	49.6	49.3	51.7	0.0	51.
Dav	13	52.5	55.5	50.0	55.3	55.1	54.6	54.3	53.3	52.2	50.6	50.4	50.1	52.5	0.0	52.
Day	14 15	53.3 52.8	56.7 55.8	50.5 50.5	56.5 55.6	56.2 55.3	55.6 54.9	55.3 54.6	54.0 53.5	52.9 52.5	51.3 51.1	50.9 50.8	50.6 50.6	53.3 52.8	0.0 0.0	53. 52.
	16	52.7	56.0	50.5	55.8	55.6	55.1	54.7	53.4	52.3	50.8	50.5	50.2	52.7	0.0	52.
	17	52.7	56.0	50.0	55.7	55.5	55.0	54.6	53.3	52.3	50.7	50.4	50.1	52.7	0.0	52.
	18	53.3	56.3	51.0	56.0	55.8	55.3	55.0	53.9	53.1	51.6	51.3	51.1	53.3	0.0	53.
	19 20	55.8 55.6	58.9 58.2	52.9 53.1	58.7 58.0	58.5 57.8	58.0 57.4	57.7 57.1	56.6 56.3	55.5 55.5	53.7 53.9	53.4 53.6	53.0 53.3	55.8 55.6	5.0 5.0	60. 60.
	21	56.7	60.5	53.6	60.2	59.9	59.1	58.7	57.5	56.2	54.4	54.1	53.7	56.7	5.0	61.
Night	22	56.0	59.3	52.7	59.1	58.8	58.2	57.9	56.8	55.6	53.6	53.2	52.8	56.0	10.0	66.
imeframe	23 Hour	56.1 L _{eq}	59.9 L _{max}	52.7 L _{min}	59.6 L1%	59.3 L2%	58.6 L5%	58.3 L8%	57.0 L25%	55.7 L50%	53.5 L90%	53.2 L95%	52.8 L99%	56.1	10.0 L _{eg} (dBA)	66.2
	Min	51.7	54.6	49.2	54.3	54.1	53.7	53.4	52.3	51.4	49.9	49.6	49.3	24-Hour	Daytime	Nightt
Day	Max	56.7	60.5	53.6	60.2	59.9	59.1	58.7	57.5	56.2	54.4	54.1	53.7	24-n0ur	(7am-10pm)	(10pm-7
Energy	Average Min	53.6 52.3	55.5	erage: 48.7	56.2 55.3	55.9 55.1	55.4 54.7	55.1 54.5	53.9 53.2	52.9 51.9	51.4 49.7	51.1 49.3	50.8 48.8	54.6	53.6	E C
Night	Max	52.3	61.4	48.7	61.2	61.1	60.6	54.5 60.4	53.2	51.9	49.7 57.7	49.3 57.4	48.8	54.0	22.0	56.
Energy	Average	56.0		erage:	58.4	58.1	57.6	57.2	56.2	55.1	53.3	53.0	52.7			



						24-Ho	ur Noise Le	evel Meas	urement S	ummary						
	-	/, July 28, 20 High-Cube F	21 Fullfillment W	'arehouse	Location	: L8 - Located residence at	southwest of 2208 McGwir	-	site near sing	gle-family	Meter:	Piccolo II				13923 A. Khan
							Hourly L _{eq} d	IBA Readings	(unadjusted)							
85.0																
80.0 75.0 70.0																
(Vap) 65.0 65.0 65.0																
→ 60.0 → 55.0				5.4										4		
Aluno 45.0 40.0	52.5	52.5	52.4	55.4	56.4	55.7 53.9	51.9	51.6		<mark>51.8</mark>	53.3 50.4	51.4	54.5	<mark>_28</mark>	54.1 53.0	51.3
35.0	+															-
	0	1 2	3	4 5	6	7 8	9 1		12 1 eginning	.3 14	15 16	5 17	18 19	20	21 22	23
eframe	Hour	L _{eq}	L _{max}	L _{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L _{eq}	Adj.	Adj.
	0 1	52.5 52.5	57.2 56.6	48.7 48.4	56.8 56.3	56.4 56.0	55.5 55.4	54.9 55.0	53.3 53.4	51.9 51.9	49.6 49.6	49.2 49.1	48.8 48.6	52.5 52.5	10.0 10.0	62
	2	52.5	60.6	48.4 50.0	60.3	59.9	55.4 59.0	55.0	56.1	51.9	49.8 51.4	49.1 50.8	50.2	52.5	10.0	62
light	3	52.4	56.1	48.7	55.8	55.6	55.1	54.7	53.3	51.9	49.6	49.2	48.8	52.4	10.0	62
	4	55.4	59.2	52.6	59.0	58.7	57.9	57.4	56.0	55.0	53.4	53.0	52.7	55.4	10.0	65
	5	59.6	63.8	57.6	63.5	63.1	61.9	61.2	59.9	59.1	58.0	57.9	57.6	59.6	10.0	69
	6 7	56.4 55.7	60.8 70.3	52.9 54.6	60.5 69.8	60.2 69.3	59.5 68.5	59.0 67.7	57.1 64.1	55.9 60.0	53.8 56.4	53.4 55.7	53.0 54.8	56.4 55.7	10.0 0.0	66 55
	8	53.9	70.3	57.2	75.1	73.9	71.8	71.1	68.9	66.3	60.5	59.2	57.5	53.9	0.0	53
	9	51.9	61.0	47.2	60.3	59.4	56.5	54.8	51.6	50.2	48.2	47.8	47.4	51.9	0.0	52
	10	49.2	53.2	46.3	52.9	52.6	51.7	51.1	49.8	48.8	47.1	46.7	46.4	49.2	0.0	49
	11	51.6	62.2	57.7	61.7	61.4	61.0	60.6	59.8	59.1	58.1	58.0	57.8	51.6	0.0	51
	12	53.4	65.2	50.2	64.5	63.5	60.2	58.5	55.7	53.1	51.1	50.7	50.4	53.4	0.0	53
Day	13 14	52.2 51.8	59.9 58.4	47.4 48.4	58.7 57.7	57.8 56.9	56.2 55.6	55.4 54.6	53.0 52.2	50.7 50.9	48.2 49.0	47.8 48.8	47.5 48.5	52.2 51.8	0.0 0.0	52 52
Duy	15	53.3	61.7	48.0	61.2	60.4	58.9	57.3	53.5	50.9	48.7	48.4	48.1	53.3	0.0	53
	16	50.4	56.5	46.9	56.1	55.7	54.2	52.9	50.7	49.5	47.7	47.4	47.0	50.4	0.0	50
	17	51.4	58.1	47.8	57.5	56.9	55.6	54.5	51.6	50.2	48.4	48.2	47.9	51.4	0.0	5:
	18	54.5	61.5	48.4	60.8	60.0	58.7	57.9	55.3	53.2	49.9	49.2	48.6	54.5	0.0	54
	19 20	55.3 58.4	62.4 62.5	52.4 56.6	61.7 62.0	61.0 61.5	58.9 60.7	57.3 60.1	55.4 58.9	54.3 58.0	53.1 57.0	52.8 56.8	52.6 56.6	55.3 58.4	5.0 5.0	60 63
	20	54.1	62.0	50.0	61.2	60.7	58.8	57.2	54.0	52.7	50.9	50.8	50.0	54.1	5.0	59
light	22	53.0	58.4	49.9	58.1	57.7	56.6	55.6	53.3	52.3	50.7	50.4	50.0	53.0	10.0	63
	23	51.3	55.8	47.9	55.6	55.3	54.1	53.6	52.2	50.7	48.7	48.4	48.0	51.3	10.0	61
eframe	Hour Min	L _{eq} 49.2	L _{max} 53.2	L _{min} 46.3	L1% 52.9	L2% 52.6	L5% 51.7	<i>L8%</i> 51.1	L25% 49.8	L50% 48.8	<i>L90%</i> 47.1	L95% 46.7	L99% 46.4		L _{eq} (dBA) Daytime	Night
Day	Max	49.2 58.4	75.8	40.5 57.7	75.1	73.9	71.8	71.1	68.9	40.0 66.3	60.5	59.2	40.4 57.8	24-Hour	(7am-10pm)	(10pm
Energy Av		53.8		erage:	61.4	60.7	59.1	58.1	55.6	53.9	51.6	51.2	50.7			
light	Min	51.3	55.8	47.9	55.6	55.3	54.1	53.6	52.2	50.7	48.7	48.4	48.0	54.3	53.8	55
	Max	59.6	63.8	57.6	63.5	63.1	61.9	61.2	59.9	59.1	58.0	57.9	57.6			
Energy Av		55.1		erage:	58.4	58.1	57.2	56.6	55.0	53.7	51.6	51.3	50.9			



						24-Ho	our Noise Le	evel Meas	urement S	ummary						
	Wednesday	-			Location:	L9 - Located		-	ear single-far	nily	Meter:	Piccolo II				13923
Project:	Bakersfield	Hign-Cube F	ullfillment W	arenouse		residence at	2303 March								Analyst:	A. Khan
							Hourly L _{eq} d	IBA Readings	(unadjusted)							
85.0	0															
80.0																
5 70.0																
00.0 ٿ	õ –			65.2	65.2	66.1 64.5	ເ	u <u>w</u>	<u>न</u> ्त्र ट	<mark>. 4</mark>		<mark></mark>	N 0	<u> </u>	<mark>0 4</mark>	o
j 50.0	0	60.5	62.1	<u>0</u> 0		9 9	<mark></mark>	64.	<mark></mark>	8 <mark></mark>	<mark>62 - 6</mark>	<mark></mark>	62.	<mark></mark>	62.2 61.4	60.6
80.0 75.0 770.0 65.0 1 AJunoH 45.0 40.0	0						\mp \mp							+ $+$		
35.0		1 2	2	4 F		7 8	1	0 11	12 1	2 14	15 1/	- 17	10 10	20	21 22	
	0	1 2	3	4 5	6	7 8	9 1		12 1 eginning	.3 14	15 10	5 17	18 19	20	21 22	23
Timeframe	Hour	L _{eq}	L _{max}	L _{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L _{eq}	Adj.	Adj. L _{eq}
	0	60.0	65.2	54.1	65.0	64.7	64.0	63.3	61.1	58.9	55.6	55.0	54.2	60.0	10.0	70.0
	1	60.1	65.9	52.6	65.7	65.4	64.6	63.7	61.3	58.8	54.3	53.5	52.7	60.1	10.0	70.1
Night	2	60.9	66.4	54.4	66.2	65.9	65.1	64.2	62.0	59.9	56.0	55.2	54.5	60.9	10.0	70.9
Night	4	62.1 65.2	67.0 68.7	56.0 61.1	66.6 68.5	66.4 68.3	65.8 67.9	65.2 67.4	63.3 66.1	61.3 64.8	57.7 62.6	56.9 61.9	56.2 61.3	62.1 65.2	10.0 10.0	72.1 75.2
	5	65.9	68.9	62.7	68.7	68.6	68.1	67.8	66.6	65.6	63.7	63.2	62.8	65.9	10.0	75.9
	6	65.2	68.8	61.3	68.6	68.3	67.8	67.4	66.1	64.9	62.6	62.0	61.4	65.2	10.0	75.2
	7	66.1	80.0	65.7	79.8	79.4	78.3	77.3	73.2	70.3	66.8	66.3	65.8	66.1	0.0	66.1
	8	64.5	68.2	60.5	68.0	67.8	67.4	66.9	65.4	64.1	61.7	61.2	60.6	64.5	0.0	64.5
	9 10	63.5 63.5	67.7	58.5	67.5	67.3	66.6	66.1	64.6	63.0	60.0	59.3	58.7	63.5	0.0	63.5
	10	63.5 64.3	68.5 68.5	58.8 60.3	68.2 68.2	67.9 68.0	67.3 67.4	66.6 66.9	64.2 65.1	62.7 63.6	60.2 61.3	59.5 60.8	58.9 60.4	63.5 64.3	0.0 0.0	63.5 64.3
	12	63.4	67.1	59.4	66.9	66.7	66.2	65.7	64.3	63.0	60.7	60.1	59.5	63.4	0.0	63.4
	13	63.0	66.9	58.2	66.7	66.5	65.9	65.4	64.0	62.5	60.0	59.1	58.4	63.0	0.0	63.0
Day	14	62.4	66.7	58.0	66.4	66.2	65.5	64.9	63.3	62.0	59.4	58.7	58.1	62.4	0.0	62.4
	15	62.7	66.3	58.5	66.1	66.0	65.5	65.0	63.6	62.3	59.8	59.2	58.6	62.7	0.0	62.7
	16 17	62.7 62.8	66.8 67.1	58.5 58.3	66.6 66.9	66.4 66.6	65.7 65.9	65.1 65.4	63.6 63.6	62.2 62.2	59.8 59.8	59.2 59.1	58.7 58.5	62.7 62.8	0.0 0.0	62.7 62.8
	17	62.8	67.1	58.3 57.4	66.4	66.1	65.9	65.4 64.8	63.6	62.2	59.8 59.1	59.1	58.5	62.8	0.0	62.8
	19	62.0	67.2	56.1	66.9	66.5	65.6	64.9	62.9	61.2	58.0	57.0	56.3	62.0	5.0	67.0
	20	61.6	66.0	56.8	65.8	65.6	65.1	64.4	62.5	61.0	58.1	57.5	57.0	61.6	5.0	66.6
	21	62.2	69.9	57.1	69.2	68.4	66.2	64.9	62.7	61.0	58.3	57.7	57.2	62.2	5.0	67.2
Night	22 23	61.4 60.6	66.0 65.7	57.0 55.0	65.8 65.5	65.5 65.3	64.7 64.6	64.1 63.8	62.3 61.6	60.7 59.5	58.1 56.3	57.5 55.7	57.1 55.1	61.4 60.6	10.0 10.0	71.4 70.6
Timeframe	Hour	L eq	L max	L min	L1%	L2%	L5%	63.8 L8%	L25%	59.5 L50%	50.3 L90%	55.7 L95%	L99%	0.0	L _{eg} (dBA)	70.0
	Min	61.6	66.0	56.1	65.8	65.6	65.1	64.4	62.5	61.0	58.0	57.0	56.3	24-Hour	Daytime	Nighttim
Day	Max	66.1	80.0	65.7	79.8	79.4	78.3	77.3	73.2	70.3	66.8	66.3	65.8	24-n0ur	(7am-10pm)	
Energy	Average	63.3		erage:	68.0	67.7	66.9	66.3	64.4	62.9	60.2	59.5	59.0	62.2	62.2	62.0
Night	Min Max	60.0 65.9	65.2 68.9	52.6 62.7	65.0 68.7	64.7 68.6	64.0 68.1	63.3 67.8	61.1 66.6	58.8 65.6	54.3 63.7	53.5 63.2	52.7 62.8	63.2	63.3	63.0
Energy	Average	63.0	-	erage:	66.7	66.5	65.8	65.2	63.4	61.6	58.5	57.9	57.3			



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APPENDIX 7.1:

OFF-SITE TRAFFIC NOISE LEVEL CALCULATIONS



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FHWA-RI	D-77-108 HIGHWAY	Y NOISE	PREDIC		IODEL (9	/12/20	021)		
Scenario: E Road Name: S. H St. Road Segment: n/o Harris F	Rd.				Name: N lumber: 1		c Gateway		
SITE SPECIFIC IN	IPUT DATA						L INPUTS	6	
Highway Data			Site Con	ditions	(Hard =	10, So	ft = 15)		
Average Daily Traffic (Adt):	18,902 vehicles					Autos:	15		
Peak Hour Percentage:	10.00%		Me	dium Tr	ucks (2 A	xles):	15		
Peak Hour Volume:	1,890 vehicles		He	avy Tru	cks (3+ A	xles):	15		
Vehicle Speed:	45 mph	-	Vehicle I	Mix					
Near/Far Lane Distance:	52 feet	F		icleType		Dav	Evening	Night	Daily
Site Data						77.5%	12.9%	9.6%	
Barrier Height:	0.0 feet		Me	edium T	rucks:	84.8%	4.9%	10.3%	2.52%
Barrier Type (0-Wall, 1-Berm):	0.0		ŀ	leavy T	rucks:	86.5%	2.7%	10.8%	5.67%
Centerline Dist. to Barrier:	55.0 feet	-	N 0-			6 F.	- 41		
Centerline Dist. to Observer:	55.0 feet	Ľ.	Noise So	Auto			et)		
Barrier Distance to Observer:	0.0 feet		Modiu	Auto n Truck					
Observer Height (Above Pad):	5.0 feet			v Truck			Grade Adj	ustmont	0.0
Pad Elevation:	0.0 feet		neav	у писк	s. o.u	104	Graue Auj	usument.	0.0
Road Elevation:	0.0 feet	4	Lane Equ	uivalen	t Distanc	e (in f	eet)		
Road Grade:	0.0%			Auto	s: 48.7	24			
Left View:	-90.0 degrees		Mediur	m Truck	s: 48.5	642			
Right View:	90.0 degrees		Heav	ry Truck	s: 48.5	59			
FHWA Noise Model Calculation	s								
VehicleType REMEL	Traffic Flow Di	istance	Finite	Road	Fresn	e/	Barrier Atte	en Ber	m Atten
Autos: 68.46		0.0		-1.20		4.67	0.0		0.000
Medium Trucks: 79.45		0.0		-1.20		4.87	0.0		0.000
Heavy Trucks: 84.25	-11.54	0.0	19	-1.20		-5.38	0.0	00	0.000
Unmitigated Noise Levels (with		ier atter	nuation)						
VehicleType Leq Peak Hou		Leq E	vening	Leq	Night		Ldn		VEL
	'.9 <u>66.0</u>		64.2		58.2		66.8		67.4
	8.3 61.8		55.4		53.9		62.3		62.6
	.6 70.2		61.1		62.4		70.7		70.9
Vehicle Noise: 73	3.6 72.0		66.3		64.2		72.6		72.9
Centerline Distance to Noise Co	ontour (in feet)								
			dBA	65	dBA	6	0 dBA	55	dBA
	Ldn:		82		178		383		825
	CNEL:		86		185		399		859

	FHWA-RD	-77-108 HIGH\	NAY N	OISE P	REDICTION	IODEL	(9/12/2	021)		
Scenari Road Nam Road Segmer		td.					Majest 13923	ic Gateway	'	
SITE	SPECIFIC IN	PUT DATA				NOISE	MODE		5	
Highway Data				Si	te Conditions	(Hard	= 10, So	oft = 15)		
Average Daily	Traffic (Adt):	20,985 vehicle	s				Autos:	15		
Peak Hour	Percentage:	10.00%			Medium Ti	rucks (2	Axles):	15		
Peak H	our Volume:	2,098 vehicles			Heavy Tru	icks (3+	Axles):	15		
Ve	hicle Speed:	45 mph		14	hicle Mix					
Near/Far La	ne Distance:	52 feet		Ve	VehicleType	•	Dav	Evening	Night	Daily
Site Data						Autos:	77.5%	•	9.6%	
				_	Medium 1		84.8%		10.3%	2.279
	rier Height:	0.0 feet			Heavy 1				10.3%	5.119
Barrier Type (0-W	. ,	0.0 55.0 feet							10.078	0.11
Centerline Dis				No	oise Source E	levatio	ns (in fe	eet)		
Centerline Dist. Barrier Distance		55.0 feet 0.0 feet			Auto	os: (0.000			
Observer Height (5.0 feet			Medium Truck	(S: 2	2.297			
	ad Elevation:	0.0 feet			Heavy Truck	(S: 8	3.004	Grade Ad	iustment:	0.0
	d Elevation:	0.0 feet		La	ne Equivalen	t Dista	nce (in	feet)		
	Road Grade:	0.0%			Auto		3.724			
1	Left View:	-90.0 degree	e		Medium Truck		3.542			
	Right View:	90.0 degree			Heavy Truck		3.559			
FHWA Noise Mode	al Calculations	5								
VehicleType	REMEL	Traffic Flow	Dista		Finite Road	Fres	-	Barrier Att		m Atten
Autos:	68.46	1.05		0.07	-1.20		-4.67		000	0.00
Medium Trucks:	79.45	-15.06		0.09	-1.20		-4.87		000	0.00
Heavy Trucks:	84.25	-11.54		0.09	-1.20		-5.38	0.0	000	0.00
Unmitigated Noise	Levels (with	out Topo and k	barrier	attenua	ation)					
	Leq Peak Hou			Leq Eve		Night		Ldn		VEL
Autos:	68		6.5		64.7	58		67.3		67
Medium Trucks:	63		61.8		55.4	53		62.3		62
Heavy Trucks:	71		0.2		61.1	62		70.7		70
Vehicle Noise:	73	.7 7	2.1		66.6	64	.3	72.8	3	73.
Centerline Distanc	e to Noise Co	ntour (in feet)								
				70 dE		dBA	_	60 dBA		dBA
			.dn:		84	18		391		842
			IEL:		88	18	a	408		878

Monday, November 8, 2021

FHWA-	RD-77-108 HIGH	WAY NO	ISE PR	REDICT		DEL (9/1	12/20	21)		
Scenario: 2024 Road Name: S. H St. Road Segment: n/o Harris	Rd.				Project Na Job Num			Gateway		
SITE SPECIFIC	INPUT DATA			-				INPUT	5	
Highway Data			Site	Condi	tions (H	ard = 10), Sof	ť = 15)		
Average Daily Traffic (Adt):	19,127 vehicle	s				Au	itos:	15		
Peak Hour Percentage:	10.00%			Medi	um Truck	(s (2 Axl	les):	15		
Peak Hour Volume:	1,913 vehicles	3		Heav	y Trucks	; (3+ Axl	les):	15		
Vehicle Speed:	45 mph		Vet	hicle Mi	x					
Near/Far Lane Distance:	52 feet				eType	Da	ay	Evening	Night	Daily
Site Data					Aut	os: 77	7.5%	12.9%	9.6%	91.819
Barrier Height:	0.0 feet			Med	lium Truc	ks: 84	1.8%	4.9%	10.3%	2.52%
Barrier Type (0-Wall, 1-Berm).	0.0			He	avy Truc	ks: 86	6.5%	2.7%	10.8%	5.67%
Centerline Dist. to Barrier.	55.0 feet		Noi	ise Sou	rce Elev	ations (in for	at)		
Centerline Dist. to Observer.	55.0 feet		1101	30 000	Autos:	0.00				
Barrier Distance to Observer.	0.0 feet			Andium	Trucks:	2.29	-			
Observer Height (Above Pad).	5.0 feet				Trucks:	8.00		Grade Ad	ustment	0.0
Pad Elevation:	0.0 feet								dourioni.	0.0
Road Elevation:	0.0 feet		Lan	ie Equi	valent D			eet)		
Road Grade:	0.070				Autos:	48.72				
Left View:	00.0 409.00		٨		Trucks:	48.54				
Right View.	90.0 degree	es		Heavy	Trucks:	48.55	9			
FHWA Noise Model Calculation	ns									
VehicleType REMEL	Traffic Flow	Distan	ce l	Finite R	oad	Fresnel	E	Barrier Atte	en Ben	m Atten
Autos: 68.4			0.07		-1.20		.67	0.0		0.00
Medium Trucks: 79.4			0.09		-1.20		.87	0.0		0.00
Heavy Trucks: 84.2	5 -11.49		0.09		-1.20	-5	.38	0.0	000	0.00
Unmitigated Noise Levels (wi										
VehicleType Leq Peak H			q Even	•	Leq Nig			Ldn		VEL
		66.0		64.3		58.2		66.8		67.
		61.8		55.5		53.9		62.4		62.
		70.2		61.2		62.4		70.8		70.
Vehicle Noise:	73.6	72.1		66.4		64.3		72.7	r	73.
Centerline Distance to Noise	Contour (in feet)									
			70 dBA		65 dB.		60) dBA		dBA
		Ldn:		83		179		386		831
	~	VEL:		87		187		402		866

	FHWA-RI	D-77-108 HIGH	WAY N	IOISE	PREDIC	TION M	IODEL (9/	12/20	21)		
Road Nan	rio: 2024+P ne: S. H St. ent: n/o Harris F	Rd.					Name: M umber: 13		c Gateway		
SITE	SPECIFIC IN	IPUT DATA								s	
Highway Data				S	Site Con	ditions	(Hard = 1	0, So	ft = 15)		
Average Daily	Traffic (Adt):	21,210 vehicle	es				A	utos:	15		
Peak Hour	Percentage:	10.00%			Me	dium Tri	ucks (2 Ax	les):	15		
Peak H	lour Volume:	2,121 vehicle	s		He	avy Tru	cks (3+ Ax	les):	15		
Ve	ehicle Speed:	45 mph		V	/ehicle I	Mix					
Near/Far La	ane Distance:	52 feet		-		icleType	D	ay	Evening	Night	Daily
Site Data								7.5%	12.9%	9.6%	
Ba	rrier Heiaht:	0.0 feet			Me	edium T	rucks: 8	4.8%	4.9%	10.3%	2.27
Barrier Type (0-V		0.0			ŀ	leavy T	rucks: 8	6.5%	2.7%	10.8%	5.11
Centerline D	ist. to Barrier:	55.0 feet			loise So	urce Fl	evations	(in fe	et)		
Centerline Dist.	to Observer:	55.0 feet		-		Auto					
Barrier Distance	to Observer:	0.0 feet			Mediu	m Truck	. 0.00				
Observer Height	(Above Pad):	5.0 feet				y Truck			Grade Ad	iustment	: 0.0
P	ad Elevation:	0.0 feet									
	ad Elevation:	0.0 feet		L	ane Equ		Distance		eet)		
	Road Grade:	0.0%				Auto					
	Left View:	-90.0 degree				m Truck					
	Right View:	90.0 degre	es		Heav	y Truck	s: 48.55	59			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresne	/ I	Barrier Atte	en Ber	m Atter
Autos:	68.46	1.09		0.07	7	-1.20	-4	4.67	0.0	000	0.00
Medium Trucks:				0.09		-1.20		1.87		000	0.00
Heavy Trucks:	84.25	-11.49		0.09	9	-1.20	-{	5.38	0.0	000	0.0
Unmitigated Nois											
VehicleType	Leq Peak Hou			Leq Ev		Leq	Night		Ldn		NEL
Autos:			66.5		64.8		58.7		67.3		67
Medium Trucks:			61.8		55.5		53.9		62.4		62
Heavy Trucks:			70.2		61.2		62.4		70.8		70
Vehicle Noise:			72.2		66.7		64.4		72.8	3	73
Centerline Distan	ce to Noise Co	ontour (in feet)								
				70 d		65	dBA	6	0 dBA		dBA
		-	Ldn: NEL:		85 89		183 191		394 411		84 88

FH\	NA-RD-7	7-108 HIGH	WAY	NOISE	PREDIC		IODEL (S)/12/20)21)		
Scenario: 2029 Road Name: S. H Road Segment: n/o H	St.						Name: 1 lumber: 1		c Gateway	r	
SITE SPECIE	IC INPU	JT DATA				N	IOISE N	IODE	L INPUTS	5	
Highway Data					Site Con	ditions	(Hard =	10, So	ft = 15)		
Average Daily Traffic ()	A <i>dt):</i> 19	,022 vehicle	s				,	Autos:	15		
Peak Hour Percent	<i>age:</i> 10	.00%			Me	dium Tr	ucks (2 A	xles):	15		
Peak Hour Volu	ime: 1,9	902 vehicles	6		He	avy Tru	cks (3+ A	xles):	15		
Vehicle Sp	eed:	45 mph			Vehicle I	Mix					
Near/Far Lane Dista	nce:	52 feet		-		icleType		Dav	Evening	Night	Daily
Site Data								77.5%	12.9%	9.6%	
Barrier Hei	abt.	0.0 feet			Me	edium T	rucks:	84.8%	4.9%	10.3%	2.52%
Barrier Type (0-Wall, 1-Be	•	0.0			ŀ	leavy T	rucks:	86.5%	2.7%	10.8%	5.67%
Centerline Dist. to Ba	· ·	55.0 feet		-	N 0-				- 41		
Centerline Dist. to Obse	rver:	55.0 feet		4	Noise So	Auto		000	et)		
Barrier Distance to Obse	rver:	0.0 feet			Madiu	n Truck		297			
Observer Height (Above F	Pad):	5.0 feet				v Truck			Grade Adj	ustment	. 0 0
Pad Eleva	tion:	0.0 feet			Ticav	y much	3. 0.0	104	Orade Auj	usunem	. 0.0
Road Eleva	tion:	0.0 feet		1	Lane Equ	uivalen	t Distanc	e (in f	eet)		
Road Gr	ade: 0	0.0%				Auto					
Left V	'iew: -	90.0 degree	s		Mediur	m Truck					
Right V	liew:	90.0 degree	es		Heav	y Truck	s: 48.	559			
FHWA Noise Model Calcu	lations										
VehicleType REM		raffic Flow	Dis	tance	Finite		Fresn	-	Barrier Atte		m Atten
	68.46	0.58		0.0		-1.20		-4.67	0.0		0.000
	79.45	-15.03		0.0	-	-1.20		-4.87	0.0		0.000
Heavy Trucks:	84.25	-11.51		0.0	9	-1.20		-5.38	0.0	000	0.000
Unmitigated Noise Levels			-		(
VehicleType Leq Pea		Leq Day		Leq E	vening	Leq	Night		Ldn		NEL
Autos:	67.9		66.0		64.2		58.2		66.8		67.4
Medium Trucks:	63.3		61.8		55.4		53.9		62.4		62.6
Heavy Trucks: Vehicle Noise:	71.6		70.2		61.2		62.4		70.8		70.9
	73.6		72.0		66.4		64.2		72.7		72.9
Centerline Distance to No	ise Cont	our (in feet)		=0	10.1						
			L	70 0	dBA	65	dBA	6	0 dBA	55	dBA
			Ldn: VEL:		83		178		384		828
		CI	VEL.		86		186		400		863

	FHWA-RD	-77-108 HIGH	WAY N	NOISE P	REDICTION	IODEL	(9/12/2	021)		
Road Nam	o: 2029+P e: S. H St. nt: n/o Harris R	łd.					Majest 13923	ic Gateway	'	
SITE	SPECIFIC IN	PUT DATA				NOISE	MODE		s	
Highway Data				Si	te Conditions	(Hard	= 10, So	oft = 15)		
Average Daily	Traffic (Adt):	21,105 vehicle	s				Autos:	15		
Peak Hour	Percentage:	10.00%			Medium Ti	rucks (2	Axles):	15		
Peak H	our Volume:	2,110 vehicles			Heavy Tru	icks (3+	Axles):	15		
Ve	hicle Speed:	45 mph		14	hicle Mix					
Near/Far La	ne Distance:	52 feet		Ve	VehicleType	•	Dav	Evening	Night	Daily
Site Data						Autos:	77.5%	•	9.6%	
		0.0 feet			Medium 1		84.8%		10.3%	
ваг Barrier Type (0-W	rier Height:	0.0 reet			Heavy 1				10.8%	
Centerline Dis	. ,	55.0 feet								
Centerline Dist.		55.0 feet		No	oise Source E			eet)		
Barrier Distance		0.0 feet			Auto		0.000			
Observer Height (5.0 feet			Medium Truck		2.297			
	ad Elevation:	0.0 feet			Heavy Truck	(S: 8	3.004	Grade Ad	iustment:	0.0
	d Elevation:	0.0 feet		Lá	ne Equivalen	t Dista	nce (in i	feet)		
	Road Grade:	0.0%			Auto	os: 48	3.724	,		
	Left View:	-90.0 degree	s		Medium Truck	(s: 48	3.542			
	Right View:	90.0 degree	s		Heavy Truck	(s: 48	3.559			
FHWA Noise Mode										
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite Road	Fres	-	Barrier Att		m Atten
Autos:	68.46	1.07		0.07	-1.20		-4.67		000	0.00
Medium Trucks:	79.45	-15.03		0.09	-1.20		-4.87		000	0.00
Heavy Trucks:	84.25	-11.51		0.09	-1.20		-5.38	0.0	000	0.00
Unmitigated Noise			-		,					
	Leq Peak Hou			Leq Eve		Night		Ldn		VEL
Autos:	68		6.5		64.7	58		67.3		67.
Medium Trucks:	63		51.8		55.4	53		62.4		62.
Heavy Trucks:	71		70.2		61.2	62		70.8		70.
Vehicle Noise:	73	.7	72.2		66.7	64	.4	72.8	3	73.
Centerline Distanc	e to Noise Co	ntour (in feet)		70.15			-	0 -10 4		-/0.4
				70 dE		dBA		0 dBA		dBA
			Ldn: IEL:		85	18	-	392		845
		CI	IEL:		88	19	0	409		882

Monday, November 8, 2021

FHWA-I	RD-77-108 HIGH	WAY NO	SE PRED	ICTION M	ODEL (9/	12/2021)			
Scenario: 2042 Road Name: S. H St. Road Segment: n/o Harris	Rd.				Name: M umber: 13		iteway		
SITE SPECIFIC	INPUT DATA				IOISE M				
Highway Data			Site C	onditions	(Hard = 1	0, Soft = 1	15)		
Average Daily Traffic (Adt):	19,383 vehicle	s				utos: 1	-		
Peak Hour Percentage:	10.00%			Medium Tru		,	-		
Peak Hour Volume:	1	5		Heavy Truc	cks (3+ Ax	(les): 1	5		
Vehicle Speed:			Vehic	e Mix					
Near/Far Lane Distance:	52 feet		V	ehicleType	D	ay Eve	ning Ni	ight	Daily
Site Data					Autos: 7	7.5% 12	2.9%	9.6%	91.819
Barrier Height:	0.0 feet			Medium Tr	rucks: 8	4.8% 4	4.9% 1	0.3%	2.52%
Barrier Type (0-Wall, 1-Berm):	0.0			Heavy Tr	rucks: 8	6.5% 2	2.7% 1	0.8%	5.67%
Centerline Dist. to Barrier:	55.0 feet		Noise	Source El	ovations	(in foot)			
Centerline Dist. to Observer:	55.0 feet		110/30	Autos		. /			
Barrier Distance to Observer:	0.0 feet		Mar	lium Truck:					
Observer Height (Above Pad):	5.0 feet			avy Truck			de Adjust	ment (0.0
Pad Elevation:	0.0 feet								
Road Elevation:	0.0 feet		Lane I	quivalent		, ,			
Road Grade:	0.0%			Autos		24			
Left View:		s		lium Trucks	10.0				
Right View:	90.0 degree	s	He	avy Truck	s: 48.55	59			
FHWA Noise Model Calculatio	ns		-						
VehicleType REMEL	Traffic Flow	Distand	e Fin	ite Road	Fresne	l Barri	er Atten	Berm	n Atten
Autos: 68.4	6 0.67		0.07	-1.20	-4	4.67	0.000		0.00
Medium Trucks: 79.4			0.09	-1.20		4.87	0.000		0.00
Heavy Trucks: 84.2	5 -11.43		0.09	-1.20	-{	5.38	0.000		0.00
Unmitigated Noise Levels (wit	hout Topo and	barrier at	tenuatior)					-
VehicleType Leq Peak H			q Evening		Night	Ldn		CNE	
		66.1	64		58.3		66.9		67.
		61.9	55		54.0		62.4		62.
		70.3		.3	62.5		70.9		71.
Vehicle Noise:	73.7	72.1	66	.4	64.3		72.7		73.
Centerline Distance to Noise	Contour (in feet)								-
			70 dBA		dBA	60 dB		55 di	
		Ldn:		4	181		389		839
		IEL:		7	188		405		874

	FHWA-RD	-77-108 HIGHW	AY NOIS		TION MO	DEL (9/12/	2021)		
Road Name	o: 2042+P e: S. H St. t: n/o Harris Re	d.				lame: Maje nber: 1392	stic Gateway 3		
SITE S	SPECIFIC INI	PUT DATA					EL INPUTS	3	
Highway Data				Site Cond	ditions (H	lard = 10, 3	Soft = 15)		
Average Daily 1	Traffic (Adt):	21,466 vehicles				Auto	s: 15		
Peak Hour I	Percentage:	10.00%				ks (2 Axles			
Peak Ho	our Volume:	2,147 vehicles		Hea	avy Truck	s (3+ Axles): 15		
Veh	nicle Speed:	45 mph		Vehicle N	Niv				
Near/Far Lar	ne Distance:	52 feet			cleType	Day	Evening	Night	Dailv
Site Data						tos: 77.5	-		92.61%
Bar	rier Height:	0.0 feet		Me	edium Tru	cks: 84.8	% 4.9%	10.3%	2.28%
Barrier Type (0-Wa		0.0		H	leavy Tru	cks: 86.5	% 2.7%	10.8%	5.12%
Centerline Dis	. ,	55.0 feet		Noiso So	urco Elo	vations (in	foot)		
Centerline Dist. t	o Observer:	55.0 feet		Noise 30	Autos:		Teelj		
Barrier Distance t	o Observer:	0.0 feet		Madium	n Trucks:	2.297			
Observer Height (/	Above Pad):	5.0 feet			y Trucks:	8.004	Grade Adj	ustment [.]	0.0
Pa	d Elevation:	0.0 feet		i icav	y muchs.	0.004	0/000 / 10)	aounom.	0.0
Roa	d Elevation:	0.0 feet		Lane Equ	ivalent D	Distance (in	n feet)		
F	Road Grade:	0.0%			Autos:	48.724			
	Left View:	-90.0 degrees			n Trucks:	48.542			
	Right View:	90.0 degrees		Heav	y Trucks:	48.559			
FHWA Noise Mode	I Calculations			1					
VehicleType	REMEL		Distance			Fresnel	Barrier Atte		m Atten
Autos:	68.46	1.15		.07	-1.20	-4.6			0.000
Medium Trucks:	79.45	-14.95		.09	-1.20	-4.8			0.000
Heavy Trucks:	84.25	-11.43	0.	.09	-1.20	-5.3	B 0.0	00	0.00
Unmitigated Noise	Levels (witho	ut Topo and ba							
	Leq Peak Hour			Evening	Leq N	•	Ldn		IEL
Autos:	68.			64.8		58.8	67.4		68.0
Medium Trucks:	63.4			55.5		54.0	62.4		62.1
Heavy Trucks:	71.		-	61.3		62.5	70.9		71.(
Vehicle Noise:	73.	8 72	.2	66.7		64.4	72.9		73.2
Centerline Distance	e to Noise Col	ntour (in feet)							
			70) dBA	65 dE		60 dBA	55	dBA
		Ld CNE		86 89		184 192	397 414		856 893

	FHWA-RD	-77-108 HIGH	WAY NOI	SE PREDIO	CTION M	ODEL (9	/12/20)21)		
Scenari Road Nam Road Segmer		Ln.				Name: N umber: 1		c Gateway		
SITE	SPECIFIC IN	PUT DATA						L INPUTS	6	
Highway Data				Site Con	ditions	(Hard =	10, So	ft = 15)		
Average Daily	Traffic (Adt):	14,867 vehicle	s			A	Autos:	15		
Peak Hour	Percentage:	10.00%		Me	dium Tri	icks (2 A	xles):	15		
Peak H	our Volume:	1,487 vehicles		He	eavy True	cks (3+ A	xles):	15		
Vel	nicle Speed:	45 mph		Vehicle	Mix					
Near/Far Lar	ne Distance:	52 feet			icleType	1	Dav	Evenina	Niaht	Daily
Site Data							77.5%	12.9%	9.6%	
Bar	rier Heiaht:	0.0 feet		М	edium Ti	ucks:	84.8%	4.9%	10.3%	2.52%
Barrier Type (0-W		0.0			Heavy Ti	ucks:	86.5%	2.7%	10.8%	5.67%
Centerline Dis	. ,	55.0 feet		Noise O			6	- 41		
Centerline Dist. I	o Observer:	55.0 feet		Noise Se	Auto:			et)		
Barrier Distance t	o Observer:	0.0 feet		Madiu	m Truck					
Observer Height ()	Above Pad):	5.0 feet			vy Truck			Grade Adji	ustmont	0.0
Pa	d Elevation:	0.0 feet		пеа	vy muck	s. o.u	104	Graue Auji	usument.	0.0
Roa	d Elevation:	0.0 feet		Lane Eq	uivalent	Distanc	e (in f	eet)		
F	Road Grade:	0.0%			Auto	s: 48.7	24			
	Left View:	-90.0 degree	s	Mediu	m Truck	s: 48.5	642			
	Right View:	90.0 degree	s	Hear	vy Truck	s: 48.5	59			
FHWA Noise Mode	I Calculations	:								
VehicleType	REMEL	Traffic Flow	Distanc	e Finite	Road	Fresne	e/	Barrier Atte	en Ber	m Atten
Autos:	68.46	-0.49		0.07	-1.20		4.67	0.0	00	0.000
Medium Trucks:	79.45	-16.10		0.09	-1.20		4.87	0.0		0.000
Heavy Trucks:	84.25	-12.58		0.09	-1.20		-5.38	0.0	00	0.000
Unmitigated Noise	Levels (witho	ut Topo and I	barrier at	enuation)						
VehicleType		r Leg Day	Leo	Evening	Leq	Night		Ldn	CI	VEL
	Leq Peak Hou									66.3
Autos:	. 66.	8 (64.9	63.2		57.1		65.7		
Autos: Medium Trucks:	66. 62.	8 6	50.7	54.4		52.8		61.3		61.5
Autos: Medium Trucks: Heavy Trucks:	66. 62. 70.	8 (2 (6 (60.7 69.1	54.4 60.1		52.8 61.4		61.3 69.7		61.5 69.8
Autos: Medium Trucks:	66. 62.	8 (2 (6 (50.7	54.4		52.8		61.3		61.5 69.8
Autos: Medium Trucks: Heavy Trucks:	66. 62. 70. 72.	8 (2 (6 (5)	60.7 69.1 71.0	54.4 60.1 65.3		52.8 61.4 63.2		61.3 69.7 71.6		61.5 69.8 71.9
Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	66. 62. 70. 72.	8 (2 (6 (5)	50.7 59.1 71.0	54.4 60.1 65.3 70 dBA		52.8 61.4 63.2 dBA		61.3 69.7 71.6 0 dBA		61.5 69.8 71.9 dBA
Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	66. 62. 70. 72.	8 (2 6 (6 5)	60.7 69.1 71.0	54.4 60.1 65.3		52.8 61.4 63.2		61.3 69.7 71.6		61.5 69.8 71.9

		7-108 HIGHWAY	NOICE	TILEDIO								
Scenario: E								ic Gateway	'			
Road Name: S					Job N	umber:	13923					
Road Segment: r	n/o Panama Lr	1.										
	ECIFIC INPU	IT DATA		NOISE MODEL INPUTS Site Conditions (Hard = 10, Soft = 15)								
Highway Data				Site Con	ditions	(Hard =	10, So	oft = 15)				
Average Daily Trat	ffic (Adt): 17,	388 vehicles					Autos:	15				
Peak Hour Per	centage: 10	.00%		Me	dium Tri	ucks (2)	Axles):	15				
Peak Hour	Volume: 1,7	'39 vehicles		He	avy Tru	cks (3+)	Axles):	15				
Vehicle	e Speed:	45 mph		Vehicle I	Nix							
Near/Far Lane D	Distance:	52 feet	F		cleType		Dav	Evening	Night	Daily		
Site Data						Autos:	77.5%		9.6%			
Barrio	r Height:	0.0 feet		Me	edium Ti	ucks:	84.8%	4.9%	10.3%	2.159		
Barrier Type (0-Wall,		0.0		ŀ	leavy Ti	ucks:	86.5%	2.7%	10.8%	4.85%		
Centerline Dist. to	,	55.0 feet	-									
Centerline Dist. to C		55.0 feet	4	Noise So				eet)				
Barrier Distance to C	bserver:	0.0 feet			Auto		000					
Observer Height (Abo	ve Pad):	5.0 feet			n Truck		297	Crada Ad	iuntmont	0.0		
Pad E	levation:	0.0 feet		Heav	y Truck	5. 8.	004	Grade Adj	usimeni	0.0		
Road E	levation:	0.0 feet		Lane Equ	iivalent	Distan	ce (in f	feet)				
Roa	d Grade: 0	.0%			Auto	s: 48.	724					
L	eft View: -9	90.0 degrees		Mediur	n Truck	s: 48.	542					
Rig	ght View:	90.0 degrees		Heav	y Truck	s: 48.	559					
FHWA Noise Model C												
			istance	Finite		Fresr		Barrier Atte		m Atten		
Autos:	68.46	0.25	0.0		-1.20		-4.67		000	0.00		
Medium Trucks:	79.45	-16.10	0.0		-1.20		-4.87		000	0.00		
Heavy Trucks:	84.25	-12.58	0.0	9	-1.20		-5.38	0.0	000	0.00		
Unmitigated Noise Le	vels (without	Topo and barri	ier atten	uation)								
	g Peak Hour	Leq Day	Leq E	vening	Leq	Night		Ldn		VEL		
Autos:	67.6	65.7		63.9		57.9		66.5		67.		
Medium Trucks:	62.2	60.7		54.4		52.0		61.3		61.		
Heavy Trucks:	70.6	69.1		60.1		61.4		69.7		69.		
Vehicle Noise:	72.7	71.2		65.7		63.4	1	71.8	3	72.		
Centerline Distance to	o Noise Conto	our (in feet)										
			70 (dBA	65	dBA		i0 dBA		dBA		
		Ldn:		73		156		337		72		
		CNEL:		76		163		351		75		

Monday, November 8, 2021

	FHWA-RD	0-77-108 HIGH	VAY NO	SE PR	EDIC	TION M	ODEL (9	/12/2	021)		
Scenario Road Name Road Segment	S. H St.	a Ln.					Name: N Imber: 1		ic Gateway	/	
	PECIFIC IN	PUT DATA							L INPUT	5	
Highway Data				Site	Cond	ditions (Hard =	10, Sc	oft = 15)		
Average Daily T	raffic (Adt):	16,234 vehicle	s					Autos:			
Peak Hour P	ercentage:	10.00%				dium Tru		/			
	ur Volume:	1,623 vehicles			Hea	avy Truc	ks (3+ A	xles):	15		
	icle Speed:	45 mph		Veh	icle N	lix					
Near/Far Lane	e Distance:	52 feet			Vehi	cleType	1	Day	Evening	Night	Daily
Site Data						A	utos:	77.5%	12.9%	9.6%	91.81%
Rarr	ier Heiaht:	0.0 feet			Me	dium Tr	ucks:	84.8%	4.9%	10.3%	2.52%
Barrier Type (0-Wa		0.0			h	leavy Tr	ucks:	86.5%	2.7%	10.8%	5.67%
Centerline Dist	. ,	55.0 feet		Noi		urce Ele	vetiene	(in f	a a fi		
Centerline Dist. to	Observer:	55.0 feet		NUL	36 30	Autos			eel)		
Barrier Distance to	Observer:	0.0 feet			lodium	n Trucks	. 0.0				
Observer Height (A	bove Pad):	5.0 feet				v Trucks	-		Grade Ad	iustment	. 0 0
Pac	Elevation:	0.0 feet			neav.	y mucks	. 0.0	104	0/000/10	aounom	0.0
Road	l Elevation:	0.0 feet		Lan	e Equ	ıivalent	Distanc	e (in i	feet)		
R	oad Grade:	0.0%				Autos					
	Left View:	-90.0 degree	s			n Trucks		542			
1	Right View:	90.0 degree	S		Heav	y Trucks	48.5	59			
FHWA Noise Model	Calculation	5									
VehicleType	REMEL	Traffic Flow	Distand	e I	inite l	Road	Fresne	e/	Barrier Att	en Ber	m Atten
Autos:	68.46	-0.10		0.07		-1.20		4.67		000	0.000
Medium Trucks:	79.45	-15.72		0.09		-1.20		4.87		000	0.000
Heavy Trucks:	84.25	-12.20		0.09		-1.20		-5.38	0.0	000	0.00
Unmitigated Noise	Levels (with	out Topo and L	arrier at	tenuat	ion)						
			10	y Even	ina	Leg I	light		Ldn	CI	VEL
	eq Peak Hou			Lven		LOGI					
Autos:	eq Peak Hou 67	.2 6	5.3	Lven	63.6	Logi	57.5		66.		
Autos: Medium Trucks:	eq Peak Hou 67 62	.2 6	5.3 1.1	1 L Ven	63.6 54.7	Logi	57.5 53.2		61.	7	61.
Autos: Medium Trucks: Heavy Trucks:	eq Peak Hou 67 62 70	.2 6 .6 6 .9 6	5.3 1.1 9.5	LVen	63.6 54.7 60.5	Logi	57.5 53.2 61.7		61. 70.	7	61. 70.
Autos: Medium Trucks:	eq Peak Hou 67 62	.2 6 .6 6 .9 6	5.3 1.1	LVEN	63.6 54.7		57.5 53.2		61.	7	61. 70.
Autos: Medium Trucks: Heavy Trucks:	eq Peak Hou 67 62 70 72	.2 6 .6 6 .9 6 .9 7	65.3 61.1 69.5 71.4		63.6 54.7 60.5 65.7		57.5 53.2 61.7 63.5		61. 70. 72.	7 1)	61.9 70.2 72.2
Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	eq Peak Hou 67 62 70 72	2 6 .6 6 .9 6 .9 7 .9 7	5.3 51.1 59.5 '1.4	70 dBA	63.6 54.7 60.5 65.7	65 0	57.5 53.2 61.7 63.5		61. 70. 72.0	55	61.9 70.2 72.2 dBA
Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	eq Peak Hou 67 62 70 72	.6 6 .9 6 .9 7 ntour (in feet)	65.3 61.1 69.5 71.4		63.6 54.7 60.5 65.7		57.5 53.2 61.7 63.5		61. 70. 72.	55	66.7 61.9 70.2 72.2 dBA 745 776

	FHWA-RI	D-77-108 HIGH	IWAY NO	DISE	PREDIC		IODEL (9/12	/2021)		
Scenario: Road Name: Road Segment:	S. H St.	a Ln.					Name: Maje umber: 139	estic Gateway 23		
	ECIFIC IN	IPUT DATA						DEL INPUT	5	
Highway Data				5	Site Con	ditions	(Hard = 10,	Soft = 15)		
Average Daily Tra	affic (Adt):	18,755 vehicle	es				Auto	os: 15		
Peak Hour Pe	ercentage:	10.00%			Me	dium Tr	ucks (2 Axle	s): 15		
Peak Hou	r Volume:	1,876 vehicle	s		He	avy Tru	cks (3+ Axle	s): 15		
Vehic	le Speed:	45 mph		1	Vehicle I	Mix				
Near/Far Lane	Distance:	52 feet		- F		icleType	Day	Evening	Night	Daily
Site Data					10.11		Autos: 77.	-	9.6%	
Barrie	er Height:	0.0 feet			Me	edium T	rucks: 84.	3% 4.9%	10.3%	2.18%
Barrier Type (0-Wall,		0.0			ŀ	leavy T	rucks: 86.	5% 2.7%	10.8%	4.91%
Centerline Dist.	,	55.0 feet		H	N 0-			f = = 41		
Centerline Dist. to	Observer:	55.0 feet		'	voise So		evations (in	reet)		
Barrier Distance to	Observer:	0.0 feet				Auto	0.000			
Observer Height (Ab	ove Pad):	5.0 feet				m Truck		Grade Ad	ivetmen	+ 0.0
Pad	Elevation:	0.0 feet			Heav	y Truck	s: 8.004	Grade Auj	usunen	1. 0.0
Road	Elevation:	0.0 feet		L	Lane Equ	uivalen	Distance (i	n feet)		
Ro	ad Grade:	0.0%				Auto	s: 48.724			
	Left View:	-90.0 degree	es		Mediur	m Truck	s: 48.542			
R	ight View:	90.0 degree	es		Heav	y Truck	s: 48.559			
	Calculation	\$								
FHWA Noise Model 0										
	REMEL	Traffic Flow	Distar	nce	Finite	Road	Fresnel	Barrier Atte	en Be	rm Atten
		Traffic Flow		nce 0.01		Road -1.20	Fresnel -4.6		en Be	
VehicleType	REMEL	Traffic Flow 0.57			7			7 0.0		0.00
VehicleType Autos:	REMEL 68.46	Traffic Flow 0.57 -15.72		0.07	7 9	-1.20	-4.6	7 0.0 7 0.0	000	0.000
VehicleType Autos: Medium Trucks:	REMEL 68.46 79.45 84.25	Traffic Flow 0.57 -15.72 -12.20		0.03	7 9 9	-1.20 -1.20	-4.6 -4.8	7 0.0 7 0.0	000	0.000
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise L	REMEL 68.46 79.45 84.25	Traffic Flow 0.57 -15.72 -12.20 out Topo and	barrier a	0.03 0.09 0.09	7 9 9 uation) vening	-1.20 -1.20 -1.20	-4.6 -4.8	7 0.0 17 0.0 18 0.0 Ldn	000 000 000	0.000 0.000 0.000
Vehicle Type Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise L Vehicle Type Autos:	REMEL 68.46 79.45 84.25 evels (with eq Peak Hou 67	Traffic Flow 0.57 -15.72 -12.20 out Topo and Ir Leq Day 7.9	barrier a / L 66.0	0.03 0.09 0.09	7 9 9 <i>uation)</i> <i>vening</i> 64.2	-1.20 -1.20 -1.20	-4.6 -4.8 -5.3 Night 58.2	7 0.0 7 0.0 88 0.0 <u>Ldn</u> 66.8	000 000 000 000	0.00 0.00 0.00 0.00
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise L VehicleType Lee	REMEL 68.46 79.45 84.25 evels (with eq Peak Hou 67	Traffic Flow 0.57 -15.72 -12.20 out Topo and Ir Leq Day 7.9	barrier a	0.03 0.09 0.09	7 9 9 <i>uation)</i> <i>vening</i> 64.2 54.7	-1.20 -1.20 -1.20	-4.6 -4.8 -5.3 Night 58.2 53.2	7 0.0 17 0.0 18 0.0 Ldn	000 000 000 000	0.00 0.00 0.00 0.00
Vehicle Type Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise L Vehicle Type Autos:	REMEL 68.46 79.45 84.25 evels (with eq Peak Hou 67 62	Traffic Flow 0.57 -15.72 -12.20 out Topo and ur Leq Day 7.9 2.6	barrier a / L 66.0	0.03 0.09 0.09	7 9 9 <i>uation)</i> <i>vening</i> 64.2	-1.20 -1.20 -1.20	-4.6 -4.8 -5.3 Night 58.2	7 0.0 7 0.0 88 0.0 <u>Ldn</u> 66.8	000 000 000 000 000	0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise L VehicleType Autos: Medium Trucks:	REMEL 68.46 79.45 84.25 evels (with of Peak Hou 67 62 70	Traffic Flow 0.57 -15.72 -12.20 out Topo and ur Leq Day 7.9 2.6 0.9	<i>barrier a</i> / <i>L</i> 66.0 61.1	0.03 0.09 0.09	7 9 9 <i>uation)</i> <i>vening</i> 64.2 54.7	-1.20 -1.20 -1.20	-4.6 -4.8 -5.3 Night 58.2 53.2	7 0.0 7 0.0 8 0.0 <u>Ldn</u> 66.8 61.7	000 000 000 000 000 000	0.000 0.000 0.000 CNEL 67.4 61.9 70.2
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise L VehicleType Autos: Medium Trucks: Heavy Trucks.	REMEL 68.46 79.45 84.25 evels (with eq Peak Hou 67 62 70 73	Traffic Flow 0.57 -15.72 -12.20 Out Topo and ur Leq Day 2.9 2.6 0.9 3.1	<i>barrier a</i> 66.0 61.1 69.5 71.5	0.07 0.09 0.09 attent eq Ev	7 9 9 9 64.2 54.7 60.5 66.1	-1.20 -1.20 -1.20 <i>Leq</i>	-4.6 -4.8 -5.3 Night 58.2 53.2 61.7 63.7	77 0.0 77 0.0 18 0.0 18 0.0 18 0.0 18 0.0 18 0.0 17 0.1 17 0.1 17 0.1	000 000 000 3 7 1 2	0.000 0.000 ENEL 67.4 61.9 70.2 72.4
Vehicle Type Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise L. Vehicle Type Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	REMEL 68.46 79.45 84.25 evels (with eq Peak Hou 67 62 70 73	Traffic Flow 0.57 -15.72 -12.20 out Topo and ur Leq Day 2.6 0.9 3.1 ontour (in feet)	barrier a / L 66.0 61.1 69.5 71.5	0.03 0.09 0.09	7 9 9 <u>vening</u> 64.2 54.7 60.5 66.1	-1.20 -1.20 -1.20 <i>Leq</i>	-4.6 -4.8 -5.3 Night 58.2 53.2 61.7 63.7 dBA	77 0.0 77 0.0 18 0.0 18 0.0 10 10 10 17 10 17 10 10 10 10 10 10 10 10 10 10 10 10 10	000 000 000 000 2 2 58	0.000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.000000
Vehicle Type Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise L Vehicle Type Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	REMEL 68.46 79.45 84.25 evels (with eq Peak Hou 67 62 70 73	Traffic Flow 0.57 -15.72 -12.20 out Topo and r Leq Day 2.6 0.9 3.1 pontour (in feet)	<i>barrier a</i> 66.0 61.1 69.5 71.5	0.07 0.09 0.09 attent eq Ev	7 9 9 9 64.2 54.7 60.5 66.1	-1.20 -1.20 -1.20 <i>Leq</i>	-4.6 -4.8 -5.3 Night 58.2 53.2 61.7 63.7	77 0.0 77 0.0 18 0.0 18 0.0 18 0.0 18 0.0 18 0.0 17 0.0 17 0.1 17 0.1	000 000 000 2 2 55	0.000 0.000 2.NEL 67.4 61.9 70.2 72.4

FHWA-RD-77-108 HIGHWAY	ISE PREDICTIO	ON MODEL (9/12/2021)	
Scenario: 2029 Road Name: S. H St. Road Segment: n/o Panama Ln.		oject Name: Majestic Ga ob Number: 13923	leway
SITE SPECIFIC INPUT DATA		NOISE MODEL IN	
Highway Data	Site Condition	ons (Hard = 10, Soft = 1	5)
Average Daily Traffic (Adt): 16,877 vehicles		Autos: 15	5
Peak Hour Percentage: 10.00%	Mediur	n Trucks (2 Axles): 15	i i
Peak Hour Volume: 1,688 vehicles	Heavy	Trucks (3+ Axles): 15	i i
Vehicle Speed: 45 mph	Vehicle Mix		-
Near/Far Lane Distance: 52 feet	Vehicle	Type Day Ever	ning Night Daily
Site Data			2.9% 9.6% 91.81%
Barrier Height: 0.0 feet	Mediu	m Trucks: 84.8% 4	.9% 10.3% 2.52%
Barrier Type (0-Wall, 1-Berm): 0.0	Hear	vy Trucks: 86.5% 2	2.7% 10.8% 5.67%
Centerline Dist. to Barrier: 55.0 feet	Noine Onine	- Fl	
Centerline Dist. to Observer: 55.0 feet		e Elevations (in feet)	
Barrier Distance to Observer: 0.0 feet	Medium Ti		
Observer Height (Above Pad): 5.0 feet	Heavy Ti		le Adjustment: 0.0
Pad Elevation: 0.0 feet	neavy II	TUCKS. 0.004 GIAU	e Aujustinent. 0.0
Road Elevation: 0.0 feet	Lane Equiva	alent Distance (in feet)	
Road Grade: 0.0%	A	Autos: 48.724	
Left View: -90.0 degrees	Medium Ti	rucks: 48.542	
Right View: 90.0 degrees	Heavy Ti	rucks: 48.559	
FHWA Noise Model Calculations			
VehicleType REMEL Traffic Flow Dis			er Atten Berm Atten
Autos: 68.46 0.06		.20 -4.67	0.000 0.000
Medium Trucks: 79.45 -15.55		.20 -4.87	0.000 0.000
Heavy Trucks: 84.25 -12.03	0.09 -1	.20 -5.38	0.000 0.000
Unmitigated Noise Levels (without Topo and barrie	ttenuation)		
VehicleType Leq Peak Hour Leq Day		Leq Night Ldn	CNEL
Autos: 67.4 65.5	63.7	57.7	66.3 66.9
Medium Trucks: 62.8 61.3	54.9	53.4	61.8 62.1
Heavy Trucks: 71.1 69.7	60.7	61.9	70.3 70.4
Vehicle Noise: 73.1 71.5	65.8	63.7	72.1 72.4
Centerline Distance to Noise Contour (in feet)			
	70 dBA	65 dBA 60 dBA	
Ldn: CNEL:	76 80	165	355 765 370 797
		172	

	FHWA-RD-	77-108 HIGHWA	Y NOISE	PREDIC	TION MO	DDEL (S	9/12/20)21)				
Scenario: 2	029+P				Project I	Vame: I	∕lajesti	c Gateway	/			
Road Name: S	6. H St.				Job Nu	mber: 1	3923					
Road Segment: r	/o Panama I	_n.										
	CIFIC INP	UT DATA		NOISE MODEL INPUTS Site Conditions (Hard = 10, Soft = 15)								
Highway Data				Site Con	ditions (Hard =	10, So	ft = 15)				
Average Daily Trat	fic (Adt): 1	9,398 vehicles					Autos:	15				
Peak Hour Per	centage: 1	0.00%		Me	dium Tru	cks (2 A	xles):	15				
Peak Hour	Volume: 1	,940 vehicles		He	avy Truci	ks (3+ A	xles):	15				
Vehicle	e Speed:	45 mph		Vehicle I	Mix							
Near/Far Lane D	Distance:	52 feet	F		icleType		Dav	Evening	Night	Daily		
Site Data						utos:	77.5%		9.6%			
Barrier	Height:	0.0 feet		М	edium Tru	icks:	84.8%	4.9%	10.3%	2.199		
Barrier Type (0-Wall,		0.0		I	leavy Tru	icks:	86.5%	2.7%	10.8%	4.93		
Centerline Dist. to	,	55.0 feet	H	N 0.			. <i>(i.e. f.</i> -	- 41				
Centerline Dist. to C	bserver:	55.0 feet	-	voise so	ource Ele			et)				
Barrier Distance to C	bserver:	0.0 feet			Autos m Trucks		000					
Observer Height (Abo	ve Pad):	5.0 feet					297	Crada Ad	iuotmont			
Pad E	levation:	0.0 feet		Heav	y Trucks	8.0	004	Grade Ad	usuneni	0.0		
Road E	levation:	0.0 feet	1	Lane Eq	uivalent	Distand	e (in f	ieet)				
Roa	d Grade:	0.0%			Autos	48.	724					
L	eft View:	-90.0 degrees		Mediu	m Trucks	48.	542					
Rig	ht View:	90.0 degrees		Heav	y Trucks	48.	559					
FHWA Noise Model C	alculations											
			listance	Finite		Fresn		Barrier Att		m Atten		
Autos:	68.46	0.72	0.0		-1.20		-4.67		000	0.00		
Medium Trucks:	79.45	-15.55	0.0		-1.20		-4.87		000	0.00		
Heavy Trucks:	84.25	-12.03	0.0	9	-1.20		-5.38	0.0	000	0.00		
Unmitigated Noise Le			1									
	Peak Hour	Leq Day	Leg E		Leq N			Ldn		VEL		
Autos:	68.0			64.4		58.3		66.9		67.		
Medium Trucks:	62.8			54.9		53.4		61.8		62		
Heavy Trucks:	71.1			60.7		61.9		70.3		70		
Vehicle Noise:	73.3	71.7	, 	66.2		63.9		72.3	3	72		
Centerline Distance to	Noise Con	tour (in feet)	70							(8.4		
			70 0		65 d		6	0 dBA		dBA		
		Ldn		79		169		365		78		
		CNEL		82		177		381		82		

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FHWA-F	RD-77-108 HIGHWA	Y NOISE		ION MOD	EL (9/12/2	2021)		
Scenario: 2042 Road Name: S. H St. Road Segment: n/o Panar	na Ln.		I		me: Majes ber: 13923	tic Gateway		
SITE SPECIFIC I	NPUT DATA					EL INPUTS		
Highway Data			Site Cond	itions (Ha	rd = 10, S	oft = 15)		
Average Daily Traffic (Adt):	19,157 vehicles				Autos	: 15		
Peak Hour Percentage:	10.00%		Med	ium Trucks	s (2 Axles)	: 15		
Peak Hour Volume:	1,916 vehicles		Hea	vy Trucks	(3+ Axles)	: 15		
Vehicle Speed:	45 mph	-	Vehicle M	ix				
Near/Far Lane Distance:	52 feet	-		leType	Day	Evening	Night [Daily
Site Data				Auto	s: 77.59	% 12.9%	9.6% 9	1.819
Barrier Height:	0.0 feet		Med	dium Truck	s: 84.89	% 4.9%	10.3%	2.52%
Barrier Type (0-Wall, 1-Berm):	0.0		He	eavy Truck	s: 86.5	% 2.7%	10.8%	5.67%
Centerline Dist. to Barrier:	55.0 feet	-	Noise Sou	irce Eleva	tions (in t	feet)		
Centerline Dist. to Observer:	55.0 feet	-	110100 000	Autos:	0.000	000		
Barrier Distance to Observer:	0.0 feet		Medium	Trucks:	2.297			
Observer Height (Above Pad):	5.0 feet			Trucks:	8.004	Grade Adju	stment: 0	0
Pad Elevation:	0.0 feet							-
Road Elevation:	0.0 feet	_	Lane Equ			feet)		
Road Grade:	0.0%			Autos:	48.724			
Left View:	-90.0 degrees			Trucks:	48.542			
Right View:	90.0 degrees		Heavy	Trucks:	48.559			
FHWA Noise Model Calculatio	ns							
VehicleType REMEL	Traffic Flow D	listance	Finite F	Road F	resnel	Barrier Atte	n Berm /	Atten
Autos: 68.4		0.0		-1.20	-4.67			0.00
Medium Trucks: 79.4		0.0		-1.20	-4.87			0.00
Heavy Trucks: 84.2	5 -11.48	0.0)9	-1.20	-5.38	0.00	00	0.00
Unmitigated Noise Levels (wit	hout Topo and barr	rier atter	nuation)					
VehicleType Leq Peak Ho			vening	Leq Nigi		Ldn	CNE	
	7.9 66.0		64.3		58.2	66.8		67.4
	3.3 61.8		55.5		53.9	62.4		62.
	1.7 70.2		61.2		62.5	70.8		70.
Vehicle Noise: 7	3.6 72.1		66.4		64.3	72.7		73.
Centerline Distance to Noise (Contour (in feet)							
			dBA	65 dBA		60 dBA	55 dB	
			83		179	386		832
	Ldn: CNEL:		83		187	402		867

	FHWA-RI	0-77-108 HIGH	WAY NC	ISE PRE		10DEL (9)	/12/20	21)		
Road Nam	io: 2042+P e: S. H St. nt: n/o Panama	a Ln.				Name: M lumber: 1		c Gateway	'	
SITE	SPECIFIC IN	IPUT DATA						L INPUTS	5	
Highway Data				Site C	onditions	(Hard = 1	0, So	ft = 15)		
Average Daily	Traffic (Adt):	21,678 vehicle	es			A	utos:	15		
Peak Hour	Percentage:	10.00%			Medium Tr	ucks (2 A)	kles):	15		
Peak H	our Volume:	2,168 vehicle	6		Heavy Tru	cks (3+ A)	kles):	15		
Ve	hicle Speed:	45 mph		Vehic	le Mix					
Near/Far La	ne Distance:	52 feet			ehicleType	. [Day	Evening	Night	Daily
Site Data				-			7.5%	12.9%	9.6%	
Ba	rier Heiaht:	0.0 feet			Medium T	rucks: 8	84.8%	4.9%	10.3%	2.23%
Barrier Type (0-W		0.0			Heavy T	rucks: 8	86.5%	2.7%	10.8%	5.01%
Centerline Di	. ,	55.0 feet		Noise	Source E	lovations	(in fo	of)		
Centerline Dist.	to Observer:	55.0 feet		110/30	Auto			01/		
Barrier Distance	to Observer:	0.0 feet		Me	dium Truck	0.0				
Observer Height (Above Pad):	5.0 feet			eavy Truck	•••		Grade Adj	iustment	: 0.0
	ad Elevation:	0.0 feet					• ·			
	ad Elevation:	0.0 feet		Lane	Equivalen			eet)		
	Road Grade:	0.0%			Auto					
	Left View:	-90.0 degree			dium Truck	- 10.0				
	Right View:	90.0 degre	es	н	eavy Truck	s: 48.5	59			
FHWA Noise Mode	el Calculation	s								
VehicleType	REMEL	Traffic Flow	Distan	ce Fir	ite Road	Fresne	e/ 1	Barrier Atte	en Ber	m Atten
Autos:	68.46	1.20		0.07	-1.20	-	4.67	0.0	000	0.00
Medium Trucks:	79.45	-15.00		0.09	-1.20		4.87	0.0		0.00
Heavy Trucks:	84.25	-11.48		0.09	-1.20	-	5.38	0.0	000	0.00
Unmitigated Noise	e Levels (with	out Topo and	barrier a	ttenuatio	n)					
	Leq Peak Hou			q Evening		Night		Ldn		NEL
VehicleType		5	66.6		1.9	58.8		67.4		68.
Autos:	68					53.9		62.4	1	62.
Autos: Medium Trucks:	63	.3	61.8	-	5.5					
Autos: Medium Trucks: Heavy Trucks:	63 71	.3 .7	70.2	6	1.2	62.5		70.8		
Autos: Medium Trucks:	63	.3 .7		6						
Autos: Medium Trucks: Heavy Trucks:	63 71 73	.3 .7 .8	70.2 72.2	6	1.2 3.7	62.5 64.4		70.8)	73.
Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	63 71 73	.3 .7 .8 ontour (in feet	70.2 72.2	6 6 70 dBA	65	62.5 64.4 dBA	6	70.8 72.9 0 dBA	55	73. dBA
Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	63 71 73	.3 .7 .8 ontour (in feet	70.2 72.2	6 6 70 dBA	1.2 3.7	62.5 64.4	6	70.8	55	70.9 73.1 dBA 853 890

	FHWA-RD	-77-108 HIGH	WAY NO	ISE PREDIO	CTION M	ODEL (9)/12/20	021)		
Scenario Road Name Road Segmen	e: S. H St.	Ln.				Name: N umber: 1		ic Gateway		
SITE S	SPECIFIC IN	PUT DATA						L INPUTS	6	
Highway Data				Site Con	nditions	(Hard =	10, Sc	oft = 15)		
Average Daily 1	Traffic (Adt):	8,958 vehicle	es			A	Autos:	15		
Peak Hour I	Percentage:	10.00%		Me	edium Tri	icks (2 A	xles):	15		
Peak Ho	our Volume:	896 vehicle	5	He	eavy Truc	:ks (3+ A	xles):	15		
Veh	nicle Speed:	50 mph		Vehicle	Mix					
Near/Far Lan	e Distance:	52 feet			nicleType		Dav	Evening	Niaht	Daily
Site Data							77.5%	•	9.6%	91.81%
	rier Heiaht:	0.0 feet		м	Iedium Ti	ucks:	84.8%		10.3%	2.52%
Barrier Type (0-Wa		0.0			Heavy Ti	ucks:	86.5%	2.7%	10.8%	5.67%
Centerline Dis		55.0 feet								
Centerline Dist. t		55.0 feet		Noise Se				eet)		
Barrier Distance t		0.0 feet			Auto					
Observer Height (A	Above Pad):	5.0 feet			m Truck					
• •	d Elevation:	0.0 feet		Hea	vy Truck	s: 8.0	004	Grade Adj	ustment.	0.0
Roa	d Elevation:	0.0 feet		Lane Eq	uivalent	Distanc	e (in i	feet)		
R	Road Grade:	0.0%			Auto	s: 48.7	724			
	Left View:	-90.0 degree	es	Mediu	m Truck	s: 48.5	542			
	Right View:	90.0 degree	es	Hea	vy Truck	s: 48.5	559			
FHWA Noise Mode	I Calculations	1								
VehicleType	REMEL	Traffic Flow	Distan	ce Finite	Road	Fresne	el	Barrier Atte	en Ber	m Atten
Autos:	70.20	-3.14		0.07	-1.20		-4.67	0.0		0.000
Medium Trucks:	81.00	-18.76		0.09	-1.20		-4.87	0.0		0.000
Heavy Trucks:	85.38	-15.24		0.09	-1.20		-5.38	0.0	00	0.000
Unmitigated Noise	Levels (witho	ut Topo and	barrier a	ttenuation)						
	Leq Peak Hour			q Evening		Night		Ldn		VEL
Autos:	65.	-	64.0	62.3		56.2		64.8		65.4
Medium Trucks:	61.		59.6	53.3		51.7		60.2		60.4
Heavy Trucks:	69.	-	67.6	58.6		59.8		68.2		68.3
Vehicle Noise:	71.	2	69.6	64.2		61.8		70.3		70.6
		ntour (in feet)						I	
Centerline Distance	e to Noise Co	ntour (ni leet,								
Centerline Distance	e to Noise Col			70 dBA	65	dBA	6	60 dBA	55	dBA
Centerline Distance	e to Noise Col		Ldn: VEL:	70 dBA 57 60	65	dBA 124 129	6	0 dBA 266 278	55	dBA 574 599

	FHWA-RD	-77-108 HIGH	WAY	NOISE F	PREDIC	TION N	IODEL (9/12/20	021)		
Scenario:									ic Gateway	/	
Road Name:						Job N	lumber:	13923			
Road Segment:	s/o Panama	Ln.									
SITE SP	ECIFIC IN	PUT DATA							L INPUT	s	
Highway Data				S	ite Cond	litions	(Hard =	10, Sc	oft = 15)		
Average Daily Tra	affic (Adt):	14,220 vehicle	s					Autos:	15		
Peak Hour Pe	rcentage:	10.00%			Med	lium Tr	ucks (2)	Axles):	15		
Peak Hou	r Volume:	1,422 vehicles	6		Hea	avy Tru	cks (3+)	Axles):	15		
Vehic	le Speed:	50 mph		V	ehicle N	lix					
Near/Far Lane	Distance:	52 feet		-		cleType		Dav	Evening	Night	Daily
Site Data							Autos:	77.5%		9.6%	
Barrie	er Height:	0.0 feet			Me	dium T	rucks:	84.8%	4.9%	10.3%	1.599
Barrier Type (0-Wall,	•	0.0			н	leavy T	rucks:	86.5%	2.7%	10.8%	3.579
Centerline Dist.		55.0 feet						- (41		
Centerline Dist. to	Observer:	55.0 feet		~	oise So				eet)		
Barrier Distance to	Observer:	0.0 feet			Mediun	Auto		000 297			
Observer Height (Ab	ove Pad):	5.0 feet				/ Truck		297 004	Grade Ad	iustmont	0.0
Pad	Elevation:	0.0 feet			neav	/ TTUCK	s. o.	004	Graue Au	usuneni	0.0
Road Elevation: 0.0 feet					ane Equ	ivalen	t Distan	ce (in i	feet)		
Road Grade: 0.0%						Auto	s: 48.	724			
	Left View:	-90.0 degree	s		Mediun			542			
R	ight View:	90.0 degree	es		Heavy	/ Truck	's: 48.	559			
FHWA Noise Model (
	REMEL	Traffic Flow	Dis	tance	Finite I		Fresr		Barrier Att		m Atten
Autos:	70.20	-1.00		0.07		-1.20		-4.67		000	0.00
Medium Trucks:	81.00	-18.76		0.09		-1.20		-4.87		000	0.00
Heavy Trucks:	85.38	-15.24		0.09		-1.20		-5.38	0.0	000	0.00
Unmitigated Noise L			barrie	er attenu	ation)						
	q Peak Hou			Leq Eve		Leq	Night		Ldn		VEL
Autos:	68.		66.2		64.4		58.4		67.0		67.
Medium Trucks:	61.		59.6		53.3		51.		60.2		60.
Heavy Trucks: Vehicle Noise:	69. 72.	-	67.6 70.3		58.6		59.I	-	68.2		68.
					65.7		62.3	D	71.0	J	71.
Centerline Distance	to Noise Co	ntour (in feet))	70 //				1			(8.4
			Ldn:	70 dl		65	dBA		60 dBA		dBA
			VEL:		64 67		138 145		298 313		64
			VEL:				145		313		675

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FHWA-F	2D-77-108 HIGHW	AY NOIS	E PREDIC	TION M	ODEL (9/1	12/2021)					
Scenario: 2024 Road Name: S. H St. Road Segment: s/o Panar	na Ln.		Project Name: Majestic Gateway Job Number: 13923								
SITE SPECIFIC I	NPUT DATA					DEL INPU	гs				
Highway Data			Site Con	ditions	(Hard = 10), Soft = 15)					
Average Daily Traffic (Adt):	10,556 vehicles				Au	tos: 15					
Peak Hour Percentage:	10.00%		Me	dium Tru	icks (2 Axi	les): 15					
Peak Hour Volume:	1,056 vehicles		He	avy Truc	:ks (3+ Axi	les): 15					
Vehicle Speed:	50 mph		Vehicle I	Mix							
Near/Far Lane Distance:	52 feet			icleType	Di	ay Evening	Night	Daily			
Site Data					utos: 71	7.5% 12.9%					
Barrier Height:	0.0 feet		Me	edium Tr	ucks: 84	4.8% 4.9%	10.3%	2.52%			
Barrier Type (0-Wall, 1-Berm):	0.0		F	leavy Tr	ucks: 86	6.5% 2.7%	10.8%	5.67%			
Centerline Dist. to Barrier:	55.0 feet		Noiso Se	urco El	evations (in foot)					
Centerline Dist. to Observer:	55.0 feet		NUISE 30	Autos							
Barrier Distance to Observer:	0.0 feet		Madiu	n Trucks	0.00	-					
Observer Height (Above Pad):	5.0 feet			v Trucks			djustmen	H 0.0			
Pad Elevation:	0.0 feet		Tieav	y mucka	5. 0.00	4 0/000/1	ajaoanom	0.0			
Road Elevation:	0.0 feet		Lane Equ	uivalent	Distance	(in feet)					
Road Grade:	0.0%			Autos		-					
Left View:	-90.0 degrees			n Trucks		2					
Right View:	90.0 degrees		Heav	y Trucks	s: 48.55	9					
FHWA Noise Model Calculatio	ns		1								
VehicleType REMEL	Traffic Flow	Distance	Finite	Road	Fresnel	Barrier A	tten Be	rm Atten			
Autos: 70.2	0 -2.43	0	.07	-1.20	-4	.67 0	.000	0.00			
Medium Trucks: 81.0	0 -18.05	0	.09	-1.20	-4	.87 0	.000	0.00			
Heavy Trucks: 85.3	8 -14.52	0	.09	-1.20	-5	.38 0	.000	0.00			
Unmitigated Noise Levels (wit	hout Topo and ba	rrier atte	enuation)								
VehicleType Leq Peak Ho			Evening	Leq	Night	Ldn		NEL			
	6.6 64		63.0		56.9	65		66.			
	1.8 60		54.0		52.4	60		61.			
	9.7 68		59.3		60.5	68		69.			
Vehicle Noise: 7	1.9 70	.4	64.9		62.5	71	.0	71.3			
Centerline Distance to Noise (Contour (in feet)	1									
							55	i dBA			
			0 dBA	65 0		60 dBA					
	Ld CNE	n:	0 dBA 64 67	65 0	138 144	60 dBA 29 31	7	640 668			

FHWA-RD-77-108		SE PREDIC	TION MODEL (9/12/2021)	
Scenario: 2024+P Road Name: S. H St. Road Segment: s/o Panama Ln.			Project Name: N Job Number: 1		у
SITE SPECIFIC INPUT DA	TA			IODEL INPUT	s
Highway Data		Site Cond	litions (Hard =	10, Soft = 15)	
Average Daily Traffic (Adt): 15,818 v	ehicles		/	Autos: 15	
Peak Hour Percentage: 10.00%		Med	lium Trucks (2 A	xles): 15	
Peak Hour Volume: 1,582 ve	hicles	Hea	avy Trucks (3+ A	<i>xles):</i> 15	
Vehicle Speed: 50 m	bh	Vehicle M	lix		
Near/Far Lane Distance: 52 fe	et			Day Evening	Night Daily
Site Data			Autos:	77.5% 12.9%	9.6% 94.54%
Barrier Height: 0.0 fe	et	Me	dium Trucks:	84.8% 4.9%	10.3% 1.68%
Barrier Type (0-Wall, 1-Berm): 0.0		н	leavy Trucks:	86.5% 2.7%	10.8% 3.78%
Centerline Dist. to Barrier: 55.0 fe	et	Noise So	urce Elevations	(in foot)	
Centerline Dist. to Observer: 55.0 fe	et			000	
Barrier Distance to Observer: 0.0 fe	et	Madium	0.0	297	
Observer Height (Above Pad): 5.0 fe	eet				djustment: 0.0
Pad Elevation: 0.0 fe	eet				
Road Elevation: 0.0 fe	et	Lane Equ	ivalent Distanc	, ,	
Road Grade: 0.0%			Autos: 48.7		
Left View: -90.0 d	5		n Trucks: 48.5		
Right View: 90.0 d	egrees	Heavy	Trucks: 48.5	559	
FHWA Noise Model Calculations					
VehicleType REMEL Traffic F	low Distanc	e Finite I	Road Fresn	el Barrier At	ten Berm Atten
Autos: 70.20 -	0.55	0.07	-1.20	-4.67 0.	000 0.000
Medium Trucks: 81.00 -1	8.05	0.09	-1.20	-4.87 0.	000 0.000
Heavy Trucks: 85.38 -1	4.52	0.09	-1.20	-5.38 0.	000 0.000
Unmitigated Noise Levels (without Topo	and barrier at	tenuation)			
		q Evening	Leq Night	Ldn	CNEL
Autos: 68.5	66.6	64.9	58.8		
Medium Trucks: 61.8	60.3	54.0	52.4		
	68.3	59.3	60.5		
Heavy Trucks: 69.7				71.	6 71.9
Vehicle Noise: 72.6	71.0	66.2	63.1		
Vehicle Noise: 72.6	71.0				
Vehicle Noise: 72.6	71.0 feet)	70 dBA	65 dBA	60 dBA	55 dBA
	71.0				7 704

Monday, November 8, 2021

FHWA-RD-77-108 HIGHWAY N	DISE PREDICTION MODEL (9/12/2021)
Scenario: 2029 Road Name: S. H St. Road Segment: s/o Panama Ln.	Project Name: Majestic Gateway Job Number: 13923
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS
Highway Data	Site Conditions (Hard = 10, Soft = 15)
Average Daily Traffic (Adt): 10,850 vehicles	Autos: 15
Peak Hour Percentage: 10.00%	Medium Trucks (2 Axles): 15
Peak Hour Volume: 1,085 vehicles	Heavy Trucks (3+ Axles): 15
Vehicle Speed: 50 mph	Vehicle Mix
Near/Far Lane Distance: 52 feet	VehicleType Day Evening Night Daily
Site Data	Autos: 77.5% 12.9% 9.6% 91.81%
Barrier Height: 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 2.52%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 5.67%
Centerline Dist. to Barrier: 55.0 feet	
Centerline Dist. to Observer: 55.0 feet	Noise Source Elevations (in feet)
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: 8.004 Grade Adjustment: 0.0
Road Elevation: 0.0 feet	Lane Equivalent Distance (in feet)
Road Grade: 0.0%	Autos: 48.724
Left View: -90.0 degrees	Medium Trucks: 48.542
Right View: 90.0 degrees	Heavy Trucks: 48.559
FHWA Noise Model Calculations	
VehicleType REMEL Traffic Flow Dista	ce Finite Road Fresnel Barrier Atten Berm Atten
Autos: 70.20 -2.31	0.07 -1.20 -4.67 0.000 0.00
Medium Trucks: 81.00 -17.93	0.09 -1.20 -4.87 0.000 0.00
Heavy Trucks: 85.38 -14.41	0.09 -1.20 -5.38 0.000 0.00
Unmitigated Noise Levels (without Topo and barrier	ttenuation)
	eq Evening Leq Night Ldn CNEL
Autos: 66.8 64.9	63.1 57.0 65.7 66.
Medium Trucks: 62.0 60.5	54.1 52.5 61.0 61.
Heavy Trucks: 69.9 68.4	59.4 60.7 69.0 69.
Vehicle Noise: 72.0 70.5	65.0 62.7 71.1 71.
Centerline Distance to Noise Contour (in feet)	
	70 dBA 65 dBA 60 dBA 55 dBA
Ldn:	65 140 302 652
CNEL	68 147 316 680

	FHWA-RD	-77-108 HIGH	WAY	NOISE	PREDICT		IODEL (9/12/2	021)					
Scenario. Road Name Road Segment	S. H St.	Ln.			Project Name: Majestic Gateway Job Number: 13923									
SITE S	PECIFIC IN	PUT DATA			NOISE MODEL INPUTS									
Highway Data				S	ite Cond	itions	(Hard =	10, Sc	oft = 15)					
Average Daily T	raffic (Adt):	16,112 vehicle	es					Autos:	15					
Peak Hour P	ercentage:	10.00%			Med	ium Tr	ucks (2)	Axles):	15					
Peak Ho	ur Volume:	1,611 vehicles	6		Hea	vy Tru	cks (3+)	Axles):	15					
Vehi	cle Speed:	50 mph		v	ehicle M	ix								
Near/Far Lane	e Distance:	52 feet		-		leTvpe		Dav	Evening	Night	Dailv			
Site Data						- //-	Autos:	77.5%		9.6%	94.49			
Barri	ier Height:	0.0 feet			Med	dium T	rucks:	84.8%	4.9%	10.3%	1.70			
Barrier Type (0-Wa		0.0			He	eavy T	rucks:	86.5%	2.7%	10.8%	3.829			
Centerline Dist.	. ,	55.0 feet			loise Sou			- 11- 4	41					
Centerline Dist. to	Observer:	55.0 feet		N	ioise sol	Auto		s (In re 000	eet)					
Barrier Distance to	Observer:	0.0 feet			Medium			000 297						
Observer Height (A	bove Pad):	5.0 feet			Heavy			297 004	Grade Ad	iustmont	0.0			
Pad	Elevation:	0.0 feet			neavy	TTUCK	s. o.	004	Grade Au	usuneni	0.0			
Road	Elevation:	0.0 feet		L	ane Equi	ivalen	t Distan	ce (in i	feet)					
R	oad Grade:	0.0%				Auto	s: 48.	724						
	Left View:	-90.0 degree	s		Medium			542						
1	Right View:	90.0 degree	es		Heavy	Truck	s: 48.	559						
FHWA Noise Model														
VehicleType		Traffic Flow	Dis	tance	Finite F		Fresr		Barrier Att		m Atten			
Autos:	70.20	-0.47		0.07		-1.20		-4.67		000	0.00			
Medium Trucks:	81.00	-17.93		0.09		-1.20		-4.87		000	0.00			
Heavy Trucks:	85.38	-14.41		0.09		-1.20		-5.38	0.0	000	0.00			
Unmitigated Noise								1		1				
	eq Peak Hour			Leq Ev		Leq	Night	_	Ldn		VEL			
Autos:	68.		66.7		64.9		58.9		67.		68			
Medium Trucks: Heavy Trucks:	62. 69.	-	60.5 68.4		54.1 59.4		52.5 60.7		61. 69.		61 69			
Vehicle Noise:	69. 72.		08.4 71.1		59.4 66.3		63.3		71.		72			
		-			00.5		00.0	,	71.		12			
Centerline Distance	to Noise Col	ntour (in feet)	1	70 d	BA	65	dBA	F	0 dBA	55	dBA			
			Ldn:	70 0	72	00	154		332		71			

Monday, November 8, 2021

FHWA-I	RD-77-108 HIGH	WAY NOI	SE PREDIO	TION M	ODEL (9/	12/2021)		
Scenario: 2042 Road Name: S. H St. Road Segment: s/o Panar	ma Ln.				Name: M umber: 13		Gateway		
SITE SPECIFIC	INPUT DATA				IOISE M				
Highway Data			Site Cor	ditions	(Hard = 1	0, Soft =	= 15)		
Average Daily Traffic (Adt):	11,875 vehicle	s			A	utos:	15		
Peak Hour Percentage:	10.00%		Me	dium Tri	ucks (2 Ax	(les):	15		
Peak Hour Volume:	1,188 vehicles	;	He	avy Tru	cks (3+ Ax	(les):	15		
Vehicle Speed:	50 mph		Vehicle	Mix					
Near/Far Lane Distance:	52 feet			icleType	D	ay E	vening N	light	Daily
Site Data							12.9%	•	91.819
Barrier Height:	0.0 feet		M	edium Ti	rucks: 8	4.8%	4.9%	10.3%	2.52%
Barrier Type (0-Wall, 1-Berm):				Heavy Ti	rucks: 8	6.5%	2.7%	10.8%	5.67%
Centerline Dist. to Barrier:	55.0 feet		Noise S	ource El	evations	(in foot)	1		
Centerline Dist. to Observer:	55.0 feet		10/30 00	Auto		. /			
Barrier Distance to Observer:	0.0 feet		Modiu	m Truck	0.00				
Observer Height (Above Pad):	5.0 feet			/y Truck			ade Adjus	tment (0.0
Pad Elevation:	0.0 feet								
Road Elevation:	0.0 feet		Lane Eq	uivalent	Distance	e (in fee	t)		
Road Grade:				Auto					
Left View:		s		m Truck					
Right View:	90.0 degree	s	Hear	/y Truck	s: 48.55	59			
FHWA Noise Model Calculatio	ns		1						
VehicleType REMEL	Traffic Flow	Distanc	e Finite	Road	Fresne	I Ba	rrier Atten	Berm	Atten
Autos: 70.2	0 -1.92		0.07	-1.20	-4	4.67	0.00	D	0.00
Medium Trucks: 81.0			0.09	-1.20		4.87	0.00	-	0.00
Heavy Trucks: 85.3	8 -14.01		0.09	-1.20	-{	5.38	0.00	D	0.00
Unmitigated Noise Levels (wit	hout Topo and I	barrier at	tenuation)						
VehicleType Leq Peak H			e Evening		Night	Lo		CNE	
		65.3	63.5		57.4		66.1		66.
		60.8	54.5		52.9		61.4		61.
		68.8	59.8		61.0		69.4		69.
Vehicle Noise:	72.4	70.9	65.4		63.1		71.5		71.
Centerline Distance to Noise	Contour (in feet)	1							
			70 dBA	65	dBA	60 c		55 di	
		Ldn:	69		149		321		692
		VEL:	72		156		335		722

	FHWA-RL	D-77-108 HIGH			FREDIC			1212	021)		
Scena	rio: 2042+P					Project	Name: N	/lajes	tic Gateway	/	
Road Nar	ne: S. H St.					Job N	umber: 1	3923			
Road Segme	ent: s/o Panama	a Ln.									
	SPECIFIC IN	IPUT DATA							L INPUT	s	
Highway Data				S	Site Cond	ditions	(Hard =	10, So	oft = 15)		
Average Daily	Traffic (Adt):	17,137 vehicl	es					Autos:	15		
Peak Hou	r Percentage:	10.00%			Med	dium Tru	icks (2 A	xles):	15		
Peak I	Hour Volume:	1,714 vehicle	S		Hea	avy Truc	:ks (3+ A	xles):	15		
Ve	ehicle Speed:	50 mph		v	/ehicle N	lix					
Near/Far La	ane Distance:	52 feet		F		cleType		Day	Evening	Night	Daily
Site Data					10/1			77.5%		9.6%	
		0.0 feet			Me	dium Ti		84.8%		10.3%	1.75%
	nrrier Height:	0.0 teet 0.0				leavy Ti		B6.5%		10.8%	
Barrier Type (0-V	ist. to Barrier:	0.0 55.0 feet								10.070	0.007
Centerline Dist		55.0 feet		۸	loise So	urce El	evations	; (in f	eet)		
Barrier Distance		0.0 feet				Autos	s: 0.0	000			
Observer Height		5.0 feet			Mediun	n Trucks	s: 2.2	97			
•	(ADOVE Pau). Pad Elevation:	0.0 feet			Heav	y Trucks	s: 8.0	04	Grade Ad	iustment	0.0
	ad Elevation:	0.0 feet		1	ane Equ	vivalent	Distanc	e (in	feet)		
110	Road Grade:	0.0%		F		Auto					
	Left View:	-90.0 degre			Mediur	n Truck					
	Right View:	90.0 degre			Heav	v Truck					
	rught thom.	50.0 degre				,		.00			
FHWA Noise Mod	lel Calculation	-									
											m Atten
VehicleType	REMEL	Traffic Flow	Distar		Finite		Fresn		Barrier Att		
Autos	70.20	-0.21	Distar	0.07	7	-1.20		4.67	0.0	000	0.00
Autos: Medium Trucks:	70.20 81.00	-0.21 -17.54	Distar	0.07	7	-1.20 -1.20		-4.67 -4.87	0.0	000	0.00
Autos	70.20 81.00	-0.21	Distar	0.07	7	-1.20		4.67	0.0	000	0.00
Autos: Medium Trucks: Heavy Trucks:	70.20 81.00 85.38	-0.21 -17.54 -14.01		0.07	7 9 9	-1.20 -1.20		-4.67 -4.87	0.0	000	0.000
Autos: Medium Trucks: Heavy Trucks:	70.20 81.00 85.38	-0.21 -17.54 -14.01 out Topo and	barrier a	0.07 0.09 0.09 attent	7 9 9 uation) vening	-1.20 -1.20 -1.20	Night	-4.67 -4.87	0.0 0.0 0.0	000 000 000 Ci	0.00 0.00 0.00
Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos:	70.20 81.00 85.38 e Levels (with Leq Peak Hou 68	-0.21 -17.54 -14.01 out Topo and r Leq Daj .9	barrier a	0.07 0.09 0.09 attent	7 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	-1.20 -1.20 -1.20	Night 59.1	-4.67 -4.87 -5.38	0.0 0.0 0.0 <i>Ldn</i> 67.8	000 000 000 C/	0.00 0.00 0.00 VEL 68.
Autos: Medium Trucks: Heavy Trucks: Jnmitigated Nois VehicleType Autos: Medium Trucks:	70.20 81.00 85.38 e Levels (with Leg Peak Hou 68 62	-0.21 -17.54 -14.01 out Topo and ir Leq Day .9 .4	<i>barrier a</i> / L 67.0 60.8	0.07 0.09 0.09 attent	7 2) 2) 2) 2) 2) 2) 2) 2) 2) 2) 2) 2) 2)	-1.20 -1.20 -1.20	Night 59.1 52.9	-4.67 -4.87 -5.38	0.0 0.0 0.0 <u>Ldn</u> 67.8 61.4	000 000 000 C/ 3 4	0.000 0.000 0.000 VEL 68.4
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noiss VehicleType Autos: Medium Trucks: Heavy Trucks:	70.20 81.00 85.38 e Levels (with Leg Peak Hou 68 62 70	-0.21 -17.54 -14.01 out Topo and rr Leq Day .9 .4 .3	barrier a / L0 67.0 60.8 68.8	0.07 0.09 0.09 attent	7 29 29 29 20 20 20 20 20 20 20 20 20 20 20 20 20	-1.20 -1.20 -1.20	Night 59.1 52.9 61.0	-4.67 -4.87 -5.38	0.0 0.0 0.0 <u>Ldn</u> 67.8 61.4 69.4	000 000 000 C/ 3 4	0.000 0.000 0.000 VEL 68.4 61.6 69.5
Autos: Medium Trucks: Heavy Trucks: Jnmitigated Nois VehicleType Autos: Medium Trucks:	70.20 81.00 85.38 e Levels (with Leg Peak Hou 68 62 70	-0.21 -17.54 -14.01 out Topo and rr Leq Day .9 .4 .3	<i>barrier a</i> / L 67.0 60.8	0.07 0.09 0.09 attent	7 2) 2) 2) 2) 2) 2) 2) 2) 2) 2) 2) 2) 2)	-1.20 -1.20 -1.20	Night 59.1 52.9	-4.67 -4.87 -5.38	0.0 0.0 0.0 0.0 67.8 61.4	000 000 000 C/ 3 4	0.00 0.00 0.00 VEL 68. 61. 69.
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noiss VehicleType Autos: Medium Trucks: Heavy Trucks:	70.20 81.00 85.38 e Levels (with Leg Peak Hou 68 62 70 73	-0.21 -17.54 -14.01 out Topo and ir Leg Day .9 .4 .3 .0	barrier a / L0 67.0 60.8 68.8 71.4	0.07 0.09 0.09 attent	7 29 29 29 20 20 20 20 20 20 20 20 20 20 20 20 20	-1.20 -1.20 -1.20	Night 59.1 52.9 61.0	-4.67 -4.87 -5.38	0.0 0.0 0.0 <u>Ldn</u> 67.8 61.4 69.4	000 000 000 C/ 3 4	0.00 0.00 0.00 VEL 68. 61. 69.
Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois Vehicle Type Autos: Medium Trucks: Heavy Trucks: Vehicle Noise	70.20 81.00 85.38 e Levels (with Leg Peak Hou 68 62 70 73	-0.21 -17.54 -14.01 out Topo and ir Leg Day .9 .4 .3 .0	barrier a 67.0 60.8 68.8 71.4	0.07 0.09 0.09 attent	7 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	-1.20 -1.20 -1.20 Leg	Night 59.1 52.9 61.0 63.6	-4.67 -4.87 -5.38	0.0 0.0 0.0 0.0 67.8 61.4 69.4 72.7	000 000 000 3 4 4 1 55	0.000 0.000 0.000 VEL 68.4 61.4 69.9 72.4 dBA
Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois Vehicle Type Autos: Medium Trucks: Heavy Trucks: Vehicle Noise	70.20 81.00 85.38 e Levels (with Leg Peak Hou 68 62 70 73	-0.21 -17.54 -14.01 out Topo and rr Leq Day .9 .4 .3 .0 ontour (in feet	barrier a / L0 67.0 60.8 68.8 71.4	0.07 0.09 0.09 attenu eq Ev	7 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	-1.20 -1.20 -1.20 Leg	Night 59.1 52.9 61.0 63.6	-4.67 -4.87 -5.38	0.(0.(0.(0.(67.(61.4 69.4 72.7	000 000 000 3 4 4 1 55	0.000 0.000 0.000 VEL 68.4 61.6 69.5 72.4

	FHWA-RD-7	77-108 HIGH	WAY N	OISE	PREDIC		IODEL (9)/12/20	021)		
Scenario: E Road Name: S Road Segment: n	. H St.						Name: N lumber: 1		ic Gateway		
	CIFIC INP	UT DATA							L INPUTS	5	
Highway Data				S	Site Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily Traff	ic (Adt):	9,020 vehicle	s				A	Autos:	15		
Peak Hour Perc	entage: 1	0.00%			Me	dium Tr	ucks (2 A	xles):	15		
Peak Hour	Volume:	902 vehicles	5		He	avy Tru	cks (3+ A	xles):	15		
Vehicle	Speed:	50 mph		v	/ehicle I	<i>lix</i>					
Near/Far Lane D	istance:	52 feet		-		cleType		Dav	Evening	Night	Daily
Site Data								77.5%	•	9.6%	91.81%
Barrier	Hoight:	0.0 feet			Me	edium T	rucks:	84.8%	4.9%	10.3%	2.52%
Barrier Type (0-Wall, 1		0.0			F	leavy T	rucks:	86.5%	2.7%	10.8%	5.67%
Centerline Dist. to	,	55.0 feet		-							
Centerline Dist. to O		55.0 feet		N	Voise So		levations		eet)		
Barrier Distance to O	bserver:	0.0 feet				Auto					
Observer Height (Abov	ve Pad):	5.0 feet				n Truck		297 004	Our de Adi		
Pad El	evation:	0.0 feet			Heav	y Truck	S: 8.0	104	Grade Adj	usuneni	0.0
Road El	levation:	0.0 feet		L	ane Equ	iivalen	t Distanc	e (in i	feet)		
Road	Grade:	0.0%				Auto	s: 48.7	724			
Le	eft View:	-90.0 degree	s		Mediur	n Truck	s: 48.5	542			
Rig	ht View:	90.0 degree	s		Heav	y Truck	s: 48.5	559			
FHWA Noise Model Ca	lculations										
VehicleType R	EMEL 7	raffic Flow	Dista	nce	Finite		Fresn	el	Barrier Atte	en Ber	m Atten
Autos:	70.20	-3.11		0.07		-1.20		-4.67	0.0		0.000
Medium Trucks:	81.00	-18.73		0.09	-	-1.20		-4.87	0.0		0.000
Heavy Trucks:	85.38	-15.21		0.09	Э	-1.20		-5.38	0.0	00	0.000
Unmitigated Noise Lev	els (withou	t Topo and	barrier	attenu	uation)						
	Peak Hour	Leq Day		Leq Ev		Leq	Night		Ldn		VEL
Autos:	66.0		64.1		62.3		56.2		64.9		65.5
Medium Trucks:	61.2		59.7		53.3		51.7		60.2		60.4
Heavy Trucks:	69.1		67.6		58.6		59.8		68.2		68.3
Vehicle Noise:	71.2		69.7		64.2		61.9		70.3		70.6
Centerline Distance to	Noise Con	tour (in feet)		=							
			L ala .	70 d		65	dBA 124	6	0 dBA	55	dBA
			Ldn:						267		576
			VEL:		58 60		124		207		601

F	HWA-RD-	77-108 HIGH	WAY	NOISE P	REDIC	ΓΙΟΝ Μ	ODEL (9/12/2	021)					
Scenario: E+ Road Name: S. Road Segment: n/o	H St.	Av.					Name: umber:		ic Gatewa	/				
SITE SPEC	IFIC INP	UT DATA			NOISE MODEL INPUTS									
Highway Data				Si	te Conc	litions	(Hard =	10, Sc	oft = 15)					
Average Daily Traffic	: (Adt): 1	4,173 vehicle	es					Autos:	15					
Peak Hour Perce	ntage: 1	0.00%			Med	lium Tru	ucks (2	Axles):	15					
Peak Hour Vo	olume: 1	,417 vehicles	6		Hea	ivy Truc	cks (3+)	Axles):	15					
Vehicle S	Speed:	50 mph		14	hicle M	liv								
Near/Far Lane Dis	tance:	52 feet				leType		Day	Evening	Night	Daily			
Site Data					10/110		lutos:	77.5%	•	9.6%				
Barrier H	loiaht:	0.0 feet			Me	, dium Ti		84.8%		10.3%				
Barrier Type (0-Wall, 1-		0.0 reet				eavy Ti		86.5%		10.8%				
Centerline Dist. to F	,	55.0 feet												
Centerline Dist. to Ob		55.0 feet		No	oise So				eet)					
Barrier Distance to Ob		0.0 feet				Autos		000						
Observer Height (Above		5.0 feet			Medium			297						
Pad Ele	,	0.0 feet			Heavy	/ Trucks	s: 8.	004	Grade Ad	justment.	0.0			
Road Ele		0.0 feet		La	ne Equ	ivalent	Distan	ce (in	feet)					
Road	Grade:	0.0%				Autos	s: 48	724						
Lef	t View:	-90.0 degree	s		Medium	Truck	s: 48	542						
Right	t View:	90.0 degree	es		Heavy	/ Truck:	s: 48	559						
FHWA Noise Model Cale		1								т				
		Traffic Flow	Dis	stance	Finite I		Fresi		Barrier Att		m Atten			
Autos:	70.20	-1.01		0.07		-1.20		-4.67		000	0.00			
Medium Trucks:	81.00	-18.73		0.09		-1.20		-4.87		000	0.00			
Heavy Trucks:	85.38	-15.21		0.09		-1.20		-5.38	0.0	000	0.00			
Unmitigated Noise Leve								1						
	Peak Hour			Leq Eve		Leq	Night		Ldn		VEL			
Autos:	68.1		66.2		64.4		58.		67.		67			
Medium Trucks:	61.2		59.7		53.3		51.		60.3		60			
Heavy Trucks:	69.1		67.6		58.6		59.	-	68.	-	68			
Vehicle Noise:	72.0		70.4		65.7		62.	5	71.	J	71			
Centerline Distance to N	Voise Con	tour (in feet))	70 dE	24	65	dBA		60 dBA	55	dBA			
			Ldn:	70 UL	64	001	138		298		64			
			VEL:		68		146		314		67			
									5		51			

Monday, November 8, 2021

FHWA-I	RD-77-108 HIGH	WAY NC	ISE PRE		DDEL (9/12	/2021)	
Scenario: 2024 Road Name: S. H St. Road Segment: n/o Hoski						estic Gateway 23	
SITE SPECIFIC	INPUT DATA					EL INPUTS	
Highway Data			Site C	onditions (Hard = 10,	Soft = 15)	
Average Daily Traffic (Adt):	11,043 vehicle	s			Auto	s: 15	
Peak Hour Percentage:	10.00%			Medium Tru	cks (2 Axles	s): 15	
Peak Hour Volume:	1,104 vehicles	5		Heavy Truck	ks (3+ Axles	s): 15	
Vehicle Speed:	50 mph		Vehic	le Mix			
Near/Far Lane Distance:	52 feet			ehicleType	Day	Evening	Night Daily
Site Data					utos: 77.5	•	9.6% 91.81
Barrier Height:	0.0 feet			Medium Tru	icks: 84.8	3% 4.9%	10.3% 2.52
Barrier Type (0-Wall, 1-Berm):				Heavy Tru	icks: 86.5	5% 2.7%	10.8% 5.67
Centerline Dist. to Barrier:			Noing	Source Ele	votiono (in	faati	
Centerline Dist. to Observer:	55.0 feet		NOISE	Autos		leel)	
Barrier Distance to Observer:	0.0 feet			Autos. dium Trucks	0.000		
Observer Height (Above Pad):	5.0 feet			eavv Trucks.		Grade Adiu	istment: 0.0
Pad Elevation:	0.0 feet		п	eavy mucks.	0.004	Orade Adja	Stricint. 0.0
Road Elevation:	0.0 feet		Lane	Equivalent	Distance (i	n feet)	
Road Grade:	0.0%			Autos	48.724		
Left View:	-90.0 degree	s	Me	dium Trucks	48.542		
Right View:	90.0 degree	s	н	eavy Trucks	48.559		
FHWA Noise Model Calculatio	ns						
VehicleType REMEL	Traffic Flow	Distan	ce Fir	ite Road	Fresnel	Barrier Atte	n Berm Atter
Autos: 70.2	0 -2.24		0.07	-1.20	-4.6	7 0.00	0.00
Medium Trucks: 81.0	0 -17.85		0.09	-1.20	-4.8	7 0.00	0.00
Heavy Trucks: 85.3	8 -14.33		0.09	-1.20	-5.3	8 0.00	0.00
Unmitigated Noise Levels (with	hout Topo and	barrier a	ttenuatio	n)			
VehicleType Leq Peak H	our Leq Day	Le	q Evenin	g Leq N	light	Ldn	CNEL
		64.9	-	3.2	57.1	65.7	66
		60.5		4.2	52.6	61.1	61
		68.5		9.5	60.7	69.1	69
	72.1	70.5	6	5.1	62.7	71.2	71
Vehicle Noise:	r2.1						
Vehicle Noise: Centerline Distance to Noise			-				
		L	70 dBA	65 d	BA	60 dBA	55 dBA
	Contour (in feet)	Ldn:		65 d	BA 142	60 dBA 306	55 dBA 65

	FHWA-RI	D-77-108 HIGH	IWAY NO	ISE PRE		IODEL (9/1	2/2021)		
Scena	rio: 2024+P				Project	Name: Ma	jestic Gateway	,	
Road Nar	ne: S. H St.				Job N	lumber: 139	923		
Road Segme	ent: n/o Hosking	g Av.							
	SPECIFIC IN	IPUT DATA					DEL INPUTS	5	
Highway Data				Site	Conditions	(Hard = 10	, Soft = 15)		
Average Daily	Traffic (Adt):	16,196 vehicle	es			Aut	tos: 15		
Peak Hou	r Percentage:	10.00%			Medium Tr	ucks (2 Axle	es): 15		
Peak I	Hour Volume:	1,620 vehicle	s		Heavy Tru	cks (3+ Axle	es): 15		
Ve	ehicle Speed:	50 mph		Vohi	le Mix				
Near/Far La	ane Distance:	52 feet			VehicleType	Da	y Evening	Night	Daily
Site Data							.5% 12.9%	9.6%	
		0.0 feet			Medium T		.8% 4.9%	10.3%	1.72
Barrier Type (0-V	voll 1 Permi:	0.0 reet 0.0			Heavy T		.5% 2.7%	10.8%	
	ist. to Barrier:	0.0 55.0 feet		L					2.51
Centerline Dist.		55.0 feet		Nois	e Source E				
Barrier Distance		0.0 feet			Auto	0.000			
Observer Height		5.0 feet			dium Truck				
•	ad Elevation:	0.0 feet		ŀ	leavy Truck	s: 8.004	1 Grade Adj	iustment	0.0
	ad Elevation:	0.0 feet		Lane	Equivalen	Distance	(in feet)		
110	Road Grade:	0.0%			Auto				
	Left View:	-90.0 degre		M	dium Truck				
	Right View:	90.0 degre			leavy Truck				
	rught thom.	50.0 degre			,	10.000			
FHWA Noise Moo		-					-		
VehicleType	REMEL	Traffic Flow	Distan		nite Road	Fresnel	Barrier Atte		m Atte
Autos:		-0.45		0.07	-1.20			000	0.0
Medium Trucks				0.09	-1.20			000	0.0
	85.38	-14.33		0.09	-1.20	-5.	38 0.0	000	0.0
Heavy Trucks:	00.00								
Jnmitigated Nois	e Levels (with								
Unmitigated Nois VehicleType	e Levels (with Leq Peak Hou	ır Leq Daj	/ Le	q Evenir	g Leq	Night	Ldn		VEL
Unmitigated Nois VehicleType Autos:	e Levels (with Leq Peak Hou 68	Ir Leq Day	/ Le 66.7	q Evenir (g Leq 65.0	58.9	67.5	5	68
Unmitigated Nois VehicleType Autos: Medium Trucks:	e Levels (with Leq Peak Hou 68 62	<i>Ir Leq Da</i> 3.6 2.0	/ Le 66.7 60.5	q Evenir (g Leq 5.0 64.2	58.9 52.6	67.5 61.1	5	68 61
Unmitigated Nois VehicleType Autos:	e Levels (with Leq Peak Hou 62 62	<i>Ir Leq Da</i> 3.6 2.0 9.9	/ Le 66.7	q Evenir (g Leq 65.0	58.9	67.5	5	68 61 65
Jnmitigated Nois VehicleType Autos: Medium Trucks:	e Levels (with Leq Peak Hou 62 62	<i>Ir Leq Da</i> 3.6 2.0 9.9	/ Le 66.7 60.5	q Evenir (t	g Leq 5.0 64.2	58.9 52.6	67.5 61.1	5	6 6 6
Unmitigated Nois VehicleType Autos. Medium Trucks. Heavy Trucks. Vehicle Noise.	e Levels (with Leg Peak Hou 68 62 69 72	<i>Ir Leq Da</i> 3.6 2.0 9.9	66.7 60.5 68.5 71.1	eq Evenir () (g Leq 55.0 54.2 59.5 56.3	58.9 52.6 60.7 63.3	67.5 61.1 69.1 71.8	5	6 6 6! 7:
Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks:	e Levels (with Leg Peak Hou 68 62 69 72	<i>Ir Leq Da</i> 3.6 2.0 9.9 2.7	/ Le 66.7 60.5 68.5 71.1	q Evenir (t	g Leq 55.0 54.2 59.5 56.3 65	58.9 52.6 60.7 63.3 dBA	67.5 61.1 69.1 71.8 60 dBA	5	68 61 69 72 dBA
Unmitigated Nois VehicleType Autos. Medium Trucks. Heavy Trucks. Vehicle Noise.	e Levels (with Leg Peak Hou 68 62 69 72	ur Leq Day 8.6 2.0 9.9 2.7 Dontour (in feet	66.7 60.5 68.5 71.1	eq Evenir () (g Leq 55.0 54.2 59.5 56.3	58.9 52.6 60.7 63.3	67.5 61.1 69.1 71.8	5	68 61 69 72

FH	WA-RD-77	-108 HIGH	WAY N	IOISE	PREDIC		IODEL (S	9/12/20)21)		
Scenario: 2029 Road Name: S. H Road Segment: n/o H	St.						Name: N lumber: 1		ic Gateway		
SITE SPECI	FIC INPU	T DATA				N	IOISE N	IODE	L INPUTS	6	
Highway Data				(v	Site Con	ditions	(Hard =	10, So	ft = 15)		
Average Daily Traffic (Adt): 11,	301 vehicle	s					Autos:	15		
Peak Hour Percen	tage: 10.	00%			Me	dium Tr	ucks (2 A	xles):	15		
Peak Hour Vol	ume: 1,1	30 vehicles			He	avy Tru	cks (3+ A	xles):	15		
Vehicle Sp	eed:	50 mph			Vehicle I	Aix					
Near/Far Lane Dista	ance:	52 feet		H		cleTvpe		Dav	Evening	Niaht	Daily
Site Data					1011			77.5%	•	9.6%	
Barrier He	iaht [.]	0.0 feet			Me	edium T	rucks:	84.8%	4.9%	10.3%	2.52
Barrier Type (0-Wall, 1-B	5	0.0			F	leavy T	rucks:	86.5%	2.7%	10.8%	5.67
Centerline Dist. to Ba		5.0 feet		- H		_					
Centerline Dist. to Obse		5.0 feet			voise So		levations		et)		
Barrier Distance to Obse	erver:	0.0 feet				Auto n Truck					
Observer Height (Above I	Pad):	5.0 feet				т тrucк у Truck		297 004	Grade Adj	unternent	0.0
Pad Eleva	ation:	0.0 feet			neav	у писк	s. o.u	104	Grade Auj	usuneni	0.0
Road Eleva	ation:	0.0 feet		L	ane Equ	ivalen	t Distanc	e (in f	ieet)		
Road G	rade: 0	.0%				Auto	s: 48.7	724			
Left	/iew: -9	0.0 degree	s		Mediur	n Truck	s: 48.5	542			
Right	View: 9	0.0 degree	s		Heav	y Truck	s: 48.5	559			
FHWA Noise Model Calcu	lations										
VehicleType REM		affic Flow	Dist	ance	Finite		Fresn		Barrier Atte		m Atter
Autos:	70.20	-2.13		0.0		-1.20		-4.67	0.0		0.00
Medium Trucks:	81.00	-17.75		0.09	-	-1.20		-4.87	0.0		0.00
Heavy Trucks:	85.38	-14.23		0.09	9	-1.20		-5.38	0.0	00	0.00
Unmitigated Noise Levels	s (without	Topo and	barrier	atten	uation)						
	ak Hour	Leq Day		Leq E	/ening	Leq	Night		Ldn		VEL
Autos:	66.9		35.0		63.3		57.2		65.8		66
Medium Trucks:	62.1		50.6		54.3		52.7		61.2		61
Heavy Trucks:	70.0		6.86		59.6		60.8		69.2		69
Vehicle Noise:	72.2		70.6		65.2		62.8		71.3		71
Centerline Distance to No	oise Conto	ur (in feet)		70	(0.4						10.4
				70 c		65	dBA	6	0 dBA	55	dBA
			Ldn:		67		144		311		67
		Cr	IEL:		70		151		324		69

	FHWA-RD	-77-108 HIGH	WAY	NOISE F	PREDICT	ION M	ODEL (9/12/20	021)		
Scenario	2029+P				F	Project	Name:	Majest	ic Gateway	,	
Road Name	e: S. H St.					Job Ni	umber:	13923			
Road Segmen	t: n/o Hosking	Av.									
	PECIFIC IN	PUT DATA							L INPUT	5	
Highway Data				Si	ite Condi	itions (Hard =	10, So	oft = 15)		
Average Daily 1	raffic (Adt):	16,454 vehicle	s					Autos:	15		
Peak Hour I	Percentage:	10.00%			Medi	ium Tru	icks (2 /	Axles):	15		
Peak Ho	our Volume:	1,645 vehicles			Heav	vy Truc	ks (3+7	Axles):	15		
Veh	icle Speed:	50 mph		V	ehicle Mi	x					
Near/Far Lan	e Distance:	52 feet		-		eTvpe		Dav	Evening	Night	Dailv
Site Data							utos:	77.5%	•	9.6%	
	rier Height:	0.0 feet			Med	lium Tr	ucks:	84.8%	4.9%	10.3%	1.739
Barrier Type (0-Wa		0.0			He	avy Tr	ucks:	86.5%		10.8%	
Centerline Dis	. ,	55.0 feet									
Centerline Dist. t		55.0 feet		N	oise Sou				eet)		
Barrier Distance t		0.0 feet				Autos		000			
Observer Height (/		5.0 feet			Medium			297			
	d Elevation:	0.0 feet			Heavy	Trucks	.: 8.	004	Grade Adj	ustment.	0.0
	d Elevation:	0.0 feet		La	ane Equi	valent	Distan	ce (in f	feet)		
	oad Grade:	0.0%				Autos	: 48.	724	,		
	Left View:	-90.0 degree	s		Medium	Trucks	: 48.	542			
	Right View:	90.0 degree	s		Heavy	Trucks	: 48.	559			
FHWA Noise Mode	Calculation:	5		1							
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite R		Fresr		Barrier Atte		m Atten
Autos:	70.20	-0.38		0.07		-1.20		-4.67		000	0.00
Medium Trucks:	81.00	-17.75		0.09		-1.20		-4.87		000	0.00
Heavy Trucks:	85.38	-14.23		0.09		-1.20		-5.38	0.0	000	0.00
Unmitigated Noise					<u> </u>						
	Leq Peak Hou			Leq Eve		Leq I			Ldn		VEL
Autos:	68		56.8		65.0		59.0		67.6		68.
Medium Trucks:	62		50.6		54.3		52.7		61.2		61.
Heavy Trucks:	70	-	58.6		59.6		60.8		69.2		69.
Vehicle Noise:	72	.8	71.2		66.4		63.4	1	71.9	9	72.
Centerline Distance	e to Noise Co	ntour (in feet)									
			L	70 dE		65 0			i0 dBA		dBA
			Ldn:		73		158		340		732
		C1	IEL :		77		166		357		768

Monday, November 8, 2021

FHWA-F	2D-77-108 HIGHW	AY NOIS			ODEL (9/	12/202	1)	_	
Scenario: 2042 Road Name: S. H St. Road Segment: n/o Hoski	ng Av.				Name: M umber: 13		Gateway		
SITE SPECIFIC	NPUT DATA						INPUTS		
Highway Data			Site Con	ditions	(Hard = 1	0, Soft	= 15)		
Average Daily Traffic (Adt):	12,191 vehicles				A	utos:	15		
Peak Hour Percentage:	10.00%		Me	dium Tri	ucks (2 Ax	des):	15		
Peak Hour Volume:	1,219 vehicles		He	avy Tru	cks (3+ Ax	des):	15		
Vehicle Speed:	50 mph		Vehicle I	Mix					
Near/Far Lane Distance:	52 feet			icleType	D	ay E	vening	Night	Daily
Site Data						7.5%	12.9%	9.6%	91.819
Barrier Height:	0.0 feet		M	edium Ti	rucks: 8	4.8%	4.9%	10.3%	2.52%
Barrier Type (0-Wall, 1-Berm):	0.0		1	Heavy Ti	rucks: 8	6.5%	2.7%	10.8%	5.67%
Centerline Dist. to Barrier:	55.0 feet		Noiso Se	urco El	evations	(in foot	6]		
Centerline Dist. to Observer:	55.0 feet		10130 00	Auto			9		
Barrier Distance to Observer:	0.0 feet		Modiu	m Truck	0.00				
Observer Height (Above Pad):	5.0 feet			y Truck			rade Adju	stment	0.0
Pad Elevation:	0.0 feet								
Road Elevation:	0.0 feet		Lane Eq	uivalent	Distance	e (in fee	et)		
Road Grade:	0.0%			Auto					
Left View:	-90.0 degrees			m Truck					
Right View:	90.0 degrees		Heav	ry Truck	s: 48.5	59			
FHWA Noise Model Calculatio	ns		1						
VehicleType REMEL	Traffic Flow	Distance	e Finite	Road	Fresne	I Ba	arrier Attei	n Berr	n Atten
Autos: 70.2	0 -1.81	C	0.07	-1.20	-4	4.67	0.00	00	0.00
Medium Trucks: 81.0			0.09	-1.20		4.87	0.00		0.00
Heavy Trucks: 85.3	B -13.90	C	0.09	-1.20		5.38	0.00	00	0.00
Unmitigated Noise Levels (wit			,						
VehicleType Leq Peak H			Evening		Night	L	.dn	CN	IEL
		5.4	63.6		57.5		66.2		66.
		1.0	54.6		53.1		61.5		61.
		3.9	59.9		61.2		69.5		69.
		1.0	65.5		63.2		71.6		71.
Centerline Distance to Noise	Contour (in feet)					-			
			0 dBA	65	dBA	60	dBA	55 (dBA
	Lo	dn:	70		152		327		704
	CNE		74		158		341		735

	FHWA-RL	0-77-108 HIGH	WAY	NOISE	PREDIC	TION M	ODEL (9/	12/2	021)		
Scenar	io: 2042+P					Project	Name: M	ajest	ic Gateway		
Road Nam	ne: S. H St.					Job N	umber: 13	3923			
Road Segme	<i>nt:</i> n/o Hosking	g Av.									
	SPECIFIC IN	IPUT DATA							L INPUTS	5	
Highway Data				S	Site Con	ditions	(Hard = 1	0, Sc	oft = 15)		
Average Daily	Traffic (Adt):	17,344 vehicle	es				A	utos:	15		
Peak Hour	Percentage:	10.00%			Mee	dium Tra	ucks (2 Ax	(les):	15		
Peak H	lour Volume:	1,734 vehicle	s		Hei	avy Truc	cks (3+ Ax	(les):	15		
Ve	hicle Speed:	50 mph		1	Vehicle N	lix					
Near/Far La	ne Distance:	52 feet		F		cleTvpe	E	ay	Evening	Night	Daily
Site Data								7.5%		9.6%	
		0.0.6			Me	dium Ti		4.8%		10.3%	1.77%
Barrier Type (0-W	rrier Height:	0.0 feet 0.0				leavy Ti		6.5%		10.8%	3.99%
Centerline Di	. ,	55.0 feet									
Centerline Dist		55.0 feet		^	Noise So		evations	(in fe	eet)		
Barrier Distance		0.0 feet				Autos					
Observer Height (5.0 feet			Mediur	n Truck	s: 2.29	97			
	ad Elevation:	0.0 feet			Heav	y Truck	s: 8.00	04	Grade Adj	ustment.	0.0
	ad Elevation:	0.0 feet		1	ane Equ	ivalent	Distance	in i	feet)		
	Road Grade:	0.0%		F		Auto					
	Left View:	-90.0 degree	20		Mediur	n Truck					
		0			Heav	y Truck	s: 48.5	59			
	Right View:	90.0 degree									
FHWA Noise Mod	Ū.	ů.									
FHWA Noise Mode	Ū.	ů.	Dis	tance	Finite	Road	Fresne	1	Barrier Atte	en Ber	m Atten
	el Calculation	s		tance 0.07		Road -1.20		1 4.67	Barrier Atte 0.0		
VehicleType	el Calculation REMEL	s Traffic Flow			7					00	0.000
VehicleType Autos:	el Calculation REMEL 70.20	s Traffic Flow -0.16	-	0.07	7 9	-1.20		4.67	0.0	100	0.000
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise	el Calculation REMEL 70.20 81.00 85.38	s Traffic Flow -0.16 -17.42 -13.90		0.07 0.09 0.09	7 9 9	-1.20 -1.20		4.67 4.87	0.0 0.0	100 100 100	0.000
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType	el Calculation REMEL 70.20 81.00 85.38 e Levels (with Leq Peak Hou	s Traffic Flow -0.16 -17.42 -13.90 out Topo and ir Leq Day	barrie	0.07 0.09 0.09	7 9 9 uation) vening	-1.20 -1.20 -1.20		4.67 4.87	0.0 0.0 0.0	00 00 00 <i>CI</i>	0.000 0.000 0.000
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos:	el Calculation REMEL 70.20 81.00 85.38 e Levels (with Leq Peak Hou 68	s Traffic Flow -0.16 -17.42 -13.90 out Topo and Ir Leq Day .9	<i>barrie</i> ⁄ 67.0	0.07 0.09 0.09 er atteni	7 9 9 <i>uation)</i> <i>vening</i> 65.2	-1.20 -1.20 -1.20		4.67 4.87	0.0 0.0 0.0 <i>Ldn</i> 67.8	000 000 000 <i>CI</i>	0.000 0.000 0.000 VEL 68.4
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks:	el Calculation REMEL 70.20 81.00 85.38 e Levels (with Leq Peak Hou 68 62	s Traffic Flow -0.16 -17.42 -13.90 out Topo and ir Leq Day .9 .5	<i>barrie</i> / 67.0 61.0	0.07 0.09 0.09 er atteni	7 9 9 <i>uation)</i> <i>vening</i> 65.2 54.6	-1.20 -1.20 -1.20		4.67 4.87	0.0 0.0 0.0 <i>Ldn</i> 67.8 61.5	00 00 00 <i>C/</i>	0.000 0.000 0.000 VEL 68.4 61.7
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks:	el Calculation <u>REMEL</u> 70.20 81.00 85.38 e Levels (with Leq Peak Hou 68 62 70	s Traffic Flow -0.16 -17.42 -13.90 out Topo and ir Leq Day .5 .4	<i>barrie</i> 67.0 61.0 68.9	0.07 0.09 0.09 er atteni	7 9 9 vening 65.2 54.6 59.9	-1.20 -1.20 -1.20		4.67 4.87	0.0 0.0 0.0 <i>Ldn</i> 67.8 61.5 69.5	00 00 00 <i>CI</i>	0.000 0.000 0.000 VEL 68.4 61.7 69.6
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks:	el Calculation REMEL 70.20 81.00 85.38 e Levels (with Leq Peak Hou 68 62	s Traffic Flow -0.16 -17.42 -13.90 out Topo and ir Leq Day .5 .4	<i>barrie</i> / 67.0 61.0	0.07 0.09 0.09 er atteni	7 9 9 <i>uation)</i> <i>vening</i> 65.2 54.6	-1.20 -1.20 -1.20		4.67 4.87	0.0 0.0 0.0 <i>Ldn</i> 67.8 61.5	00 00 00 <i>CI</i>	0.000 0.000 0.000 VEL 68.4 61.7 69.6
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks:	el Calculation. REMEL 70.20 81.00 85.38 e Levels (with Leg Peak Hou 68 62 70 73	s Traffic Flow -0.16 -17.42 -13.90 out Topo and ir Leg Day .9 .5 .4 .1	<i>barrie</i> 67.0 61.0 68.9 71.5	0.07 0.09 0.09 er attenn Leq Ev	7 9 9 <i>vening</i> 65.2 54.6 59.9 66.6	-1.20 -1.20 -1.20 Leg	Night 59.2 53.1 61.2 63.7	4.67 4.87 5.38	0.0 0.0 0.0 67.8 61.5 69.5 72.1	00 00 00 00 00 <i>C1</i>	0.000 0.000 0.000 VEL 68.4 61.7 69.6 72.5
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	el Calculation. REMEL 70.20 81.00 85.38 e Levels (with Leg Peak Hou 68 62 70 73	s Traffic Flow -0.16 -17.42 -13.90 out Topo and r Leq Day .9 .5 .5 .4 .1 ontour (in feet	<i>barrie</i> 67.0 61.0 68.9 71.5	0.07 0.09 0.09 er atteni	7 9 9 <u>vening</u> 65.2 54.6 59.9 66.6	-1.20 -1.20 -1.20 Leg		4.67 4.87 5.38	0.0 0.0 0.0 0.0 67.8 61.5 69.5 72.1	00 000 000 C/ 3 5 5 5 55	0.000 0.000 VEL 68.4 61.7 69.6 72.5
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	el Calculation. REMEL 70.20 81.00 85.38 e Levels (with Leg Peak Hou 68 62 70 73	s Traffic Flow -0.16 -17.42 -13.90 out Topo and ir Leq Day .9 .5 .4 .1 .1 .1 .1 .1 .1 .1 .5 .4 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1	<i>barrie</i> 67.0 61.0 68.9 71.5	0.07 0.09 0.09 er attenn Leq Ev	7 9 9 <i>vening</i> 65.2 54.6 59.9 66.6	-1.20 -1.20 -1.20 Leg	Night 59.2 53.1 61.2 63.7	4.67 4.87 5.38	0.0 0.0 0.0 67.8 61.5 69.5 72.1	00 000 000 C/ 3 5 5 5 55	0.000 0.000 0.000 VEL 68.4 61.7 69.6 72.5

	FHWA-RD	-77-108 HIGH	WAY NO	ISE PREDI		IODEL (9)/12/20	021)		
Scenario Road Name Road Segmen	e: S. H St.	Av.				Name: N lumber: 1		ic Gateway		
SITE S	PECIFIC INI	PUT DATA						L INPUTS	6	
Highway Data				Site Co.	nditions	(Hard =	10, So	ft = 15)		
Average Daily 1	raffic (Adt):	6,251 vehicle	s			A	Autos:	15		
Peak Hour I	Percentage:	10.00%		М	edium Tr	ucks (2 A	xles):	15		
Peak Ho	our Volume:	625 vehicle	6	Н	eavy Tru	cks (3+ A	xles):	15		
Veh	icle Speed:	50 mph		Vehicle	Mix					
Near/Far Lan	e Distance:	52 feet			hicleType		Dav	Evening	Niaht	Daily
Site Data							77.5%	•	9.6%	91.81%
Bar	ier Heiaht:	0.0 feet		٨	ledium T	rucks:	84.8%	4.9%	10.3%	2.52%
Barrier Type (0-Wa		0.0			Heavy T	rucks:	86.5%	2.7%	10.8%	5.67%
Centerline Dis		55.0 feet			_					
Centerline Dist. t		55.0 feet		Noise S		evations		et)		
Barrier Distance t	o Observer:	0.0 feet			Auto					
Observer Height (A	bove Pad):	5.0 feet			Im Truck			Our de Adi		
• •	d Elevation:	0.0 feet		Hea	vy Truck	s: 8.0	104	Grade Adj	usiment.	0.0
Roa	d Elevation:	0.0 feet		Lane Ed	quivalent	Distanc	e (in f	eet)		
R	oad Grade:	0.0%			Auto	s: 48.7	724			
	Left View:	-90.0 degree	es	Media	ım Truck	s: 48.5	542			
	Right View:	90.0 degree	s	Hea	vy Truck	s: 48.5	559			
FHWA Noise Mode	Calculations									
VehicleType	REMEL	Traffic Flow	Distar	ce Finite	e Road	Fresne	e/	Barrier Atte	en Ber	m Atten
Autos:	70.20	-4.71		0.07	-1.20		-4.67	0.0		0.000
Medium Trucks:	81.00	-20.32		0.09	-1.20		-4.87	0.0		0.000
Heavy Trucks:	85.38	-16.80		0.09	-1.20		-5.38	0.0	00	0.000
Unmitigated Noise	Levels (witho	ut Topo and	barrier a	ttenuation)						
	leq Peak Hour			eq Evening		Night		Ldn		VEL
Autos:	64.4		62.5	60.		54.6		63.3		63.9
Medium Trucks:	59.0	-	58.1	51.		50.2		58.6		58.8
Heavy Trucks:	67.	-	66.0	57.0		58.3		66.6		66.
Vehicle Noise:	69.	6	68.1	62.0	3	60.3		68.7		69.0
Centerline Distance	e to Noise Cor	ntour (in feet					r			
				70 dBA	65	dBA	6	0 dBA	55	dBA
			Ldn: VEL:	45 47		97 101		209 219		451 471

		-77-108 HIGH									
Scenario:									ic Gateway	'	
Road Name:						Job N	lumber:	13923			
Road Segment:	s/o Hosking	Av.									
	PECIFIC IN	PUT DATA							L INPUT	5	
Highway Data				Si	te Cond	ditions	(Hard =	: 10, Sc	oft = 15)		
Average Daily Tr	affic (Adt):	6,470 vehicle	es					Autos:	15		
Peak Hour Pe	ercentage:	10.00%			Med	dium Tr	ucks (2	Axles):	15		
Peak Hou	ır Volume:	647 vehicles	6		Hea	avy Tru	cks (3+	Axles):	15		
Vehic	cle Speed:	50 mph		V	hicle N	lix					
Near/Far Lane	Distance:	52 feet				cleType		Dav	Evening	Night	Daily
Site Data							Autos:	77.5%		9.6%	
Barri	er Height:	0.0 feet			Ме	dium T	rucks:	84.8%	4.9%	10.3%	2.439
Barrier Type (0-Wal		0.0			H	leavy T	rucks:	86.5%	2.7%	10.8%	5.489
Centerline Dist.		55.0 feet				· _					
Centerline Dist. to		55.0 feet		N	oise So		evation		eet)		
Barrier Distance to	Observer:	0.0 feet				Auto		.000			
Observer Height (Al		5.0 feet			Mediun			.297			
• 1	Elevation:	0.0 feet			Heav	y Truck	s: 8	.004	Grade Adj	ustment.	0.0
Road	Elevation:	0.0 feet		La	ne Equ	iivalen	t Distan	ce (in i	feet)		
Ro	ad Grade:	0.0%				Auto	s: 48	.724			
	Left View:	-90.0 degree	s		Mediun	n Truck	s: 48	.542			
F	Right View:	90.0 degree	es		Heav	y Truck	s: 48	.559			
FHWA Noise Model	Calculations	;		1							
VehicleType	REMEL	Traffic Flow	Di	stance	Finite	Road	Fres	nel	Barrier Atte	en Ber	m Atten
Autos:	70.20	-4.54		0.07		-1.20		-4.67		000	0.00
Medium Trucks:	81.00	-20.32		0.09		-1.20		-4.87		000	0.00
Heavy Trucks:	85.38	-16.80		0.09		-1.20		-5.38	0.0	000	0.00
Unmitigated Noise L			barri	er attenu	ation)						
	eq Peak Hou			Leq Eve		Leq	Night		Ldn		VEL
Autos:	64.		62.6		60.9		54.		63.4		64.
Medium Trucks:	59.		58.1		51.7		50.		58.6		58.
Heavy Trucks:	67.		66.0		57.0		58.	-	66.6		66.
Vehicle Noise:	69.	.7	68.1		62.7		60.	3	68.8	3	69.
Centerline Distance	to Noise Co	ntour (in feet)	۱.								
				70 dE		65	dBA		60 dBA		dBA
			Ldn:		45		98		211		45
			VEL:		47		102		220		475

FHW	A-RD-7	77-108 HIGH	NAY	NOISE			IODEL	(9/12/2	021)	_	_
Scenario: 2024						Project	Name:	Majest	ic Gateway	/	
Road Name: S. H S	t.					Job N	lumber:	13923			
Road Segment: s/o Ho:	sking A	w.									
SITE SPECIFI	C INP	UT DATA				N	OISE	MODE	L INPUT	S	
Highway Data					Site Cor	ditions	(Hard :	= 10, So	oft = 15)		
Average Daily Traffic (Ad	ft):	8,666 vehicle	s					Autos:	15		
Peak Hour Percentad	ye: 1	0.00%			Me	dium Tr	ucks (2	Axles):	15		
Peak Hour Volum	ne:	867 vehicles			He	avy Tru	cks (3+	Axles):	15		
Vehicle Spee	ed:	50 mph			Vehicle	Misc					
Near/Far Lane Distant	ce:	52 feet				icleType		Day	Evening	Night	Daily
Site Data					ver		autos:	77.5%	•	9.6%	
						ر edium T		84.8%		9.6%	2.52%
Barrier Heig		0.0 feet				eaium T Heavv T		86.5%		10.3%	2.52%
Barrier Type (0-Wall, 1-Berr		0.0				Heavy I	rucks:	86.5%	2.7%	10.8%	5.677
Centerline Dist. to Barri		55.0 feet			Noise S	ource E	levatio	ns (in f	eet)		
Centerline Dist. to Observ		55.0 feet				Auto	s: 0	0.000			
Barrier Distance to Observ		0.0 feet			Mediu	m Truck	s: 2	2.297			
Observer Height (Above Pa	·	5.0 feet			Hea	vv Truck	s: 8	3.004	Grade Ad	justment.	0.0
Pad Elevation		0.0 feet									
Road Elevation		0.0 feet			Lane Eq				feet)		
Road Grad		0.0%				Auto	0. 10	3.724			
Left Vie		-90.0 degree				m Truck		3.542			
Right Vie	W.	90.0 degree	s		Hea	vy Truck	s: 48	3.559			
FHWA Noise Model Calcula	tions										
VehicleType REME		raffic Flow	Dis	tance		Road	Fres		Barrier Att		m Atten
	0.20	-3.29		0.0)7	-1.20		-4.67	0.0	000	0.00
	1.00	-18.90		0.0		-1.20		-4.87	0.0	000	0.00
Heavy Trucks: 8	5.38	-15.38		0.0)9	-1.20		-5.38	0.0	000	0.00
Unmitigated Noise Levels (withou	t Topo and L	oarrie	er atte	nuation)						
VehicleType Leq Peak	Hour	Leq Day		Leq E	vening	Leq	Night		Ldn		IEL
Autos:	65.8	6	33.9		62.1		56	.1	64.	7	65.3
Medium Trucks:	61.0	Ę	59.5		53.1		51	.6	60.0	D	60.
Heavy Trucks:	68.9		67.5		58.4		59		68.		68.
Vehicle Noise:	71.1	6	69.5		64.0		61	.7	70.	1	70.
Centerline Distance to Nois	e Con	tour (in feet)	- 1			I		1			
				70	dBA	65	dBA		60 dBA	55	dBA
			.dn:		56 59		12 12		260 272		561 586

	FHWA-RI	D-77-108 HIGH	WAY NOIS	E PREDIC	CTION MOI	DEL (9/12/2	2021)		
Road Nan	rio: 2024+P me: S. H St. ent: s/o Hosking	g Av.				ame: Majes nber: 13923	tic Gateway		
SITE	SPECIFIC IN	NPUT DATA			NO	ISE MODI	EL INPUTS	;	
Highway Data				Site Cor		ard = 10, S			
Average Daily	Traffic (Adt):	8,885 vehicle	es			Autos	: 15		
Peak Hour	r Percentage:	10.00%		Me	edium Truck	ks (2 Axles)	: 15		
Peak H	Hour Volume:	889 vehicles	6	He	avy Trucks	(3+ Axles)	: 15		
Ve	ehicle Speed:	50 mph		Vehicle	Mise				
Near/Far La	ane Distance:	52 feet			icleType	Day	Evening	Night	Daily
Site Data				ven	Aut			9.6%	
					edium Truc			10.3%	2.46
	arrier Height:	0.0 feet			Heavy Truc			10.3%	5.53
Barrier Type (0-V	. ,	0.0						.0.070	0.00
	ist. to Barrier:	55.0 feet		Noise S	ource Elev	ations (in f	feet)		
Centerline Dist.		55.0 feet			Autos:	0.000			
Barrier Distance		0.0 feet		Mediu	m Trucks:	2.297			
Observer Height	(Above Pad): Pad Elevation:	5.0 feet		Hea	vy Trucks:	8.004	Grade Adjı	ustment:	0.0
	ad Elevation: ad Elevation:	0.0 feet		Lane En	uivelent D	istance (in	foot)		
	Road Grade:	0.0 feet		LaneLy	Autos:	48.724	leelj		
	Left View:	0.0%		Modiu	m Trucks:	48.542			
		-90.0 degree			vy Trucks:	48.559			
	Right View:	90.0 degree	25	nea	vy muchs.	40.009			
FHWA Noise Mod	lel Calculation	IS							
VehicleType	REMEL	Traffic Flow	Distance	e Finite	Road	Fresnel	Barrier Atte	n Ber	n Atte
A. /									
Autos:	70.20	-3.17	C	.07	-1.20	-4.67			0.0
Medium Trucks:	81.00	-18.90	C	.09	-1.20	-4.87	0.0	00 00	0.0
	81.00	-18.90	C				0.0	00 00	0.0
Medium Trucks:	81.00 85.38	-18.90 -15.38	C	.09 .09	-1.20	-4.87	0.0	00 00	0.0
Medium Trucks: Heavy Trucks:	81.00 85.38	-18.90 -15.38	C C barrier att	.09 .09	-1.20	-4.87 -5.38	0.0	00 00 00	0.0
Medium Trucks: Heavy Trucks: Unmitigated Nois	81.00 85.38 E Levels (with Leq Peak Hot	-18.90 -15.38 hout Topo and ur Leq Day	C C barrier att	.09 .09 enuation)	-1.20 -1.20 <i>Leq Nig</i>	-4.87 -5.38	0.00	00 00 00	0.0 0.0 IEL
Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType	81.00 85.38 Levels (with Leq Peak Hot 65	-18.90 -15.38 nout Topo and ur Leq Day 5.9	0 D Darrier atte Leq	.09 .09 enuation) Evening	-1.20 -1.20 Leq Nig	-4.87 -5.38 ght	0.00 0.00 0.00	00 00 00	0.0 0.0 VEL 65
Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos:	81.00 85.38 E Levels (with Leg Peak Hou 65 61	-18.90 -15.38 nout Topo and ur Leq Day 5.9 1.0	0 0 barrier att Leq 64.0	.09 .09 enuation) Evening 62.2	-1.20 -1.20 Leq Nig	-4.87 -5.38 ght 56.2	0.00 0.00 0.00 <i>Ldn</i> 64.8	00 00 00	0.0 0.0 <u>VEL</u> 65 60
Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks:	81.00 85.38 e Levels (with Leg Peak Hou 65 61 61	-18.90 -15.38 nout Topo and ur Leq Day 5.9 1.0 8.9	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	.09 .09 <i>Evening</i> 62.2 53.1	-1.20 -1.20 Leq Nig	-4.87 -5.38 ght 56.2 51.6	0.00 0.00 0.00 <i>Ldn</i> 64.8 60.0	00 00 00 <i>CI</i>	0.0 0.0 <u>VEL</u> 65 68
Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks:	81.00 85.38 Re Levels (with Leg Peak Hou 65 61 61 62 61 71	-18.90 -15.38 nout Topo and ur Leq Day 5.9 1.0 8.9 1.1	0 barrier atte 64.0 59.5 67.5 69.5	.09 .09 <i>Evening</i> 62.2 53.1 58.4	-1.20 -1.20 Leq Nig	-4.87 -5.38 ght	0.00 0.00 0.00 <i>Ldn</i> 64.8 60.0 68.0	00 00 00 <i>CI</i>	0.0 0.0 <u>VEL</u> 65 68
Medium Trucks: Heavy Trucks: Unmitigated Noiss VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	81.00 85.38 Re Levels (with Leg Peak Hou 65 61 61 62 61 71	-18.90 -15.38 nout Topo and ur Leq Day 5.9 1.0 8.9 1.1	0 barrier atto Leg 64.0 59.5 67.5 69.5	.09 .09 <i>Evening</i> 62.2 53.1 58.4	-1.20 -1.20 Leq Nig	-4.87 -5.38 ght	0.00 0.00 0.00 <i>Ldn</i> 64.8 60.0 68.0	00 00 00 <i>CI</i>	0.0 0.0 <u>VEL</u> 65 60 68
Medium Trucks: Heavy Trucks: Unmitigated Noiss VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	81.00 85.38 Re Levels (with Leg Peak Hou 65 61 61 62 61 71	-18.90 -15.38 nout Topo and ur Leq Day 5.9 1.0 8.9 1.1 ontour (in feet)	0 barrier atto Leg 64.0 59.5 67.5 69.5	.09 .09 <u>enuation)</u> <u>Evening</u> 62.2 53.1 58.4 64.1	-1.20 -1.20 Leq Nig	-4.87 -5.38 ght	0.00 0.00 0.00 64.8 60.0 68.0 70.2	00 00 00 <i>CI</i>	65 60 68 70

Monday, November 8, 2021

FHWA-RD-77-108 HIGHWA	Y NOISE	PREDIC	TION MO	DDEL (9	/12/20	21)		
Scenario: 2029 Road Name: S. H St. Road Segment: s/o Hosking Av.				Vame: N mber: 1		c Gateway		
SITE SPECIFIC INPUT DATA						L INPUTS	3	
Highway Data	5	Site Con	ditions (Hard =	10, So	ft = 15)		
Average Daily Traffic (Adt): 9,348 vehicles				A	utos:	15		
Peak Hour Percentage: 10.00%		Me	dium Tru	cks (2 A	xles):	15		
Peak Hour Volume: 935 vehicles		He	avy Truci	ks (3+ A	xles):	15		
Vehicle Speed: 50 mph		/ehicle I	Mix					
Near/Far Lane Distance: 52 feet	- F		icleType		Dav	Evening	Night	Daily
Site Data					77.5%	12.9%	9.6%	
Barrier Height: 0.0 feet		Me	edium Tru	icks:	34.8%	4.9%	10.3%	2.52%
Barrier Type (0-Wall, 1-Berm): 0.0		ŀ	Heavy Tru	icks:	36.5%	2.7%	10.8%	5.67%
Centerline Dist. to Barrier: 55.0 feet	L.							
Centerline Dist. to Observer: 55.0 feet	^	voise Sc	ource Ele			et)		
Barrier Distance to Observer: 0.0 feet			Autos					
Observer Height (Above Pad): 5.0 feet			m Trucks			Crada Adi	votraont	
Pad Elevation: 0.0 feet		Heav	ry Trucks	8.0	04	Grade Adj	usuneni	0.0
Road Elevation: 0.0 feet	L	ane Equ	uivalent	Distanc	e (in f	eet)		
Road Grade: 0.0%			Autos	48.7	24			
Left View: -90.0 degrees		Mediur	m Trucks	48.5	42			
Right View: 90.0 degrees		Heav	ry Trucks	48.5	59			
FHWA Noise Model Calculations								
VehicleType REMEL Traffic Flow D	istance	Finite	Road	Fresne	e/ l	Barrier Atte	en Ber	m Atten
Autos: 70.20 -2.96	0.07	7	-1.20		4.67	0.0	00	0.00
Medium Trucks: 81.00 -18.57	0.09	Э	-1.20		4.87	0.0	00	0.00
Heavy Trucks: 85.38 -15.05	0.09	Э	-1.20		5.38	0.0	00	0.00
Unmitigated Noise Levels (without Topo and barr	rier atten	uation)						
VehicleType Leq Peak Hour Leq Day	Leq Ev		Leq N	•		Ldn		VEL
Autos: 66.1 64.2		62.4		56.4		65.0		65.
Medium Trucks: 61.3 59.8		53.4		51.9		60.4		60.
Heavy Trucks: 69.2 67.8		58.8		60.0		68.4		68.
		64.4		62.0		70.5		70.
Vehicle Noise: 71.4 69.8								
Centerline Distance to Noise Contour (in feet)	70 a		65 d		6	0 dBA	55	dBA
	70 a	IBA 59 62	65 d	BA 127 133	6	0 dBA 274 286	55	dBA 590

	FHWA-RD	-77-108 HIGH	WAY	NOISE P	REDICTI	ON M	ODEL (9/12/2	J21)		
	o: 2029+P								ic Gateway	/	
Road Nam						Job N	umber:	13923			
Road Segmer	nt: s/o Hosking	Av.									
	SPECIFIC IN	PUT DATA								5	
Highway Data				Si	te Condi	tions	Hard =	10, So	oft = 15)		
Average Daily	Traffic (Adt):	9,567 vehicle	s					Autos:	15		
Peak Hour	Percentage:	10.00%			Media	um Tru	icks (2 A	Axles):	15		
Peak H	our Volume:	957 vehicles			Heav	y Truc	:ks (3+ A	Axles):	15		
Ve	hicle Speed:	50 mph		Ve	hicle Mi	r					
Near/Far La	ne Distance:	52 feet		-	Vehicl			Dav	Evening	Night	Daily
Site Data						A	utos:	77.5%	•	9.6%	
Bar	rier Height:	0.0 feet			Med	ium Tr	ucks:	84.8%	4.9%	10.3%	2.46
Barrier Type (0-W		0.0			He	avy Tr	ucks:	86.5%	2.7%	10.8%	5.54
Centerline Dis	. ,	55.0 feet			oise Sou			- (in f	41		
Centerline Dist.	to Observer:	55.0 feet		/\\C	oise sou				eet)		
Barrier Distance	to Observer:	0.0 feet				Autos		000			
Observer Height (Above Pad):	5.0 feet			Medium			297	0		
	d Elevation:	0.0 feet			Heavy	Irucks	8.0	004	Grade Adj	ustment.	0.0
Roa	d Elevation:	0.0 feet		La	ne Equiv	/alent	Distand	ce (in i	feet)		
F	Road Grade:	0.0%				Autos	: 48.	724			
	Left View:	-90.0 degree	s		Medium	Trucks	: 48.	542			
	Right View:	90.0 degree	s		Heavy	Trucks	: 48.	559			
FHWA Noise Mode	al Calculations	;									
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite R	oad	Fresn	el	Barrier Atte	en Ber	m Atten
Autos:	70.20	-2.85		0.07		1.20		-4.67	0.0	000	0.00
Medium Trucks:	81.00	-18.57		0.09		1.20		-4.87	0.0	000	0.00
Heavy Trucks:	85.38	-15.05		0.09		1.20		-5.38	0.0	000	0.00
Unmitigated Noise	Levels (with	out Topo and I	barrie	er attenua	ation)						
	Leq Peak Hou			Leq Eve		Leq			Ldn		VEL
Autos:	66.		54.3		62.6		56.5		65.1		65.
Medium Trucks:	61.	-	59.8		53.4		51.9		60.4		60.
Heavy Trucks:	69.		67.8		58.8		60.0		68.4	-	68.
Vehicle Noise:	71.	.4 (59.9		64.4		62.0)	70.5	5	70.
Centerline Distanc	e to Noise Co	ntour (in feet)									
			L	70 dE		65 (60 dBA		dBA
			Ldn:		59		128		275		593
		CN			62		133		287		61

Monday, November 8, 2021

	FHWA-RD	-77-108 HIGH	WAY NO	ISE F	REDIC		ODEL (9	/12/20)21)	_	
Scenari Road Nam Road Segmer		Av.					Name: N Imber: 1		ic Gateway	/	
	SPECIFIC IN	PUT DATA							L INPUT	S	
Highway Data				Si	ite Con	ditions (Hard = 1	10, Sc	ft = 15)		
Average Daily	Traffic (Adt):	12,067 vehicle	s				A	utos:	15		
Peak Hour	Percentage:	10.00%			Me	dium Tru	cks (2 A	xles):	15		
Peak H	our Volume:	1,207 vehicles			He	avy Truc	ks (3+ A	xles):	15		
	nicle Speed:	50 mph		Ve	ehicle I	<i>lix</i>					
Near/Far Lar	ne Distance:	52 feet		-	Vehi	cleType	1	Day	Evening	Night	Daily
Site Data								77.5%	•	9.6%	
Bar	rier Heiaht:	0.0 feet			Me	edium Tr	ucks: 8	34.8%	4.9%	10.3%	6 2.52%
Barrier Type (0-W		0.0			F	leavy Tr	ucks: 8	36.5%	2.7%	10.8%	5.67%
Centerline Dis	. ,	55.0 feet						(i	- 41		
Centerline Dist. I	o Observer:	55.0 feet		N	oise So	Autos			et)		
Barrier Distance t	o Observer:	0.0 feet				n Trucks	. 0.0				
Observer Height (J	Above Pad):	5.0 feet				n Trucks v Trucks	-		Grade Ad	iustman	t: 0.0
Pa	d Elevation:	0.0 feet			neav	y mucks	. 0.0	04	Orace Au	asanch	. 0.0
Roa	d Elevation:	0.0 feet		Lá	ane Equ	ıivalent			eet)		
F	Road Grade:	0.0%				Autos					
	Left View:	-90.0 degree	s			n Trucks		42			
	Right View:	90.0 degree	s		Heav	y Trucks	48.5	59			
FHWA Noise Mode	l Calculations										
VehicleType	REMEL	Traffic Flow	Distan		Finite		Fresne		Barrier Att		rm Atten
Autos:	70.20	-1.85		0.07		-1.20		4.67		000	0.00
Medium Trucks:	81.00	-17.47		0.09		-1.20		4.87		000	0.000
Heavy Trucks:	85.38	-13.94		0.09		-1.20	-	5.38	0.0	000	0.00
Unmitigated Noise											
	Leq Peak Hou			eq Eve		Leq I	•		Ldn		NEL
Autos:	67.	-	65.3		63.6		57.5		66.1		66.
Medium Trucks:	62.		60.9		54.6		53.0		61.5	-	61.
Heavy Trucks:	70.	-	58.9		59.9		61.1		69.5	-	69.
Vehicle Noise:	72.	.5	70.9		65.5		63.1		71.6	Ď	71.
Centerline Distanc	e to Noise Co	ntour (in feet)							0 dBA		
											5 dBA
			ட	70 dE		65 0		L.			
			Ldn: IEL:	70 aE	70 73	65 c	151 157		325 339		700

FHWA-RD-77-1	08 HIGHWAY NO	DISE PREDI		ODEL (9/12/2	2021)		
Scenario: 2042+P Road Name: S. H St. Road Segment: s/o Hosking Av.				Name: Majes umber: 13923			
SITE SPECIFIC INPUT	DATA		P	OISE MOD	EL INPUTS	•	
Highway Data		Site Co	nditions	(Hard = 10, S	oft = 15)		
Average Daily Traffic (Adt): 12,28	6 vehicles			Autos	: 15		
Peak Hour Percentage: 10.00)%	M	edium Tr	ucks (2 Axles)	: 15		
Peak Hour Volume: 1,229) vehicles	H	eavy Tru	cks (3+ Axles)	: 15		
Vehicle Speed: 50) mph	Vehicle	Mix				
Near/Far Lane Distance: 52	e feet		hicleType	Day	Evening	Night	Daily
Site Data				Autos: 77.59		9.6%	91.96%
Barrier Height: 0	0 feet	/	Aedium T	ucks: 84.89	6 4.9%	10.3%	2.47%
Barrier Type (0-Wall, 1-Berm): 0			Heavy T	ucks: 86.5	6 2.7%	10.8%	5.57%
	0 feet	Malaa			41		
Centerline Dist. to Observer: 55	0 feet	Noise 3	ource El Auto	evations (in i	eet)		
Barrier Distance to Observer: 0	0 feet			0.000			
Observer Height (Above Pad): 5	0 feet		um Truck		Grade Adji	istmont.	0.0
Pad Elevation: 0	0 feet	Hea	ivy Truck	5. 8.004	Graue Auju	Journerin.	0.0
Road Elevation: 0	0 feet	Lane E	quivalen	Distance (in	feet)		
Road Grade: 0.0	%		Auto	s: 48.724			
Left View: -90	0 degrees	Medi	um Truck	s: 48.542			
Right View: 90	0 degrees	Hea	ivy Truck	s: 48.559			
FHWA Noise Model Calculations							
VehicleType REMEL Trafi	ic Flow Distar	nce Finit	e Road	Fresnel	Barrier Atte	n Berr	n Atten
Autos: 70.20	-1.77	0.07	-1.20	-4.67	0.0	00	
	-17.47	0.07 0.09	-1.20	-4.67 -4.87			0.00
Autos: 70.20					0.0	00	0.000
Autos: 70.20 Medium Trucks: 81.00	-17.47 -13.94	0.09 0.09	-1.20 -1.20	-4.87	0.0	00	0.000
Autos: 70.20 Medium Trucks: 81.00 Heavy Trucks: 85.38 Unmitigated Noise Levels (without Tr Vehicle Type Leq Peak Hour	-17.47 -13.94 Opo and barrier a Leq Day L	0.09 0.09 attenuation) eq Evening	-1.20 -1.20 Leq	-4.87 -5.38 Night	0.0 0.0	00 00 <i>CN</i>	0.000 0.000 0.000
Autos: 70.20 Medium Trucks: 81.00 Heavy Trucks: 85.38 Unmitigated Noise Levels (without Tr Vehicle Type Leq Peak Hour 1 Autos: 67.3	-17.47 -13.94 opo and barrier a Leq Day L 65.4	0.09 0.09 attenuation) eq Evening 63.	-1.20 -1.20 <i>Leq</i>	-4.87 -5.38 Night 57.6	0.0 0.0 Ldn 66.2	00 00 <i>CN</i>	0.00 0.00 0.00
Autos: 70.20 Medium Trucks: 81.00 Heavy Trucks: 85.38 Unnitigated Noise Levels (without Tr VehicleType Leg Peak Hour Autos: 67.3 Medium Trucks: 62.4	-17.47 -13.94 ppo and barrier a Leq Day L 65.4 60.9	0.09 0.09 attenuation) eq Evening 63. 54.	-1.20 -1.20 -1.20 Leq 6	-4.87 -5.38 <u>Night</u> 57.6 53.0	0.0 0.0 <i>Ldn</i> 66.2 61.5	00 00 <i>CN</i>	0.000 0.000 0.000 IEL 66.8 61.7
Autos: 70.20 Medium Trucks: 81.00 Heavy Trucks: 85.38 Unmitigated Moise Levels (without Tr VehicleType Leg Peak Hour] Autos: 67.3 Medium Trucks: 62.4 Heavy Trucks: 70.3	-17.47 -13.94 opo and barrier a Leq Day L 65.4 60.9 68.9	0.09 0.09 eq Evening 63. 54. 59.	-1.20 -1.20 <i>Leq</i> 6 6	-4.87 -5.38 <u>Night</u> 57.6 53.0 61.1	0.0 0.0 <i>Ldn</i> 66.2 61.5 69.5	00 00 <i>CN</i>	0.000 0.000 0.000 IEL 66.8 61.3 69.6
Autos: 70.20 Medium Trucks: 81.00 Heavy Trucks: 85.38 Unnitigated Noise Levels (without Tr VehicleType Leg Peak Hour Autos: 67.3 Medium Trucks: 62.4	-17.47 -13.94 ppo and barrier a Leq Day L 65.4 60.9	0.09 0.09 attenuation) eq Evening 63. 54.	-1.20 -1.20 <i>Leq</i> 6 6	-4.87 -5.38 <u>Night</u> 57.6 53.0	0.0 0.0 <i>Ldn</i> 66.2 61.5	00 00 <i>CN</i>	0.000 0.000 0.000 IEL 66.8 61.3 69.6
Autos: 70.20 Medium Trucks: 81.00 Heavy Trucks: 85.38 Unmitigated Moise Levels (without Tr VehicleType Leg Peak Hour] Autos: 67.3 Medium Trucks: 62.4 Heavy Trucks: 70.3	-17.47 -13.94 ppo and barrier a <u>Leq Day L</u> 65.4 60.9 68.9 71.0	0.09 0.09 eq Evening 63. 54. 59. 65.	-1.20 -1.20 <i>Leq</i> 6 6 5	-4.87 -5.38 Night 57.6 53.0 61.1 63.2	0.0 0.0 <u>Ldn</u> 66.2 61.5 69.5 71.6	00 00 <i>CN</i>	0.000 0.000 0.000 <u>IEL</u> 66.3 61.7 69.6 71.9
Autos: 70.20 Medium Trucks: 81.00 Heavy Trucks: 85.38 Umitigated Noise Levels (without Tr VehicleType Leg Peak Hour] Autos: 67.3 Medium Trucks: 62.4 Heavy Trucks: 70.3 Vehicle Noise: 72.5	-17.47 -13.94 ppo and barrier at Leq Day L 65.4 60.9 68.9 71.0 r (in feet)	0.09 0.09 ettenuation) eq Evening 63. 54. 59. 65. 70 dBA	-1.20 -1.20 <i>Leq</i> 6 5 5 65	-4.87 -5.38 Night 57.6 53.0 61.1 63.2 dBA	0.0 0.0 <u>Ldn</u> 66.2 61.5 69.5 71.6 60 dBA	00 00 <i>CN</i>	0.000 0.000 0.000 IEL 66.4 61.7 69.6 71.9
Autos: 70.20 Medium Trucks: 81.00 Heavy Trucks: 85.38 Unnitigated Moise Levels (without Tr VehicleType Leg Peak Hour Autos: 67.3 Medium Trucks: 62.4 Heavy Trucks: 70.3 Vehicle Noise: 72.5	-17.47 -13.94 ppo and barrier a <u>Leq Day L</u> 65.4 60.9 68.9 71.0	0.09 0.09 eq Evening 63. 54. 59. 65.	-1.20 -1.20 -1.20 <i>Leq</i> 6 5 5 5	-4.87 -5.38 Night 57.6 53.0 61.1 63.2	0.0 0.0 <u>Ldn</u> 66.2 61.5 69.5 71.6	00 00 <i>CN</i>	0.000 0.000 0.000 IEL 66.8 61.7 69.6 71.9

FHWA-RD-77-108 HI	HWAY NO	SE PREDIO	CTION MO	DEL (9/1	12/2021)		
Scenario: E Road Name: S. H St. Road Segment: n/o Panama Rd.				lame: Ma mber: 13	ajestic Gateway 923	y	
SITE SPECIFIC INPUT DAT	4				DEL INPUT	S	
Highway Data		Site Cor	ditions (H	lard = 10), Soft = 15)		
Average Daily Traffic (Adt): 6,263 veh	cles			Au	<i>itos:</i> 15		
Peak Hour Percentage: 10.00%		Me	dium Truc	ks (2 Axl	<i>les):</i> 15		
Peak Hour Volume: 626 vehic	les	He	avy Truck	s (3+ Axl	les): 15		
Vehicle Speed: 50 mph		Vehicle	Mix				
Near/Far Lane Distance: 52 feet			icleType	Dá	ay Evening	Night	Daily
Site Data		VCI			7.5% 12.9%	9.6%	91.819
Barrier Height: 0.0 feet		м	edium Tru	cks: 84	4.8% 4.9%	10.3%	2.52%
Barrier Type (0-Wall, 1-Berm): 0.0			Heavy Tru	cks: 86	6.5% 2.7%	10.8%	5.67%
Centerline Dist. to Barrier: 55.0 feet							
Centerline Dist. to Observer: 55.0 feet		Noise Se	ource Elev		,		
Barrier Distance to Observer: 0.0 feet			Autos:	0.00	-		
Observer Height (Above Pad): 5.0 feet			m Trucks:	2.29			
Pad Elevation: 0.0 feet		Hea	vy Trucks:	8.00	4 Grade Ad	justment:	0.0
Road Elevation: 0.0 feet		Lane Eq	uivalent D	Distance	(in feet)		
Road Grade: 0.0%			Autos:	48.72	4		
Left View: -90.0 deg	'ees	Mediu	m Trucks:	48.54	2		
Right View: 90.0 deg	ees	Hea	vy Trucks:	48.55	9		
FHWA Noise Model Calculations		-					
VehicleType REMEL Traffic Flow	/ Distanc	e Finite	Road	Fresnel	Barrier Att	en Berr	n Atten
Autos: 70.20 -4.	0	0.07	-1.20	-4	.67 0.0	000	0.00
Medium Trucks: 81.00 -20.3	81	0.09	-1.20	-4	.87 0.0	000	0.00
Heavy Trucks: 85.38 -16.3	'9	0.09	-1.20	-5	.38 0.0	000	0.00
Unmitigated Noise Levels (without Topo an	d barrier at	tenuation)					
VehicleType Leq Peak Hour Leq D		q Evening	Leq N	•	Ldn		IEL
Autos: 64.4	62.5	60.7		54.7	63.3		63.
Medium Trucks: 59.6	58.1	51.7		50.2	58.	-	58.
Heavy Trucks: 67.5	66.1	57.0		58.3	66.		66.
Vehicle Noise: 69.7	68.1	62.6		60.3	68.	(69.
Centerline Distance to Noise Contour (in fe		70 dBA	65 dF	24	60 dBA	55	dBA
	Ldn:	70 ава 45	05 01	97	210 210		ава 452
	CNEL:	45		97 102	210		452
	UNLL.	47		102	218	,	472

	FHWA-RD	-77-108 HIGH	WAY	NOISE F	PREDICT	ION M	ODEL (9/12/20	021)		
Scenar	o: E+P				F	Project	Name:	Majest	ic Gatewa	/	
Road Nam	e: S. H St.					Job N	umber:	13923			
Road Segmer	nt: n/o Panama	a Rd.									
	SPECIFIC IN	PUT DATA							L INPUT	S	
Highway Data				Si	ite Cond	itions ('Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	6,482 vehicle	s					Autos:	15		
Peak Hour	Percentage:	10.00%			Med	ium Tru	cks (2 /	Axles):	15		
Peak H	our Volume:	648 vehicles	6		Hea	vy Truc	ks (3+ /	Axles):	15		
Ve	hicle Speed:	50 mph		14	ehicle M	iv					
Near/Far La	ne Distance:	52 feet				leType		Dav	Evening	Night	Dailv
Site Data					venne		utos:	77.5%		9.6%	
					Med	dium Tr		84.8%		10.3%	
	rier Height:	0.0 feet				eavy Tr		86.5%		10.3 %	
Barrier Type (0-W		0.0			11	Juvy II	uons.	00.37	2.170	10.070	5.40
Centerline Dis		55.0 feet		N	oise Sou	irce Ele	evation	s (in fe	et)		
Centerline Dist.		55.0 feet				Autos	: 0.	000			
Barrier Distance		0.0 feet			Medium	Trucks	: 2.	297			
Observer Height (,	5.0 feet			Heavy	Trucks	: 8.	004	Grade Ad	justment.	0.0
	d Elevation:	0.0 feet			ane Equi	ivelent	Distan		[a a f]		
	ad Elevation:	0.0 feet		Le	ane Equi				eel)		
	Road Grade:	0.0%			Medium	Autos		724 542			
	Left View:	-90.0 degree						542 559			
	Right View:	90.0 degree	s		Heavy	TTUCKS	: 48.	228			
FHWA Noise Mode	al Calculations										
VehicleType	REMEL	Traffic Flow	Dist	tance	Finite F	Road	Fresr		Barrier Att	en Ber	m Atten
Autos:	70.20	-4.54		0.07		-1.20		-4.67	0.0	000	0.00
Medium Trucks:	81.00	-20.31		0.09		-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	85.38	-16.79		0.09		-1.20		-5.38	0.0	000	0.00
Unmitigated Noise	Levels (with	out Topo and	barrie	r attenu	ation)						
VehicleType	Leq Peak Hou	r Leq Day	r	Leg Eve	ening	Leq I	Vight		Ldn	CI	VEL
Autos:	64		62.6		60.9		54.8		63.4		64
Medium Trucks:	59		58.1		51.7		50.2		58.		58
Heavy Trucks:	67		66.1		57.0		58.3		66.	6	66.
Vehicle Noise:	69	.7	68.1		62.7		60.3	3	68.	В	69
Centerline Distand	e to Noise Co	ntour (in feet))								
				70 dE		65 0			i0 dBA		dBA
			Ldn:		46		98		211		45
			VEL		.0						

Monday, November 8, 2021

	FHWA-RD	-77-108 HIGH\	VAY NO	ISE PREDI		ODEL (9/1:	2/2021)		
Scenario Road Name Road Segmen	e: S. H St.	a Rd.				Name: Maj Imber: 139	estic Gateway 23	/	
SITE S	PECIFIC IN	PUT DATA			N	OISE MO	DEL INPUT	s	
Highway Data				Site Col	nditions (Hard = 10,	Soft = 15)		
Average Daily 1	Traffic (Adt):	6,639 vehicles	5			Aut	os: 15		
Peak Hour F	Percentage:	10.00%		M	edium Tru	cks (2 Axle	es): 15		
Peak Ho	our Volume:	664 vehicles		H	eavy Truc	ks (3+ Axle	es): 15		
Veh	icle Speed:	50 mph		Vehicle	Mix				
Near/Far Lan	e Distance:	52 feet			hicleType	Da	y Evening	Night	Daily
Site Data				Ver			5% 12.9%	•	91.81 ^o
		0.0.6			1edium Tr		8% 4.9%	10.3%	2.52
Barrier Type (0-Wa	rier Height:	0.0 feet 0.0			Heavy Tr		5% 2.7%	10.8%	5.67
Centerline Dis	. ,	55.0 feet							
Centerline Dist. t		55.0 feet		Noise S		evations (i	,		
Barrier Distance t		0.0 feet			Autos	. 0.000			
Observer Height (A		5.0 feet			ım Trucks				
	d Elevation:	0.0 feet		Hea	vy Trucks	8.004	Grade Ad	justment:	0.0
Roa	d Elevation:	0.0 feet		Lane Ec	quivalent	Distance (in feet)		
	oad Grade:	0.0%			Autos	: 48.724	,		
	Left View:	-90.0 degree		Mediu	ım Trucks	: 48.542			
	Right View:	90.0 degree		Hea	vy Trucks	48.559)		
FHWA Noise Mode	I Calculations	6							
VehicleType	REMEL	Traffic Flow	Distan		e Road	Fresnel	Barrier Att		n Atter
Autos:	70.20	-4.45		0.07	-1.20	-4.		000	0.00
Medium Trucks:	81.00	-20.06		0.09	-1.20	-4.		000	0.00
Heavy Trucks:	85.38	-16.54		0.09	-1.20	-5.	38 0.0	000	0.00
Unmitigated Noise				,					
	Leq Peak Hou			q Evening	Leq I	•	Ldn	CN	
Autos:	64.		2.7	61.0		54.9	63.5		64
Medium Trucks:	59.		8.3	52.0		50.4	58.9		59
Heavy Trucks:	67.		6.3	57.3		58.5	66.9		67
Vehicle Noise:	69.	.9 6	8.3	62.9	J	60.5	69.0	J	69
Centerline Distance	e to Noise Co	ntour (in feet)							
				70 dBA	65 0		60 dBA	55 0	
			.dn: EL:	70 dBA 47 49		101 106	60 dBA 218 228		ва 471 491

	FHWA-RD	-77-108 HIGH	WAYN	OISE	PREDIC	TION M	ODEL (9	/12/20	021)		
Scenar	io: 2024+P					Project	Name: N	lajest	ic Gateway	/	
	ne: S. H St.					Job Ni	umber: 1	3923			
Road Segme	nt: n/o Panama	a Rd.									
	SPECIFIC IN	PUT DATA								s	
Highway Data				\$	Site Con	ditions (Hard =	10, So	ft = 15)		
Average Daily	Traffic (Adt):	6,858 vehicle	es				A	lutos:	15		
Peak Hour	Percentage:	10.00%			Me	dium Tru	cks (2 A	xles):	15		
Peak H	lour Volume:	686 vehicles	6		He	avy Truc	ks (3+ A	xles):	15		
Ve	hicle Speed:	50 mph		5	Vehicle I	Nix					
Near/Far La	ne Distance:	52 feet		H		cleType	1	Day	Evening	Night	Daily
Site Data				-	veni			77.5%	•		92.07
		0.0.6			M	edium Tr		34.8%		10.3%	
Barrier Type (0-W	rrier Height:	0.0 feet 0.0				leavy Tr		36.5%		10.8%	
Centerline Di	. ,	0.0 55.0 feet								10.070	0.70
Centerline Dist.		55.0 feet 55.0 feet		1	Noise So	urce Ele	evations	(in fe	et)		
Barrier Distance		0.0 feet				Autos	: 0.0	00			
		5.0 feet			Mediur	n Trucks	: 2.2	97			
Observer Height (Above Pad): ad Elevation:				Heav	y Trucks	: 8.0	04	Grade Ad	iustment	: 0.0
	ad Elevation: ad Elevation:	0.0 feet 0.0 feet		-	Lane Equ	uvalent	Distanc	o (in t	(oot)		
	ad Elevation: Road Grade:	0.0 feet 0.0%		Η	Lune Ly	Autos			000		
	Left View:				Mediu	n Trucks					
	Right View:	-90.0 degree 90.0 degree				y Trucks					
	Night view.	90.0 degree	:5		ncuv	y mucho	40.0	133			
FHWA Noise Mode	el Calculations	5									
VehicleType	REMEL	Traffic Flow	Dista		Finite		Fresne		Barrier Att		
VehicleType Autos:	REMEL 70.20	Traffic Flow -4.29	Dista	0.0	7	-1.20		4.67	0.0	000	0.00
VehicleType Autos: Medium Trucks:	REMEL 70.20 81.00	Traffic Flow -4.29 -20.06	Dista	0.0	7 9	-1.20 -1.20	-	4.67 4.87	0.0 0.0	000	0.0
VehicleType Autos:	REMEL 70.20	Traffic Flow -4.29	Dista	0.0	7 9	-1.20	-	4.67	0.0 0.0	000	0.0
VehicleType Autos: Medium Trucks: Heavy Trucks:	REMEL 70.20 81.00 85.38	Traffic Flow -4.29 -20.06 -16.54		0.0	7 9 9	-1.20 -1.20	-	4.67 4.87	0.0 0.0	000 000 000	0.00 0.00 0.00
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType	REMEL 70.20 81.00 85.38 e Levels (without Leg Peak Hou	Traffic Flow -4.29 -20.06 -16.54 Dut Topo and r Leq Day	barrier	0.0 0.0 0.0	7 9 9 uation) ivening	-1.20 -1.20	Night	4.67 4.87	0.0 0.0 0.0	000 000 000 <i>Ci</i>	0.00 0.00 0.00
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos:	REMEL 70.20 81.00 85.38 e Levels (without Leg Peak Hout 64.	Traffic Flow -4.29 -20.06 -16.54 Dut Topo and r Leq Day .8	barrier 62.9	0.0 0.0 0.0	7 9 9 <i>vening</i> 61.1	-1.20 -1.20 -1.20		4.67 4.87	0.0 0.0 0.0 <i>Ldn</i> 63.7	000 000 000 Ci	0.00 0.00 0.00 <u>VEL</u> 64
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType	REMEL 70.20 81.00 85.38 e Levels (without Leg Peak Hou	Traffic Flow -4.29 -20.06 -16.54 Dut Topo and r Leq Day .8	barrier 62.9 58.3	0.0 0.0 0.0	7 9 9 9 vening 61.1 52.0	-1.20 -1.20 -1.20	Vight 55.1 50.4	4.67 4.87	0.0 0.0 0.0 <i>Ldn</i> 63.7 58.9	000 000 000 C/ 7	0.00 0.00 0.00 NEL 64 59
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks:	REMEL 70.20 81.00 85.38 e Levels (without Leg Peak Hout 64. 59. 67.	Traffic Flow -4.29 -20.06 -16.54 Out Topo and r Leq Day .8 .7	barrier 62.9 58.3 66.3	0.0 0.0 0.0	7 9 9 vening 61.1 52.0 57.3	-1.20 -1.20 -1.20	Night 55.1 50.4 58.5	4.67 4.87	0.0 0.0 <i>Ldn</i> 63.7 58.9 66.9	000 000 000 7 7 9	0.00 0.00 0.00 NEL 64 59 67
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks:	REMEL 70.20 81.00 85.38 e Levels (without Leg Peak Hou 64. 59:	Traffic Flow -4.29 -20.06 -16.54 Out Topo and r Leq Day .8 .7	barrier 62.9 58.3	0.0 0.0 0.0	7 9 9 9 vening 61.1 52.0	-1.20 -1.20 -1.20	Vight 55.1 50.4	4.67 4.87	0.0 0.0 0.0 <i>Ldn</i> 63.7 58.9	000 000 000 7 7 9	0.00 0.00 0.00 NEL 64 59 67
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	REMEL 70.20 81.00 85.38 e Levels (without Leg Peak Hout 64. 59. 67. 70.	Traffic Flow -4.29 -20.06 -16.54 Dut Topo and r Leq Day 8 7 .0	barrier 62.9 58.3 66.3 68.4	0.0 0.0 0.0	7 9 9 vening 61.1 52.0 57.3	-1.20 -1.20 -1.20	Night 55.1 50.4 58.5	4.67 4.87	0.0 0.0 <i>Ldn</i> 63.7 58.9 66.9	000 000 000 7 7 9	0.00 0.00 0.00 NEL 64 59 67
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noiss VehicleType Autos: Medium Trucks: Heavy Trucks:	REMEL 70.20 81.00 85.38 e Levels (without Leg Peak Hout 64. 59. 67. 70.	Traffic Flow -4.29 -20.06 -16.54 Dut Topo and r Leq Day 8 .7 .0 Intour (in feet)	barrier 62.9 58.3 66.3 68.4	0.0 0.0 0.0 <i>r atten</i> Leq E	7 9 9 <u>vuation)</u> 01.1 52.0 57.3 63.0 dBA	-1.20 -1.20 -1.20	Vight 55.1 50.4 58.5 60.6	4.67 4.87 5.38	0.0 0.0 0.0 63.7 58.9 66.9 69.0 60 dBA	000 000 000 7 9 9 9 0 55	0.00 0.00 0.00 NEL 64 59 67 69 09 dBA
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	REMEL 70.20 81.00 85.38 e Levels (without Leg Peak Hout 64. 59. 67. 70.	Traffic Flow -4.29 -20.06 -16.54 Dut Topo and r Leq Day 8 .7 .0 mtour (in feet)	barrier 62.9 58.3 66.3 68.4	0.0 0.0 0.0 <i>r atten</i> Leq E	7 9 9 <u>vening</u> 61.1 52.0 57.3 63.0	-1.20 -1.20 -1.20 <i>Leq I</i>	Vight 55.1 50.4 58.5 60.6	4.67 4.87 5.38	0.0 0.0 <i>Ldn</i> 63.7 58.9 66.9	000 000 7 9 9 0 1 55	64 59 67 69

FHWA-RD-77-108 HIGHWAY	NOISE	PREDIC	TION N	ODEL (9	/12/20	021)		
Scenario: 2029 Road Name: S. H St. Road Segment: n/o Panama Rd.				Name: N umber: 1		ic Gateway		
SITE SPECIFIC INPUT DATA						L INPUTS	5	
Highway Data		Site Con	ditions	(Hard =	10, So	ft = 15)		
Average Daily Traffic (Adt): 6,686 vehicles				A	Autos:	15		
Peak Hour Percentage: 10.00%		Me	dium Tr	ucks (2 A	xles):	15		
Peak Hour Volume: 669 vehicles		He	avy Tru	cks (3+ A	xles):	15		
Vehicle Speed: 50 mph	ŀ	Vehicle I	/ix					
Near/Far Lane Distance: 52 feet	F		cleType		Dav	Evenina	Night	Daily
Site Data					77.5%		9.6%	
Barrier Height: 0.0 feet		Me	dium T	rucks:	84.8%	4.9%	10.3%	2.52%
Barrier Type (0-Wall, 1-Berm): 0.0		F	leavy T	rucks:	86.5%	2.7%	10.8%	5.67%
Centerline Dist. to Barrier: 55.0 feet	ŀ	Noise So	uree El	ovetiene	lin fo	of)		
Centerline Dist. to Observer: 55.0 feet	-	Noise 30	Auto			el)		
Barrier Distance to Observer: 0.0 feet		Madiu	n Truck					
Observer Height (Above Pad): 5.0 feet			y Truck			Grade Adj	uctmont	
Pad Elevation: 0.0 feet		neav	у писк	5. 0.0	104	Grade Auj	usuneni	0.0
Road Elevation: 0.0 feet		Lane Equ	iivalent	Distanc	e (in f	'eet)		
Road Grade: 0.0%			Auto	s: 48.7	24			
Left View: -90.0 degrees		Mediur	n Truck	s: 48.5	542			
Right View: 90.0 degrees		Heav	y Truck	s: 48.5	59			
FHWA Noise Model Calculations								
VehicleType REMEL Traffic Flow Dis	stance	Finite	Road	Fresne	e/	Barrier Atte	en Ber	m Atten
Autos: 70.20 -4.41	0.0)7	-1.20		4.67	0.0	00	0.000
Medium Trucks: 81.00 -20.03	0.0	9	-1.20		4.87	0.0	00	0.000
Heavy Trucks: 85.38 -16.51	0.0	9	-1.20		-5.38	0.0	00	0.000
Unmitigated Noise Levels (without Topo and barrie	er atter	nuation)						
VehicleType Leg Peak Hour Leg Day	Leq E	vening	Leq	Night		Ldn		VEL
						63.6		64.2
Autos: 64.7 62.8		61.0		54.9				
Medium Trucks: 59.9 58.4		52.0		50.4		58.9		59.1
Medium Trucks: 59.9 58.4 Heavy Trucks: 67.8 66.3		52.0 57.3		50.4 58.5		58.9 66.9)	59.1 67.0
Medium Trucks: 59.9 58.4		52.0		50.4		58.9)	59.1 67.0
Medium Trucks: 59.9 58.4 Heavy Trucks: 67.8 66.3		52.0 57.3 62.9		50.4 58.5 60.6		58.9 66.9 69.0)	59.1 67.0 69.3
Medium Trucks: 59.9 58.4 Heavy Trucks: 67.8 66.3 Vehicle Noise: 69.9 68.4 Centerline Distance to Noise Contour (In feet)	70	52.0 57.3 62.9 dBA	65	50.4 58.5 60.6 dBA		58.9 66.9 69.0)	59.1 67.0 69.3 dBA
Medium Trucks: 59.9 58.4 Heavy Trucks: 67.8 66.3 Vehicle Noise: 69.9 68.4	70	52.0 57.3 62.9	65	50.4 58.5 60.6		58.9 66.9 69.0)	59.1 67.0 69.3

	FHWA-RD	-77-108 HIGH	WAY	NOISE P	REDICTIO	N MODE	EL (9/12/2	021)		
Scenari	o: 2029+P				Pro	ect Nan	ne: Majest	tic Gateway	/	
Road Nam	e: S. H St.				Jo	b Numb	er: 13923			
Road Segmer	nt: n/o Panama	a Rd.								
	SPECIFIC IN	PUT DATA						L INPUT	s	
Highway Data				Si	te Conditio	ns (Har	rd = 10, So	oft = 15)		
Average Daily	Traffic (Adt):	6,905 vehicle	es				Autos:	15		
Peak Hour	Percentage:	10.00%			Medium	Trucks	(2 Axles):	15		
Peak H	our Volume:	691 vehicles	s		Heavy	Frucks (3+ Axles):	15		
Ve	hicle Speed:	50 mph		Ve	ehicle Mix	-				
Near/Far La	ne Distance:	52 feet		-	VehicleT	vpe	Day	Evening	Night	Daily
Site Data						Autos		•	9.6%	
Bar	rier Height:	0.0 feet			Mediur	n Trucks	s: 84.8%	4.9%	10.3%	2.44
Barrier Type (0-W		0.0			Heav	y Trucks	s: 86.5%	5 2.7%	10.8%	5.499
Centerline Dis	. ,	55.0 feet		-						
Centerline Dist.		55.0 feet		N	oise Sourc			eet)		
Barrier Distance		0.0 feet				utos:	0.000			
Observer Height (Above Pad):	5.0 feet			Medium Tr		2.297	Out of a dat		
e (d Elevation:	0.0 feet			Heavy Tr	JCKS:	8.004	Grade Ad	ustment.	0.0
Roa	d Elevation:	0.0 feet		Lá	ane Equiva	ent Dis	tance (in	feet)		
F	Road Grade:	0.0%			A	utos:	48.724			
	Left View:	-90.0 degree	es		Medium Tr	ucks:	48.542			
	Right View:	90.0 degree	es		Heavy Tr	ucks:	48.559			
FHWA Noise Mode	el Calculations	5								
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite Roa		resnel	Barrier Att	en Ber	m Atten
Autos:	70.20	-4.26		0.07	-1.	20	-4.67	0.0	000	0.00
Medium Trucks:	81.00	-20.03		0.09	-1.		-4.87		000	0.00
Heavy Trucks:	85.38	-16.51		0.09	-1.	20	-5.38	0.0	000	0.00
Unmitigated Noise					,		T			
	Leq Peak Hou			Leq Eve		eq Nigh.		Ldn		VEL
Autos:	64		62.9		61.1		55.1	63.		64.
Medium Trucks:	59		58.4		52.0		50.4	58.		59.
Heavy Trucks:	67	-	66.3		57.3		58.5	66.	-	67.
Vehicle Noise:	70		68.4		63.0		60.6	69.	J	69
Centerline Distanc	e to Noise Co	ntour (in feet,)	70 dE	24	65 dBA		50 dBA	FF	dBA
			Ldn:	70 BE	48		102	оо ава 221		ава 47
			Lan: NEL:		48 50		102	221		47:

Monday, November 8, 2021

	FRWA-RL	-77-108 HIGHW	ATNO	SE PREDI		DEC (9/12	/2021)		
	io: 2042						estic Gateway		
	ie: S. H St.				Job Nur	nber: 1392	23		
Road Segme	nt: n/o Panama	a Rd.							
	SPECIFIC IN	PUT DATA		0.142 0.2				5	
Highway Data				Site Co.	nditions (H		· · · ·		
Average Daily	()	6,841 vehicles				Auto			
	Percentage:	10.00%			edium Truc		,		
	lour Volume:	684 vehicles		н	eavy Truck	s (3+ Axle	s): 15		
	hicle Speed:	50 mph		Vehicle	Mix				
Near/Far La	ne Distance:	52 feet		Ve	hicleType	Day	Evening	Night	Daily
Site Data					Au	tos: 77.	5% 12.9%	9.6%	91.81
Rai	rrier Heiaht:	0.0 feet		٨	Aedium Tru	cks: 84.8	3% 4.9%	10.3%	2.52
Barrier Type (0-W		0.0			Heavy Tru	cks: 86.	5% 2.7%	10.8%	5.67
Centerline Di	st. to Barrier:	55.0 feet		Noise S	ource Elev	ations (in	feet)		
Centerline Dist.	to Observer:	55.0 feet			Autos:	0.000			
Barrier Distance	to Observer:	0.0 feet		Modi	im Trucks:	2.297			
Observer Height (Above Pad):	5.0 feet			ivy Trucks:	8.004	Grade Adj	ustment	0.0
Pa	ad Elevation:	0.0 feet		1100	ivy muchs.	0.004	erade ridj	douriont.	0.0
Roa	ad Elevation:	0.0 feet		Lane Ed	quivalent D)istance (i	n feet)		
1	Road Grade:	0.0%			Autos:	48.724			
	Left View:	-90.0 degrees		Media	um Trucks:	48.542			
	Right View:	90.0 degrees		Hea	vy Trucks:	48.559			
FHWA Noise Mode	el Calculation	5		1					
VehicleType	REMEL	Traffic Flow	Distand	e Finite	e Road	Fresnel	Barrier Atte	en Ben	m Atter
Autos:	70.20	-4.31		0.07	-1.20	-4.6	67 0.0	00	0.00
Medium Trucks:	81.00	-19.93		0.09	-1.20	-4.8	7 0.0	00	0.00
Heavy Trucks:	85.38	-16.41		0.09	-1.20	-5.3	0.0	00	0.00
Unmitigated Noise				,					
VehicleType	Leq Peak Hou			q Evening	Leq Ni	•	Ldn		IEL .
Autos:	64		2.9	61.		55.0	63.7		64
Medium Trucks:	60		3.5	52.		50.5	59.0		59
Heavy Trucks:	67		5.4	57.4		58.6	67.0		67
Vehicle Noise:	70		3.5	63.0	0	60.7	69.1		69
Centerline Distanc	ce to Noise Co	ntour (in feet)							
				70 dBA	65 dE		60 dBA	55	dBA
		L	dn:	48		103	222		47
		CNI		50		108	232		50

FHWA-RD-77-108 HIGH\	VAY NOIS	SE PREDIC		ODEL (9)	/12/202	21)		
Scenario: 2042+P			Project	Name: M	lajestic	Gateway		
Road Name: S. H St.			Job Ni	mber: 1	3923			
Road Segment: n/o Panama Rd.								
SITE SPECIFIC INPUT DATA						INPUTS	5	
Highway Data		Site Con	ditions (Hard = 1	0, Sof	t = 15)		
Average Daily Traffic (Adt): 7,060 vehicles	5				utos:	15		
Peak Hour Percentage: 10.00%			dium Tru		,	15		
Peak Hour Volume: 706 vehicles		He	avy Truc	ks (3+ A)	kles):	15		
Vehicle Speed: 50 mph		Vehicle	Mix					
Near/Far Lane Distance: 52 feet		Veh	icleType	Ľ	Day I	Evening	Night	Daily
Site Data			A	utos: 7	7.5%	12.9%	9.6%	92.07
Barrier Height: 0.0 feet		М	edium Tr	ucks: 8	84.8%	4.9%	10.3%	2.44
Barrier Type (0-Wall, 1-Berm): 0.0			Heavy Tr	ucks: 8	86.5%	2.7%	10.8%	5.49
Centerline Dist. to Barrier: 55.0 feet		Noiso S	ource Ele	wations	(in for	(#)		
Centerline Dist. to Observer: 55.0 feet		140/36 30	Autos			:0		
Barrier Distance to Observer: 0.0 feet		Madiu	m Trucks	. 0.0				
Observer Height (Above Pad): 5.0 feet			/y Trucks		÷.	Grade Adju	ustment	0.0
Pad Elevation: 0.0 feet		Tical	ry mucka	. 0.0	04 1	5/440 / 14/4	aounom.	0.0
Road Elevation: 0.0 feet		Lane Eq	uivalent	Distance	e (in fe	et)		
Road Grade: 0.0%			Autos					
Left View: -90.0 degree	5		m Trucks		42			
Right View: 90.0 degree	6	Hear	/y Trucks	: 48.5	59			
FHWA Noise Model Calculations		1						
VehicleType REMEL Traffic Flow	Distance		Road	Fresne		arrier Atte	en Ber	m Atter
Autos: 70.20 -4.17	-	0.07	-1.20		4.67	0.0		0.0
Medium Trucks: 81.00 -19.93	C	0.09	-1.20		4.87	0.0	00	0.0
Heavy Trucks: 85.38 -16.41	C	0.09	-1.20	-	5.38	0.0	00	0.0
Unmitigated Noise Levels (without Topo and b		,						
VehicleType Leq Peak Hour Leq Day		Evening	Leq I	•	1	dn		VEL
	3.0	61.2		55.2		63.8		64
	8.5	52.1		50.5		59.0		59
	6.4	57.4		58.6		67.0		67
Vehicle Noise: 70.1 6	8.5	63.1		60.7		69.1		69
						-		
Centerline Distance to Noise Contour (in feet)								
		0 dBA	65 0		60	dBA	55	dBA
	.dn: EL:	0 dBA 48 50	65 c	IBA 104 109	60	0 dBA 224 234	55	48 48 50

	FHWA-RD	-77-108 HIGH	WAY NC	ISE PREDI		IODEL (9	0/12/20	21)		
Scenario: Road Name: Road Segment:	– Panama Ln	-				Name: N lumber: 1		c Gateway		
SITE SP	ECIFIC IN	PUT DATA			1	IOISE N	IODEL	INPUTS	6	
Highway Data				Site Co	nditions	(Hard =	10, Sof	ft = 15)		
Average Daily Tra	ffic (Adt):	34,139 vehicle	es				Autos:	15		
Peak Hour Pe	rcentage:	10.00%		M	ledium Tr	ucks (2 A	xles):	15		
Peak Hour	r Volume:	3,414 vehicle	5	н	leavy Tru	cks (3+ A	xles):	15		
Vehicl	le Speed:	50 mph		Vehicle	Mix					
Near/Far Lane	Distance:	52 feet			hicleType		Dav	Evening	Night	Daily
Site Data				10			77.5%	12.9%	9.6%	
		0.0 feet			Aedium T		84.8%	4.9%	10.3%	2.52%
Barrier Type (0-Wall,	r Height:	0.0 reet			Heavy T		86.5%	2.7%	10.8%	5.67%
Centerline Dist. t	,	55.0 feet								
Centerline Dist. to (55.0 feet		Noise S		levations		et)		
Barrier Distance to (0.0 feet			Auto					
Observer Height (Ab		5.0 feet			um Truck					
÷ (Elevation:	0.0 feet		Hea	avy Truck	s: 8.0	004 (Grade Adji	ustment	0.0
	Elevation:	0.0 feet		Lane E	uivalen	t Distanc	e (in fe	eet)		
	ad Grade:	0.0%			Auto			.,		
	Left View:	-90.0 degree	s	Medi	um Truck	s: 48.5	542			
	ight View:	90.0 degree		Hea	avy Truck	s: 48.5	559			
FHWA Noise Model C	Calculations	5								
VehicleType	REMEL	Traffic Flow	Distan	ce Finit	e Road	Fresn	el E	Barrier Atte	en Ber	m Atten
Autos:	70.20	2.67		0.07	-1.20		-4.67	0.0	00	0.000
Medium Trucks:	81.00	-12.95		0.09	-1.20		-4.87	0.0	00	0.000
Heavy Trucks:	85.38	-9.43		0.09	-1.20		-5.38	0.0	00	0.000
Unmitigated Noise Le			barrier a	ttenuation)						
	q Peak Hou			q Evening		Night		Ldn		VEL
Autos:	71		69.8	68.		62.0		70.6		71.2
Medium Trucks:	66	-	65.4	59.		57.5		66.0		66.2
Heavy Trucks:	74		73.4	64.		65.6		74.0		74.1
Vehicle Noise:	77.	.0	75.5	70.	0	67.6		76.1		76.4
Centerline Distance t	o Noise Co	ntour (in feet,)		1					
Centerline Distance t	o Noise Co			70 dBA		dBA	60) dBA	55	dBA
Centerline Distance t	o Noise Co		Ldn:	70 dBA 140 146)	dBA 301 315	60	0 dBA 650 678	55	dBA 1,399 1,461

	FHWA-RD-7	7-108 HIGHWAY	NOISE	PRÉDIC	TION M	ODEL (9/12/20	021)		
Scenario: E	+P				Project	Name: I	Majest	ic Gateway	/	
Road Name: P	anama Ln.				Job Ni	imber:	13923			
Road Segment: w	/o Akers Rd	l.								
	CIFIC INP	UT DATA						L INPUT	S	
Highway Data			5	Site Con	ditions (Hard =	10, So	oft = 15)		
Average Daily Traff	ic (Adt): 35	5,126 vehicles					Autos:	15		
Peak Hour Perc	entage: 10	0.00%		Me	dium Tru	cks (2 A	Axles):	15		
Peak Hour \	/olume: 3,	513 vehicles		He	avy Truc	ks (3+ A	Axles):	15		
Vehicle	Speed:	50 mph	1	/ehicle	Mix					
Near/Far Lane D	istance:	52 feet	F		icleType		Dav	Evening	Night	Daily
Site Data						utos:	77.5%		9.6%	
Barrier	Hojaht:	0.0 feet		M	edium Tr	ucks:	84.8%	4.9%	10.3%	2.45%
Barrier Type (0-Wall, 1		0.0		F	leavy Tr	ucks:	86.5%	2.7%	10.8%	5.519
Centerline Dist. to	,	55.0 feet								
Centerline Dist. to O		55.0 feet	<u>'</u>	loise Sc	ource Ele			et)		
Barrier Distance to Ol	bserver:	0.0 feet			Autos		000			
Observer Height (Aboy		5.0 feet			m Trucks		297			
Pad El	evation:	0.0 feet		Heav	y Trucks	. 8.0	004	Grade Ad	usiment.	0.0
Road El	evation:	0.0 feet	L	ane Eq	uivalent	Distand	ce (in f	feet)		
Road	Grade:	0.0%			Autos	: 48.	724			
Le	ft View:	-90.0 degrees		Mediui	m Trucks	: 48.	542			
Rigi	ht View:	90.0 degrees		Heav	ry Trucks	: 48.	559			
FHWA Noise Model Ca	lculations									
VehicleType R	EMEL T	raffic Flow Di	istance	Finite	Road	Fresh	el	Barrier Att	en Ber	m Atten
Autos:	70.20	2.80	0.07		-1.20		-4.67		000	0.00
Medium Trucks:	81.00	-12.95	0.09		-1.20		-4.87		000	0.00
Heavy Trucks:	85.38	-9.43	0.09)	-1.20		-5.38	0.0	000	0.00
Unmitigated Noise Lev										
	Peak Hour	Leq Day	Leq Ev		Leq I	•		Ldn		VEL
Autos:	71.9	70.0		68.2		62.2		70.8		71.
Medium Trucks:	66.9	65.4		59.1		57.5		66.0		66.
Heavy Trucks: Vehicle Noise:	74.8	73.4		64.4 70.1		65.6 67.7		74.0		74.
				70.1		67.7		76.	1	76.
Centerline Distance to	Noise Cont	tour (in feet)	70 c	DA	65 c	ID A	6	0 dBA	FF	dBA
		Ldn:	700	ва 141	03 0	BA 303	-	<i>0 ав</i> А 653		ава 1.408
		CNEL:		141 147		303		653		
		UNEL:		14/		31/		082		1,470

Monday, November 8, 2021

	FHWA-RD	0-77-108 HIGHV	VAY NOIS			DDEL (9	/12/20	021)	_	_		
Scenario: 2024 Road Name: Panama Ln. Road Segment: w/o Akers Rd.					Project Name: Majestic Gateway Job Number: 13923							
	SPECIFIC IN	IPUT DATA						L INPUT	S			
Highway Data				Site Con	ditions (Hard =	10, So	ft = 15)				
Average Daily	Traffic (Adt):	35,668 vehicles					Autos:	15				
	Percentage:	10.00%			dium Tru			15				
	our Volume:	3,567 vehicles		He	avy Truc	ks (3+ A	xles):	15				
	hicle Speed:	50 mph		Vehicle I	Mix							
Near/Far La	ne Distance:	52 feet		Veh	icleType	1	Day	Evening	Night	Daily		
Site Data					A	utos:	77.5%	12.9%	9.6%	91.819		
Bai	rier Heiaht:	0.0 feet		M	edium Tru	ucks:	84.8%	4.9%	10.3%	2.52%		
Barrier Type (0-W		0.0		1	Heavy Tru	ucks:	86.5%	2.7%	10.8%	5.67%		
Centerline Dis	st. to Barrier:	55.0 feet		Noise So		wations	(in fo	nof)				
Centerline Dist.	to Observer:	55.0 feet		NUISE SC	Autos			eij				
Barrier Distance	to Observer:	0.0 feet		Modiu	m Trucks							
Observer Height (Above Pad):	5.0 feet			y Trucks			Grade Adj	iustment	0.0		
Pa	ad Elevation:	0.0 feet										
	ad Elevation:	0.0 feet		Lane Eq				eet)				
1	Road Grade:	0.0%			Autos							
	Left View:	-90.0 degrees			m Trucks							
	Right View:	90.0 degrees		Heav	ry Trucks	: 48.5	59					
FHWA Noise Mode	el Calculation	-										
VehicleType	REMEL	Traffic Flow	Distance		Road	Fresne		Barrier Atte		m Atten		
Autos:	70.20	2.86		.07	-1.20		4.67		000	0.00		
Medium Trucks:	81.00	-12.76		.09	-1.20		4.87		000	0.00		
Heavy Trucks:	85.38	-9.24	0.	.09	-1.20		-5.38	0.0	000	0.00		
Unmitigated Noise												
										VEL		
										71.		
									-	66. 74.		
										74.		
			5.0	70.2		07.0		70.0	,	70.		
Centerline Distanc	e to Noise Co	ontour (in feet)	7(dBA	65 d	BA	6	0 dBA	55	dBA		
		L	dn:	144	00 0	310		669		1.441		
		CN		150		324		698		1,504		
	Leq Peak Hou 71 67 75 77	r Leq Day .9 7 .1 6 .0 7 .2 7 mtour (in feet)	Leq 0.0 5.6 3.6 5.6 5.6 70 dn:	Evening 68.3 59.3 64.6 70.2 0 dBA 144		62.2 57.7 65.8 67.8 BA 310			3 2 2 3 55			

	FHWA-RI	D-77-108 HIGH	WAY NO	ISE PRI	EDICTION I	10DEL (9/1	2/2021)						
	o: 2024+P e: Panama Ln t: w/o Akers					t Name: Ma Number: 13	ijestic Gateway 923						
	SPECIFIC IN	IPUT DATA					DEL INPUTS	5					
Highway Data				Site	Conditions	(Hard = 10), Soft = 15)						
Average Daily 1	Traffic (Adt):	36,655 vehicle	es			Au	tos: 15						
Peak Hour I	Peak Hour Percentage: 10.00%					rucks (2 Axl	es): 15						
Peak Ho	our Volume:	3,665 vehicles	6		Heavy Tru	icks (3+ Axl	es): 15						
	nicle Speed:	50 mph		Vehi	cle Mix								
Near/Far Lan	ne Distance:	52 feet			VehicleTyp	e Da	ay Evening	Niaht I	Dailv				
Site Data							.5% 12.9%	9.6% 9	2.039				
Ban	rier Height:	0.0 feet			Medium	rucks: 84	4.8% 4.9%	10.3%	2.45				
Barrier Type (0-Wa		0.0			Heavy	rucks: 86	6.5% 2.7%	10.8%	5.529				
Centerline Dis	. ,	55.0 feet		Nois	o Couroo F	lovations (in fact)						
Centerline Dist. to Observer: 55.0 feet					Noise Source Elevations (in feet)								
Barrier Distance t	o Observer:	0.0 feet			Auto edium Truc	0.00							
Observer Height (/	Above Pad):	5.0 feet						istment: 0	0				
Pa	d Elevation:	0.0 feet			Heavy Truc	IS. 0.00	4 0/200 A0/2	Journenie o	.0				
Road Elevation: 0.0 feet					e Equivaler	t Distance	(in feet)						
Road Grade: 0.0%					Auto	os: 48.72	4						
	Left View:	-90.0 degree	es		Medium Trucks: 48.542								
	Right View:	90.0 degree	es		leavy Truc	(s: 48.55	9						
FHWA Noise Mode	I Calculation	s											
VehicleType	REMEL	Traffic Flow	Distan	ce F	inite Road	Fresnel	Barrier Atte	n Berm	Atten				
Autos:	70.20	2.99		0.07	-1.20		.67 0.00	00	0.00				
Medium Trucks:	81.00	-12.76		0.09	-1.20	-4	.87 0.00	00	0.00				
Heavy Trucks:	85.38	-9.24		0.09	-1.20	-5	.38 0.00	00	0.00				
Unmitigated Noise	Levels (with	out Topo and	barrier a	ttenuati	on)								
VehicleType	Leq Peak Hou			q Evenii		Night	Ldn	CNE					
Autos:	72		70.2		68.4	62.3	71.0		71.				
	67	.1	65.6		59.3	57.7	66.2		66				
Medium Trucks:	•••				64.6	65.8	74.2		74.				
Heavy Trucks:	75	-	73.6										
	•••	-	73.6 75.7		70.3	67.9	76.3		76.				
Heavy Trucks:	75	.2	75.7			67.9	76.3		76.				
Heavy Trucks: Vehicle Noise:	75	.2 ontour (in feet,	75.7	70 dBA	70.3	dBA	60 dBA	55 dE	BA				
Heavy Trucks: Vehicle Noise:	75	.2 ontour (in feet,	75.7	70 dBA	70.3				76. 3A 1,449 1.513				

FHW	4-RD-7	7-108 HIGH	WAY	NOISE	PREDIC		IODEL (9	9/12/20	021)				
Scenario: 2029 Road Name: Panama Ln. Road Segment: w/o Akers Rd.					Project Name: Majestic Gateway Job Number: 13923								
SITE SPECIFI	C INPU	JT DATA							L INPUTS	3			
Highway Data				÷	Site Con	ditions	(Hard =	10, Sc	oft = 15)				
Average Daily Traffic (Ad	t): 37	,159 vehicle	es				A	Autos:	15				
Peak Hour Percentag	<i>je:</i> 10	0.00%			Me	dium Tr	ucks (2 A	xles):	15				
Peak Hour Volum	ie: 3,	716 vehicle	s		He	avy Tru	cks (3+ A	xles):	15				
Vehicle Spee	ed:	50 mph		1	Vehicle I	Mix							
Near/Far Lane Distand	e:	52 feet		-		icleTvpe		Dav	Evening	Niaht	Daily		
Site Data	ite Data							77.5%	•	9.6%			
Barrier Heigi	ht.	0.0 feet			Me	edium T	rucks:	84.8%	4.9%	10.3%	2.52		
Barrier Type (0-Wall, 1-Berr		0.0			ŀ	leavy T	rucks:	86.5%	2.7%	10.8%	5.67		
Centerline Dist. to Barri		55.0 feet		H	Noise So	uree El	overtiene	lin fe	ati				
Centerline Dist. to Observ	er:	55.0 feet		Ľ	NUISE SU	Auto			el)				
Barrier Distance to Observ	er:	0.0 feet			Madin	Auto n Truck							
Observer Height (Above Pa	d):	5.0 feet						297 004	Grade Adj	unternent			
Pad Elevation	on:	0.0 feet			neav	y Truck	s. o.u	104	Grade Auj	usuneni	0.0		
Road Elevation	on:	0.0 feet		1	Lane Equ	uivalent	t Distanc	e (in i	feet)				
Road Grad	le: 0	0.0%				Auto	s: 48.7	724					
Left Vie	w: -	90.0 degree	es		Medium Trucks: 48.542								
Right Vie	W:	90.0 degree	es		Heav	y Truck	s: 48.5	559					
FHWA Noise Model Calcula	tions												
VehicleType REMEL	. Ti	raffic Flow	Dis	stance	Finite	Road	Fresn	el	Barrier Atte	en Ber	m Atter		
	0.20	3.03		0.0		-1.20		-4.67	0.0		0.0		
	1.00	-12.58		0.0	-	-1.20		-4.87	0.0		0.00		
Heavy Trucks: 85	5.38	-9.06		0.0	9	-1.20		-5.38	0.0	00	0.00		
Unmitigated Noise Levels (without	Topo and	barri	er atten	uation)								
VehicleType Leq Peak		Leq Day		Leq E	vening	Leq	Night		Ldn		VEL		
Autos:	72.1		70.2		68.4		62.4		71.0		71		
Medium Trucks:	67.3		65.8		59.4		57.9		66.4		66		
Heavy Trucks:	75.2		73.8		64.7		66.0		74.4		74		
Vehicle Noise:	77.4		75.8		70.4		68.0		76.5		76		
Centerline Distance to Nois	e Cont	our (in feet,)					1					
			L	70 0	dBA	65	dBA	6	0 dBA	55	dBA		
			Ldn:		148		319		687		1,48		
			NEL		155		333		717		1.54		

	FHWA-RD	-77-108 HIGHV	AY NOIS	SE PREDIC		IODEL	(9/12/2	021)				
Scenan Road Nam Road Segmer	Project Name: Majestic Gateway Job Number: 13923											
SITE	SPECIFIC IN	PUT DATA			N	IOISE	MODE		S			
Highway Data				Site Con	ditions	(Hard =	= 10, Sc	oft = 15)				
Average Daily	Traffic (Adt):					Autos:	15					
Peak Hour	Peak Hour Percentage: 10.00%					ucks (2	Axles):	15				
	our Volume:		He	avy Tru	cks (3+	, Axles):	15					
Ve	hicle Speed:	50 mph		Vehicle I	Aiw							
Near/Far La	ne Distance:	52 feet			icleType		Dav	Evening	Night	Daily		
Site Data				ven		Autos: 77.5% 12.9% 9.6% 92.0						
				M	, edium T		84.8%		10.3%	2.459		
	Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0					rucks:	86.5%		10.3%	5.529		
		0.0		,	icuvy i	ucho.	00.37	2.170	10.070	0.02		
Centerline Di		55.0 feet 55.0 feet		Noise Sc	urce El	levation	ns (in fe	eet)				
Centerline Dist.	Autos: 0.000											
Barrier Distance to Observer: 0.0 feet				Medium Trucks: 2.297								
Observer Height (,	5.0 feet		Heav	y Truck	s: 8	.004	Grade Adj	iustment.	0.0		
	ad Elevation: ad Elevation:	0.0 feet 0.0 feet		Lano Eq	ivalor	Dictor	co (in	foot)				
	Lane Equivalent Distance (in feet) Autos: 48.724											
Road Grade: 0.0% Left View: -90.0 degrees				Medium Trucks: 48.542								
	Right View:	90.0 degrees			y Truck		.559					
FHWA Noise Mode	el Calculations	3										
VehicleType	REMEL	Traffic Flow	Distance	e Finite	Road	Fres	nel	Barrier Atte	en Ber	m Atten		
Autos:	70.20	3.16	C	0.07	-1.20		-4.67	0.0	000	0.00		
Medium Trucks:	81.00	-12.58	C	0.09	-1.20		-4.87	0.0	000	0.00		
Heavy Trucks:	85.38	-9.06		0.09	-1.20		-5.38	0.0	000	0.00		
Unmitigated Noise			-	,								
VehicleType	Leq Peak Hou			Evening	Leq	Night		Ldn		VEL		
Autos:	72.	- ·	0.3	68.6		62.	-	71.1		71.		
Medium Trucks:	67.		5.8	59.4		57.		66.4		66.		
Heavy Trucks:	75.		3.8	64.7		66.	-	74.4		74.		
Vehicle Noise:	77.		5.9	70.4		68.	0	76.5	5	76		
Centerline Distand	e to Noise Co	ntour (in feet)	7	0 dBA	65	dBA	4	60 dBA	FF	dBA		
		,	dn:		00	ава 32 [.]						
		CN		149 155		32		691 722		1,489		
		CN		155		33	2	122		1,555		

Monday, November 8, 2021

FHWA	RD-77-108 HI	GHWAY N	OISE P	REDIC	TION MC	DDEL (9)	/12/20	21)		
Scenario: 2042 Road Name: Panama Road Segment: w/o Ake		Project Name: Majestic Gateway Job Number: 13923								
SITE SPECIFIC	INPUT DAT	A							S	
Highway Data			Si	te Cond	ditions (l	Hard = 1	0, So	ft = 15)		
Average Daily Traffic (Adt)	42,453 veh	icles					utos:	15		
Peak Hour Percentage					dium True			15		
Peak Hour Volume	1 -			Hea	avy Truck	(3+ A)	(les):	15		
Vehicle Speed			Ve	ehicle N	lix					
Near/Far Lane Distance	52 feet			Vehi	cleType	Ľ	Day	Evening	Night	Daily
Site Data					A	utos: 7	7.5%	12.9%	9.6%	91.81
Barrier Height	: 0.0 feet			Me	dium Tru	icks: 8	4.8%	4.9%	10.3%	2.52
Barrier Type (0-Wall, 1-Berm)				h	leavy Tru	icks: 8	6.5%	2.7%	10.8%	5.67
Centerline Dist. to Barrier	: 55.0 feet		N	nisa Sa	urce Ele	vations	(in fo	of)		
Centerline Dist. to Observer	: 55.0 feet			0130 00	Autos:			01/		
Barrier Distance to Observer	: 0.0 feet			Medium	n Trucks:					
Observer Height (Above Pad)	: 5.0 feet				y Trucks:			Grade Ad	iustment	0.0
Pad Elevation	0.0 feet									
Road Elevation			La	ane Equ	ivalent l			eet)		
Road Grade	0.070				Autos:					
Left View	· 00.0 dog	rees			n Trucks:					
Right View	: 90.0 deg	rees		Heav	y Trucks:	48.5	59			
FHWA Noise Model Calculati	ons									
VehicleType REMEL	Traffic Flow	v Dista	ince	Finite	Road	Fresne	e/ 1	Barrier Att	en Ber	m Atter
Autos: 70.	20 3.	61	0.07		-1.20		4.67	0.0	000	0.0
Medium Trucks: 81.			0.09		-1.20		4.87		000	0.00
Heavy Trucks: 85.	38 -8.4	48	0.09		-1.20	-	5.38	0.0	000	0.00
Unmitigated Noise Levels (w	thout Topo ar	nd barrier	attenu	ation)						
VehicleType Leq Peak F			Leq Eve		Leq N			Ldn		VEL
Autos:	72.7	70.8		69.0		63.0		71.6		72
	67.9	66.4		60.0		58.5		66.9		67
	75.8	74.4		65.3		66.6		74.9		75
Vehicle Noise:	78.0	76.4		70.9		68.6		77.0)	77
Centerline Distance to Noise	Contour (in fe	et)								
			70 dE	BA	65 d	BA	6	0 dBA	55	dBA
		Ldn: CNEL:		162 169		349 364		751 784		1,61 1.68

FHWA-RD-	77-108 HIGHWA	Y NOISE	E PREDIC		ODEL (9/	12/20	21)		
Scenario: 2042+P Road Name: Panama Ln. Road Segment: w/o Akers R	Project Name: Majestic Gateway Job Number: 13923								
SITE SPECIFIC INP	UT DATA						INPUTS	;	
Highway Data			Site Con	ditions	(Hard = 10	0, Sof	ft = 15)		
Average Daily Traffic (Adt): 4	3,440 vehicles				AL	utos:	15		
Peak Hour Percentage: 1	0.00%		Me	dium Tru	ıcks (2 Ax	les):	15		
Peak Hour Volume: 4	1,344 vehicles		He	avy Truc	:ks (3+ Ax	les):	15		
Vehicle Speed:	50 mph	ŀ	Vehicle I	Mix					
Near/Far Lane Distance:	52 feet			icleType	D	ay	Evening	Night	Daily
Site Data				A	utos: 7	7.5%	12.9%	9.6%	92.00
Barrier Height:	0.0 feet		Me	edium Tr	ucks: 84	4.8%	4.9%	10.3%	2.46
Barrier Type (0-Wall, 1-Berm):	0.0		F	leavy Tr	ucks: 86	6.5%	2.7%	10.8%	5.54
Centerline Dist. to Barrier:	55.0 feet	-	Noiso Se	urco El	evations ((in for	of)		
Centerline Dist. to Observer:	55.0 feet	-	140/36 30	Autos			50		
Barrier Distance to Observer:	0.0 feet		Madiu	m Trucks	. 0.00				
Observer Height (Above Pad):	5.0 feet			y Trucks			Grade Adji	istment	0.0
Pad Elevation:	0.0 feet			·					0.0
Road Elevation:		Lane Eq	uivalent	Distance	(in fe	eet)			
Road Grade:	0.0%			Autos		24			
Left View:	-90.0 degrees			m Trucks					
Right View:	90.0 degrees		Heav	y Trucks	s: 48.55	59			
FHWA Noise Model Calculations									
VehicleType REMEL	Traffic Flow D	Distance	Finite	Road	Fresnel	I E	Barrier Atte	n Ber	m Atter
Autos: 70.20	3.72	0.0)7	-1.20	-4	4.67	0.0	00	0.0
Medium Trucks: 81.00	-12.00	0.0)9	-1.20	-4	4.87	0.0	00	0.0
Heavy Trucks: 85.38	-8.48	0.0	09	-1.20	-5	5.38	0.0	00	0.0
Unmitigated Noise Levels (withou	ut Topo and barı	rier atter	nuation)						
VehicleType Leq Peak Hour			vening	Leq	Night		Ldn	CI	VEL
Autos: 72.8			69.1		63.1		71.7		72
Medium Trucks: 67.9			60.0		58.5		66.9		67
Heavy Trucks: 75.8			65.3		66.6		74.9		75
Vehicle Noise: 78.0) 76.4	1	71.0		68.6		77.1		77
Centerline Distance to Noise Con	tour (in feet)								
Centernine Distance to Noise Con			dBA	GE .	dBA	60) dBA	55	dBA
Centernine Distance to Noise Con				00 0					-
Centenine Distance to Noise Con	Ldn. CNEL		163 170	05 (350 366		755		1,62

FHWA-RI	D-77-108 HIGHWAY	Y NOISE	PREDICT		ODEL (9	/12/20)21)		
Scenario: E Road Name: Panama Lr Road Segment: w/o Wible F					Name: N umber: 1		ic Gateway		
SITE SPECIFIC IN	IPUT DATA			N	OISE N	IODE	L INPUTS	6	
Highway Data		S	Site Cond	litions ('Hard = '	10, So	ft = 15)		
Average Daily Traffic (Adt):	31,594 vehicles				A	Autos:	15		
Peak Hour Percentage:	10.00%		Med	ium Tru	icks (2 A	xles):	15		
Peak Hour Volume:	3,159 vehicles		Hea	vy Truc	ks (3+ A	xles):	15		
Vehicle Speed:	50 mph	1	/ehicle M	iv					
Near/Far Lane Distance:	52 feet	- F		leType		Dav	Evening	Night	Daily
Site Data			vonio			77.5%	•	9.6%	
Barrier Height:	0.0 feet		Me	dium Tr	ucks:	84.8%	4.9%	10.3%	2.52%
Barrier Type (0-Wall, 1-Berm):	0.0		Н	eavy Tr	ucks:	B6.5%	2.7%	10.8%	5.67%
Centerline Dist. to Barrier:	55.0 feet			· ·					
Centerline Dist. to Observer:	55.0 feet	^	Voise Sou				et)		
Barrier Distance to Observer:	0.0 feet			Autos					
Observer Height (Above Pad):	5.0 feet		Medium						
Pad Elevation:	0.0 feet		Heavy	Trucks	8.0	104	Grade Adj	ustment.	0.0
Road Elevation:	0.0 feet	L	ane Equ	ivalent	Distanc	e (in f	eet)		
Road Grade:	0.0%			Autos	: 48.7	24			
Left View:	-90.0 degrees		Medium	Trucks	: 48.5	542			
Right View:	90.0 degrees		Heavy	Trucks	: 48.5	59			
FHWA Noise Model Calculation	s	I							
VehicleType REMEL	Traffic Flow Di	istance	Finite F	Road	Fresne	e/	Barrier Atte	en Ber	m Atten
Autos: 70.20	2.33	0.07		-1.20		4.67	0.0		0.000
Medium Trucks: 81.00	-13.29	0.09		-1.20		4.87	0.0		0.000
Heavy Trucks: 85.38	-9.76	0.09	9	-1.20		-5.38	0.0	00	0.000
Unmitigated Noise Levels (with	out Topo and barn	ier atten	uation)						
VehicleType Leq Peak Hou	ır Leq Day	Leq Ev	rening	Leq I	Vight		Ldn	CI	VEL
Autos: 71	.4 69.5		67.7		61.7		70.3		70.9
Medium Trucks: 66			58.7		57.2		65.7		65.9
Heavy Trucks: 74			64.0		65.3		73.6		73.8
Vehicle Noise: 76	.7 75.1		69.6		67.3		75.7		76.0
Centerline Distance to Noise Co	ontour (in feet)								
		70 a		65 c		6	i0 dBA	55	dBA
	Ldn:		133		286		617		1,329
	CNEL:		139		299		644		1.387

0		7-108 HIGH\		_					,		
Scenario:									ic Gateway	/	
Road Name:						Job N	lumber:	13923			
Road Segment:	W/O WIDIE Rd										
	ECIFIC INP	UT DATA							L INPUT	5	
Highway Data				Si	te Con	ditions	(Hard =	10, So	oft = 15)		
Average Daily Tra	affic (Adt): 32	2,471 vehicle	5					Autos:	15		
Peak Hour Pe	rcentage: 1	0.00%			Mee	dium Tr	ucks (2	Axles):	15		
Peak Hou	r Volume: 3	,247 vehicles			Hei	avy Tru	cks (3+ .	Axles):	15		
Vehic	le Speed:	50 mph		Ve	hicle N	Nix					
Near/Far Lane	Distance:	52 feet		-		cleTvpe	•	Dav	Evening	Night	Dailv
Site Data							Autos:	77.5%		9.6%	
Barrie	er Heiaht:	0.0 feet			Me	edium T	rucks:	84.8%	4.9%	10.3%	2.45%
Barrier Type (0-Wall		0.0			F	leavy T	rucks:	86.5%	2.7%	10.8%	5.529
Centerline Dist.	,	55.0 feet		_							
Centerline Dist. to		55.0 feet		No	oise So		levation		eet)		
Barrier Distance to		0.0 feet				Auto		000			
Observer Height (Ab		5.0 feet				n Truck		297			
	Elevation:	0.0 feet			Heav	y Truck	s: 8.	004	Grade Ad	ustment	0.0
Road	Elevation:	0.0 feet		Lá	ne Equ	iivalen	t Distan	ce (in	feet)		
		0.0%				Auto	s: 48	.724	,		
	Left View:	-90.0 degree	5		Mediur	n Truck	s: 48	.542			
R	ight View:	90.0 degree	5		Heav	y Truck	s: 48	.559			
FHWA Noise Model (
		raffic Flow	Dis	tance	Finite		Fresi	-	Barrier Att		m Atten
Autos:	70.20	2.46		0.07		-1.20		-4.67		000	0.00
Medium Trucks:	81.00	-13.29		0.09		-1.20		-4.87		000	0.00
Heavy Trucks:	85.38	-9.76		0.09		-1.20		-5.38	0.0	000	0.00
Unmitigated Noise L	evels (withou	t Topo and k	arrie	r attenu	ation)						
	q Peak Hour	Leq Day		Leq Eve		Leq	Night		Ldn		VEL
Autos:	71.5	-	9.6		67.9		61.		70.4		71.
Medium Trucks:	66.6		5.1		58.7		57.		65.1		65.
Heavy Trucks:	74.5		3.1		64.0		65.	-	73.6		73.
Vehicle Noise:	76.7	7	5.2		69.7		67.	3	75.8	3	76.
Centerline Distance	to Noise Con	tour (in feet)									
				70 dE	BA	65	dBA	6	60 dBA	55	dBA
		L	.dn:		134		288	3	620		1,337
			EL:		140		301		648		1,396

Monday, November 8, 2021

FHWA-R	D-77-108 HIGHWA	Y NOISE			DDEL (9)	/12/20	21)		_
Scenario: 2024 Road Name: Panama Li Road Segment: w/o Wible					Vame: M mber: 13		Gateway	/	
SITE SPECIFIC II	NPUT DATA						INPUT:	S	
Highway Data			Site Con	ditions (l		.,	,		
Average Daily Traffic (Adt):	32,939 vehicles					utos:	15		
Peak Hour Percentage:	10.00%			dium True			15		
Peak Hour Volume:	3,294 vehicles		He	avy Truck	(s (3+ A)	xles):	15		
Vehicle Speed:	50 mph		Vehicle I	Aix					
Near/Far Lane Distance:	52 feet	-	Veh	cleType	L	Day	Evening	Night	Daily
Site Data				A	utos: 7	7.5%	12.9%	9.6%	91.819
Barrier Height:	0.0 feet		Me	edium Tru	icks: 8	34.8%	4.9%	10.3%	2.52%
Barrier Type (0-Wall, 1-Berm):	0.0		ŀ	leavy Tru	icks: 8	86.5%	2.7%	10.8%	5.67%
Centerline Dist. to Barrier:	55.0 feet	-	Noise So	urco Elo	vations	(in for	at)		
Centerline Dist. to Observer:	55.0 feet	-	10/30 00	Autos					
Barrier Distance to Observer:	0.0 feet		Mediu	n Trucks	0.01				
Observer Height (Above Pad):	5.0 feet			v Trucks.			Grade Ad	iustment	0.0
Pad Elevation:	0.0 feet								
Road Elevation:	0.0 feet	_	Lane Eq				eet)		
Road Grade:	0.0%			Autos:					
Left View:	-90.0 degrees			n Trucks:					
Right View:	90.0 degrees		Heav	y Trucks:	48.5	59			
FHWA Noise Model Calculation	-								
VehicleType REMEL		Distance	Finite		Fresne		Barrier Atte		m Atten
Autos: 70.20		0.0		-1.20		4.67		000	0.00
Medium Trucks: 81.00		0.0		-1.20		4.87		000	0.00
Heavy Trucks: 85.38	-9.58	0.0	9	-1.20	-	5.38	0.0	000	0.00
Unmitigated Noise Levels (with									
VehicleType Leq Peak Ho			vening	Leq N	•		Ldn		IEL
	1.6 69.7		67.9		61.9		70.5		71.
	3.8 65.3		58.9		57.4		65.8		66.
	4.7 73.3		64.2		65.5		73.8	-	74.
Vehicle Noise: 76	3.9 75.3	5	69.8		67.5		75.9	9	76.
Centerline Distance to Noise C	ontour (in feet)								
			dBA	65 d		60) dBA		dBA
	Ldn.		137		294		634		1,366
	CNEL	:	143		307		662		1,426

	FHWA-RI	D-77-108 HIGH	IWAY NO	ISE PRE		IODEL (9	/12/2	021)		
Scena	rio: 2024+P				Project	Name: N	/lajest	ic Gateway	/	
Road Nar	ne: Panama Lr	1.			Job N	umber: 1	3923			
Road Segme	ent: w/o Wible F	Rd.								
	SPECIFIC IN	IPUT DATA						L INPUT	S	
Highway Data				Site	Conditions	(Hard = :	10, So	oft = 15)		
Average Daily	Traffic (Adt):	33,816 vehicle	es			A	Autos:	15		
Peak Hou	r Percentage:	10.00%			Medium Tri	ucks (2 A	xles):	15		
Peak I	Hour Volume:	3,382 vehicle	s		Heavy True	cks (3+ A	xles):	15		
Ve	ehicle Speed:	50 mph		Vohi	cle Mix					
Near/Far La	ane Distance:	52 feet			VehicleType		Day	Evening	Night	Daily
Site Data				-			77.5%	•	9.6%	
					/ Medium T		77.5% 84.8%		9.6%	
	arrier Height:	0.0 feet			Heavy T		84.8% 86.5%		10.3%	
Barrier Type (0-V	. ,	0.0			neavy n	UCKS.	00.0%	2.170	10.0%	5.52
	ist. to Barrier:	55.0 feet		Nois	e Source El	evations	; (in fe	eet)		
Centerline Dist.		55.0 feet			Auto	s: 0.0	000			
Barrier Distance		0.0 feet		M	edium Truck	s: 2.2	97			
Observer Height	, ,	5.0 feet		ŀ	leavy Truck	s: 8.0	04	Grade Ad	iustmen	: 0.0
	Pad Elevation:	0.0 feet		-						
Ro	ad Elevation:	0.0 feet		Lane	Equivalent			teet)		
	Road Grade:	0.0%			Auto					
	Left View:	-90.0 degre			edium Truck					
	Right View:	90.0 degre	es		leavy Truck	s: 48.5	559			
FHWA Noise Mod	lel Calculation	s								
VehicleType	REMEL	Traffic Flow	Distan		nite Road	Fresne	e/	Barrier Att	en Be	rm Attei
Autos										
		2.64		0.07	-1.20		4.67		000	
Medium Trucks	81.00	-13.10		0.09	-1.20		4.87	0.0	000	0.0
Medium Trucks Heavy Trucks	81.00 85.38	-13.10 -9.58		0.09 0.09	-1.20 -1.20			0.0		0.0
Medium Trucks: Heavy Trucks: Unmitigated Nois	81.00 85.38 e Levels (with	-13.10 -9.58 out Topo and	barrier a	0.09 0.09 ttenuatio	-1.20 -1.20		4.87	0.0	000	0.0
Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType	81.00 85.38 e Levels (with Leq Peak Hou	-13.10 -9.58 out Topo and Ir Leq Day	barrier a	0.09 0.09 ttenuation of Evenir	-1.20 -1.20 on) g Leq	Night	-4.87 -5.38	0.0 0.0 Ldn	000 000 C	0.0 0.0 NEL
Medium Trucks. Heavy Trucks. Unmitigated Nois VehicleType Autos:	81.00 85.38 E Levels (with Leq Peak Hou 71	-13.10 -9.58 out Topo and ir Leq Day .7	barrier a / Le 69.8	0.09 0.09 ttenuation of Evenir	-1.20 -1.20 on) ig Leq 58.0	Night 62.0	-4.87 -5.38	0.0 0.0 <i>Ldn</i> 70.6	000 000 C	0.0 0.0 NEL 71
Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks:	81.00 85.38 E Levels (with Leg Peak Hou 71 66	-13.10 -9.58 out Topo and ir Leq Day .7 5.8	barrier a / Le 69.8 65.3	0.09 0.09 ttenuation of Evenir	-1.20 -1.20 on) g Leq 58.0 58.9	Night 62.0 57.4	-4.87 -5.38	0.0 0.0 <i>Ldn</i> 70.0 65.8	000 000 C	0.0 0.0 NEL 71 66
Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks:	81.00 85.38 E Levels (with Leg Peak Hou 71 66 74	-13.10 -9.58 out Topo and ir Leq Day .7 5.8 5.7	barrier a / Le 69.8 65.3 73.3	0.09 0.09 ttenuation of Evenir	-1.20 -1.20 on) g Leq 58.0 58.9 54.2	Night 62.0 57.4 65.5	-4.87 -5.38	0.0 0.0 <u>Ldn</u> 70.6 65.8 73.8	000 000 200 3 3 3	0.0 0.0 NEL 71 66 74
Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks:	81.00 85.38 E Levels (with Leg Peak Hou 71 66 74	-13.10 -9.58 out Topo and ir Leq Day .7 5.8 5.7	barrier a / Le 69.8 65.3	0.09 0.09 ttenuation of Evenir	-1.20 -1.20 on) g Leq 58.0 58.9	Night 62.0 57.4	-4.87 -5.38	0.0 0.0 <i>Ldn</i> 70.0 65.8	000 000 200 3 3 3	0.0 0.0 <u>NEL</u> 71 66 72
Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks:	81.00 85.38 Re Levels (with Leg Peak Hou 71 66 74 74	-13.10 -9.58 out Topo and rr Leq Day .7 8.8 1.7 6.9	barrier a / Le 69.8 65.3 73.3 75.3	0.09 0.09 ttenuation og Evenir	-1.20 -1.20 on) g Leq 38.0 58.9 54.2 59.9	Night 62.0 57.4 65.5 67.5	-4.87 -5.38	0.0 0.0 70.6 65.8 73.8 76.0	000 000 3 3 3 0	0.0 0.0 NEL 71 66 72 76
Medium Trucks. Heavy Trucks. Unmitigated Noiss VehicleType Autos: Medium Trucks. Heavy Trucks. Vehicle Noise.	81.00 85.38 Re Levels (with Leg Peak Hou 71 66 74 74	-13.10 -9.58 out Topo and rr Leq Day .7 8.8 1.7 6.9	barrier a / Le 69.8 65.3 73.3 75.3	0.09 0.09 ttenuation q Evenir (((((((((((((((((((-1.20 -1.20 on) <u>g Leq</u> 38.0 58.9 54.2 59.9 65	Night 62.0 57.4 65.5 67.5 dBA	-4.87 -5.38	0.0 0.0 70.0 65.8 73.8 76.0	000 000 3 3 3 0 55	0.0 0.0 NEL 71 66 74 76 74 76
Medium Trucks. Heavy Trucks. Unmitigated Noiss VehicleType Autos: Medium Trucks. Heavy Trucks. Vehicle Noise.	81.00 85.38 Re Levels (with Leg Peak Hou 71 66 74 74	-13.10 -9.58 out Topo and ir Leg Day .7 .8 .9 .9 ontour (in feet	barrier a / Le 69.8 65.3 73.3 75.3	0.09 0.09 ttenuatii q Evenir (g g g g g g g g g g g g g g g g g g	-1.20 -1.20 on) g Leq 38.0 58.9 54.2 59.9	Night 62.0 57.4 65.5 67.5	-4.87 -5.38	0.0 0.0 70.6 65.8 73.8 76.0	000 000 3 3 3 0 55	71 66 74 76

FHWA-RD-7	7-108 HIGHWAY	' NOISE	PREDIC		IODEL (9	/12/20	021)		
Scenario: 2029 Road Name: Panama Ln. Road Segment: w/o Wible Rd.					Name: N lumber: 1		ic Gateway		
SITE SPECIFIC INPU	JT DATA			N	IOISE N	IODE	L INPUTS	6	
Highway Data		5	Site Con	ditions	(Hard =	10, So	ft = 15)		
Average Daily Traffic (Adt): 34	,047 vehicles					Autos:	15		
Peak Hour Percentage: 10	.00%		Me	dium Tr	ucks (2 A	xles):	15		
Peak Hour Volume: 3,4	405 vehicles		He	avy Tru	cks (3+ A	xles):	15		
Vehicle Speed:	50 mph		Vehicle I	Mix					
Near/Far Lane Distance:	52 feet	P		icleType		Dav	Evening	Night	Daily
Site Data			VCIII			77.5%	•	9.6%	
	0.0 feet		Me	edium T		B4.8%		10.3%	2.52%
Barrier Height: Barrier Type (0-Wall, 1-Berm):	0.0 reet		ŀ	Heavy T		B6.5%		10.8%	5.67%
	55.0 feet								
	55.0 feet	/	Noise So				et)		
Barrier Distance to Observer:	0.0 feet			Auto					
Observer Height (Above Pad):	5.0 feet			m Truck					
Pad Elevation:	0.0 feet		Heav	ry Truck	s: 8.0	104	Grade Adji	ustment.	0.0
Road Elevation:	0.0 feet	1	Lane Eq	uivalen	Distanc	e (in f	eet)		
	0.0%			Auto			,		
	90.0 degrees		Mediui	m Truck	s: 48.5	642			
	90.0 degrees		Heav	ry Truck	s: 48.5	59			
FHWA Noise Model Calculations									
VehicleType REMEL Ti	raffic Flow Di	stance	Finite	Road	Fresn	e/	Barrier Atte	en Ber	m Atten
Autos: 70.20	2.65	0.0	7	-1.20		4.67	0.0	00	0.000
Medium Trucks: 81.00	-12.96	0.09	9	-1.20		4.87	0.0	00	0.000
Heavy Trucks: 85.38	-9.44	0.09	9	-1.20		-5.38	0.0	00	0.000
Unmitigated Noise Levels (without	Topo and barri	er atten	uation)						
VehicleType Leq Peak Hour	Leq Day	Leg Ev		Leq	Night		Ldn		VEL
Autos: 71.7	69.8		68.1		62.0		70.6		71.2
Medium Trucks: 66.9	65.4		59.1		57.5		66.0		66.2
Heavy Trucks: 74.8	73.4		64.4		65.6		74.0		74.1
Vehicle Noise: 77.0	75.4		70.0		67.6		76.1		76.4
Centerline Distance to Noise Conte	our (in feet)								
		70 c		65	dBA	6	i0 dBA	55	dBA
									1.397
	Ldn: CNEL:		140 146		301 314		648 677		1,397

		'-108 HIGHWA	AT NUISE							
Scenario: 2								ic Gateway	'	
Road Name: F					Job N	umber:	13923			
Road Segment: v	v/o Wible Rd.									
	ECIFIC INPU	T DATA						L INPUT	5	
Highway Data				Site Con	ditions	(Hard =	10, So	oft = 15)		
Average Daily Trat	fic (Adt): 34,	924 vehicles					Autos:	15		
Peak Hour Per	centage: 10	.00%		Mee	dium Tri	ucks (2 /	Axles):	15		
Peak Hour	Volume: 3,4	92 vehicles		Hea	avy Tru	cks (3+)	Axles):	15		
Vehicle	e Speed:	50 mph		Vehicle N	Nix					
Near/Far Lane D	Distance:	52 feet			cleTvpe		Dav	Evening	Night	Daily
Site Data						Autos:	77.5%		9.6%	
	·Height:	0.0 feet		Me	edium Ti	rucks:	84.8%	4.9%	10.3%	2.46%
Barrier Type (0-Wall,		0.0		F	leavy T	rucks:	86.5%		10.8%	
Centerline Dist. to	,	55.0 feet								
Centerline Dist. to C		55.0 feet		Noise So				eet)		
Barrier Distance to C		0.0 feet			Auto		000			
Observer Height (Abo		5.0 feet			n Truck		297			
	levation:	0.0 feet		Heav	y Truck	s: 8.	004	Grade Adj	ustment.	0.0
	levation:	0.0 feet		Lane Equ	ivalent	Distan	ce (in t	feet)		
		.0%			Auto		724	,		
		0.0 degrees		Mediur	n Truck	s: 48.	542			
Rig		0.0 degrees		Heav	y Truck	s: 48.	559			
FHWA Noise Model C	alculations									
VehicleType F	REMEL Tr	affic Flow	Distance	Finite	Road	Fresr	el	Barrier Atte	en Ber	m Atten
Autos:	70.20	2.77	0.0		-1.20		-4.67		000	0.00
Medium Trucks:	81.00	-12.96	0.0		-1.20		-4.87		000	0.00
Heavy Trucks:	85.38	-9.44	0.0	09	-1.20		-5.38	0.0	000	0.00
Unmitigated Noise Le			1	,						
	Peak Hour	Leq Day		evning	Leq	Night		Ldn		VEL
Autos:	71.8	69.		68.2		62.1		70.7		71.
Medium Trucks:	66.9	65.		59.1		57.8		66.0		66.
Heavy Trucks:	74.8	73.		64.4		65.6		74.0		74.
Vehicle Noise:	77.0	75.	5	70.0		67.7	,	76.1		76.
Centerline Distance to	Noise Conto	our (in feet)	-							
				dBA	65	dBA	-	i0 dBA		dBA
		Ldr		140		303		652		1,404
		CNEI		147		316		681		1.466

Monday, November 8, 2021

	FHWA-RD	0-77-108 HIGH	WAY N	OISE	PREDIC		ODEL (9	/12/2	021)		
Scenario Road Name Road Segment	: Panama Ln						Name: N umber: 1		tic Gateway		
	PECIFIC IN	PUT DATA							L INPUTS	;	
Highway Data				5	Site Con	ditions		· ·			
Average Daily T	, ,	37,914 vehicle	s					utos:			
Peak Hour F		10.00%					icks (2 A	~ ~ ~			
	ur Volume:	3,791 vehicles			Hea	avy Truc	cks (3+ A	xles):	15		
	icle Speed:	50 mph		١	Vehicle N	lix					
Near/Far Lan	e Distance:	52 feet			Vehi	cleType	L	Day	Evening	Night	Daily
Site Data						1	Autos:	77.5%	6 12.9%	9.6%	91.81%
Barr	ier Heiaht:	0.0 feet			Me	edium Ti	ucks: 8	34.8%	6 4.9%	10.3%	2.52%
Barrier Type (0-Wa	II, 1-Berm):	0.0			H	leavy Ti	ucks: 8	36.5%	6 2.7%	10.8%	5.67%
Centerline Dist	to Barrier:	55.0 feet		,	Voise So	urco Fl	ovations	(in f	oof)		
Centerline Dist. to	Observer:	55.0 feet		Ľ.	10/30 00	Auto:					
Barrier Distance to	Observer:	0.0 feet			Modiur	n Truck	. 0.0				
Observer Height (A	bove Pad):	5.0 feet				y Truck			Grade Adju	ustment	0.0
Pad	d Elevation:	0.0 feet						-			
Road	d Elevation:	0.0 feet		L	ane Equ				feet)		
R	oad Grade:	0.0%				Auto					
	Left View:	-90.0 degree				n Truck					
	Right View:	90.0 degree	s		Heav	y Truck	s: 48.5	59			
FHWA Noise Model	Calculation	5									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresne	e/	Barrier Atte	n Ben	n Atten
Autos:	70.20	3.12		0.0		-1.20	-	4.67	0.0	00	0.000
Medium Trucks:	81.00	-12.49		0.09	9	-1.20	-	4.87	0.0	00	0.000
Heavy Trucks:	85.38	-8.97		0.09	9	-1.20	-	5.38	0.0	00	0.000
Unmitigated Noise											
	.eq Peak Hou			.eq Ev	/ening	Leq	Night		Ldn	CI	IEL
Autos:	72		70.3		68.5		62.5		71.1		71.
Medium Trucks:	67		55.9		59.5		58.0		66.4		66.7
Heavy Trucks:	75		73.9		64.8		66.1		74.4		74.6
Vehicle Noise:	77	.5	75.9		70.4		68.1		76.5		76.8
Centerline Distance	e to Noise Co	ontour (in feet)									
			∟	70 c		65	dBA		60 dBA	55	dBA
			_dn:		150		323		697		1,501
			IEL:		157		337		727		1.566

	FHWA-RD	0-77-108 HIGH	WAY NO	DISE P	REDIC	TION N	IODEL (S	9/12/20	021)		
Scenario. Road Name. Road Segment	Panama Ln						Name: I lumber: 1		ic Gateway		
	PECIFIC IN	PUT DATA							L INPUT	5	
Highway Data				Si	te Con	ditions	(Hard =	10, So	oft = 15)		
Average Daily T	raffic (Adt):	38,791 vehicle	s				,	Autos:	15		
Peak Hour P	ercentage:	10.00%			Mee	dium Tr	ucks (2 A	(xles)	15		
Peak Ho	ur Volume:	3,879 vehicles	5		Hei	avy Tru	cks (3+ A	(xles)	15		
Vehi	cle Speed:	50 mph		Ve	ehicle N	Nix					
Near/Far Lane	e Distance:	52 feet				cleType		Dav	Evening	Night	Daily
Site Data								77.5%	•	9.6%	
Barri	ier Heiaht:	0.0 feet			Me	edium T	rucks:	84.8%	4.9%	10.3%	2.46
Barrier Type (0-Wa		0.0			F	leavy T	rucks:	86.5%	2.7%	10.8%	5.54
Centerline Dist.	. ,	55.0 feet		N	nico So	urco E	levations	in fo	of)		
Centerline Dist. to	Observer:	55.0 feet		740	JISE 30	Auto		000	el)		
Barrier Distance to	Observer:	0.0 feet			Modiur	n Truck	0	297			
Observer Height (A	bove Pad):	5.0 feet				y Truck	•••	004	Grade Adj	ustment	· 0 0
Pad	Elevation:	0.0 feet									
Road	Elevation:	0.0 feet		La	ne Equ		t Distanc		feet)		
R	oad Grade:	0.0%				Auto					
	Left View:	-90.0 degree				n Truck					
1	Right View:	90.0 degree	:S		Heav	y Truck	s: 48.	559			
FHWA Noise Model	Calculation	s									
VehicleType	REMEL	Traffic Flow	Distar		Finite		Fresn	-	Barrier Atte		m Atten
Autos:	70.20	3.23		0.07		-1.20		-4.67	0.0		0.00
Medium Trucks:	81.00	-12.49		0.09		-1.20		-4.87	0.0		0.00
Heavy Trucks:	85.38	-8.97		0.09		-1.20		-5.38	0.0	00	0.00
Unmitigated Noise											
	eq Peak Hou			eq Eve		Leq	Night		Ldn		NEL
Autos:	72		70.4		68.6		62.6		71.2		71.
Medium Trucks:	67		65.9		59.5		58.0		66.4		66
Heavy Trucks:	75		73.9		64.8		66.1		74.4		74.
Vehicle Noise:	77	.5	75.9		70.5		68.1		76.6)	76
Centerline Distance	to Noise Co	ontour (in feet)				-		-			10.4
				70 dE		65	dBA	6	0 dBA	55	dBA
			Ldn: VEL:		151		325		700		1,508
		CI	VEL:		157		339		731		1,574

FF	IWA-RD-	77-108 HIGH	WAY NO	DISE PRED		IODEL (9)/12/20)21)		
Scenario: E Road Name: Pan Road Segment: e/o						t Name: N lumber: 1		c Gateway		
SITE SPECI	FIC INP	UT DATA				NOISE N	IODE	L INPUTS	3	
Highway Data				Site C	onditions	(Hard =	10, So	ft = 15)		
Average Daily Traffic	(Adt): 4	0,269 vehicle	s				Autos:	15		
Peak Hour Percer	ntage: 1	0.00%		1	Medium Tr	ucks (2 A	xles):	15		
Peak Hour Vo	lume: 4	,027 vehicles	3		Heavy Tru	cks (3+ A	xles):	15		
Vehicle S	peed:	50 mph		Vehic	o Mix					
Near/Far Lane Dist	ance:	52 feet			ehicleType		Dav	Evening	Night	Daily
Site Data							77.5%	12.9%	9.6%	
Barrier He	and the second sec	0.0 feet			Medium 1	rucks:	84.8%	4.9%	10.3%	2.52%
Barrier Type (0-Wall, 1-B	•	0.0			Heavy 7	rucks:	86.5%	2.7%	10.8%	5.67%
Centerline Dist. to B		55.0 feet								
Centerline Dist. to Obs		55.0 feet		Noise	Source E			et)		
Barrier Distance to Obs	erver:	0.0 feet			Auto		000			
Observer Height (Above	Pad):	5.0 feet			lium Truck		297 004	Grade Adj	unternant	
Pad Elev	ation:	0.0 feet		THE THE	avy Truck	S: 8.0	104	Grade Auj	usuneni	. 0.0
Road Elev	ation:	0.0 feet		Lane I	Equivalen	t Distanc	e (in f	eet)		
Road G	Frade:	0.0%			Auto	s: 48.7	724			
Left	View:	-90.0 degree	s	Med	lium Truck	s: 48.5	542			
Right	View:	90.0 degree	es.	He	avy Truck	s: 48.5	559			
FHWA Noise Model Calc	ulations									
VehicleType REN	IEL 1	Traffic Flow	Distar	ice Fin	ite Road	Fresn	el i	Barrier Atte	en Ber	m Atten
Autos:	70.20	3.38		0.07	-1.20		-4.67	0.0		0.000
Medium Trucks:	81.00	-12.23		0.09	-1.20		-4.87	0.0		0.000
Heavy Trucks:	85.38	-8.71		0.09	-1.20		-5.38	0.0	00	0.000
Unmitigated Noise Level	s (withou	ut Topo and	barrier a	ttenuation	ı)					
	eak Hour			eq Evening		Night		Ldn		VEL
Autos:	72.5		70.6	68		62.7		71.4		72.0
Medium Trucks:	67.7		66.2	59		58.2		66.7		66.9
Heavy Trucks:	75.6		74.1	65		66.3		74.7		74.8
Vehicle Noise:	77.7		76.2	70	.7	68.4		76.8		77.1
Centerline Distance to N	oise Con	tour (in feet)								
Centerline Distance to N	oise Con			70 dBA		dBA	6	0 dBA	55	dBA
Centerline Distance to N	oise Con		Ldn:	70 dBA 15	6	dBA 337 351	6	0 dBA 725 757	55	dBA 1,562 1.631

	FHWA-RD	-77-108 HIGH	WAY	NOISE F	PREDICT	TION M	IODEL (9/12/20	021)		
Scenario:	E+P					Project	Name:	Majest	ic Gateway	/	
Road Name:	Panama Ln.					Job N	umber:	13923			
Road Segment:	e/o Wible R	d.									
	ECIFIC IN	PUT DATA							L INPUT	s	
Highway Data				S	ite Cond	litions	(Hard =	10, Sc	oft = 15)		
Average Daily Tra	affic (Adt):	41,365 vehicle	es					Autos:	15		
Peak Hour Pe	rcentage:	10.00%			Med	lium Tri	ucks (2)	Axles):	15		
Peak Hou	r Volume:	4,137 vehicles	5		Hea	vy Tru	cks (3+)	Axles):	15		
Vehic	le Speed:	50 mph		V	ehicle M	iv					
Near/Far Lane	Distance:	52 feet		-		leType		Dav	Evening	Night	Daily
Site Data					vonie		Autos:	77.5%		9.6%	
	v Hoiaht	0.0 feet			Me	, dium Ti		84.8%		10.3%	
	er Height:	0.0 feet 0.0					rucks:	86.5%		10.8%	
Barrier Type (0-Wall, Centerline Dist.		0.0 55.0 feet								.0.070	0.02
Centerline Dist. to		55.0 feet		N	oise Sou	urce El	evation	s (in fe	eet)		
Barrier Distance to		0.0 feet				Auto	s: 0.	000			
Observer Height (Ab		5.0 feet			Medium	Truck	s: 2.	297			
	Elevation:	0.0 feet			Heavy	Truck	s: 8.	004	Grade Ad	iustment.	0.0
	Elevation:	0.0 feet		1	ane Equ	ivalont	Dietan	co (in i	foot)		
	ad Grade:	0.0%		-	ine Lqu	Auto		724	000		
	Left View:	-90.0 degree			Medium			542			
	ight View:	90.0 degree				Truck		559			
FHWA Noise Model C	Calculations	;									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite F	Road	Fresr	nel	Barrier Att	en Ber	m Atten
Autos:	70.20	3.51		0.07		-1.20		-4.67	0.0	000	0.00
Medium Trucks:	81.00	-12.23		0.09		-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	85.38	-8.71		0.09		-1.20		-5.38	0.0	000	0.00
Unmitigated Noise L			barri	er attenu	ation)						
	q Peak Hou			Leq Eve		Leq	Night		Ldn		VEL
Autos:	72.		70.7		68.9		62.9		71.5		72.
Medium Trucks:	67.		66.2		59.8		58.2		66.7		66
Heavy Trucks:	75.		74.1		65.1		66.3		74.1		74.
Vehicle Noise:	77.	8	76.2		70.8		68.4	4	76.8	3	77.
Centerline Distance t	to Noise Co	ntour (in feet,)							Т	
			L	70 di		65	dBA		60 dBA		dBA
			Ldn:		157		338		729		1,57
			NEL:		164		353		761		1.640

	FHWA-RD-	77-108 HIGH	WAY NC	SE PREDIO		ODEL (9/12/202	21)		
Scenario:	2024				Project	Name:	Majestic	Gateway		
Road Name:	Panama Ln.				Job N	umber:	13923			
Road Segment:	e/o Wible Rd									
	ECIFIC INP	UT DATA						INPUTS		
Highway Data				Site Cor	nditions	(Hard =	10, Sof	t = 15)		
Average Daily Tra	affic (Adt): 4	0,574 vehicle	s				Autos:	15		
Peak Hour Pe	ercentage: 1	0.00%		Me	edium Tru	ıcks (2 /	Axles):	15		
Peak Hou	r Volume: 4	057 vehicles	;	He	eavy Truc	:ks (3+)	Axles):	15		
Vehic	le Speed:	50 mph		Vehicle	Mix					
Near/Far Lane	Distance:	52 feet		Veh	nicleType		Dav I	Evenina	Niaht	Dailv
Site Data						utos:	77.5%	12.9%	9.6%	91.819
		0.0 feet		M	Iedium Tr		84.8%	4.9%	10.3%	2.52%
Barrier Type (0-Wall	er Height:	0.0 reet			Heavy Tr	ucks:	86.5%	2.7%	10.8%	5.67%
Centerline Dist.	· /	55.0 feet								
Centerline Dist. to		55.0 feet		Noise S	ource El			et)		
Barrier Distance to		0.0 feet			Autos	••••••	000			
Observer Height (Ab		5.0 feet			im Trucks	·· -·	297			
	Elevation:	0.0 feet		Hea	vy Trucks	s: 8.	004 0	Grade Adju	stment:	0.0
	Elevation:	0.0 feet		Lane Eo	uivalent	Distan	ce (in fe	et)		
Ro	ad Grade:	0.0%			Autos	s: 48.	724	1		
	Left View:	-90.0 degree	is.	Mediu	m Truck	: 48	542			
R	light View:	90.0 degree		Hea	vy Truck	s: 48.	559			
FHWA Noise Model (Calculations									
VehicleType	REMEL	Traffic Flow	Distan	ce Finite	Road	Fresr	nel B	arrier Atte	n Ben	m Atten
Autos:	70.20	3.42		0.07	-1.20		-4.67	0.00	00	0.00
Medium Trucks:	81.00	-12.20		0.09	-1.20		-4.87	0.00	00	0.00
Heavy Trucks:	85.38	-8.68		0.09	-1.20		-5.38	0.00	00	0.00
Unmitigated Noise L	evels (withou	ut Topo and I	barrier a	ttenuation)						
	eq Peak Hour	Leq Day		eq Evening		Night	-	dn	CI	VEL
Autos:	72.5		70.6	68.8		62.8	-	71.4		72.
Medium Trucks:	67.7		66.2	59.8		58.3		66.7		67.
Heavy Trucks:	75.6		74.2	65.1		66.4		74.7		74.
Vehicle Noise:	77.8	3	76.2	70.7	,	68.4	4	76.8		77.
Contarline Distance	to Noise Con	tour (in feet)		-						
Centenine Distance				70 /0 /		(D 4				
Centenine Distance			Ldn:	70 dBA 157		338 338		dBA 729	55	dBA 1.570

	FHWA-RD	-77-108 HIGH	VAY NO			DEL (9/12	/2021)		
Scenario: Road Name: Road Segment:	Panama Ln					ame: Maje nber: 1392	estic Gateway 23		
SITE SP	ECIFIC IN	PUT DATA					DEL INPUTS	;	-
Highway Data				Site Con	ditions (H	lard = 10,	Soft = 15)		
Average Daily Tr	affic (Adt):	41,670 vehicle	5			Auto	s: 15		
Peak Hour Pe	ercentage:	10.00%		Me	dium Truc	ks (2 Axle:	s): 15		
Peak Hou	r Volume:	4,167 vehicles		He	avy Truck	s (3+ Axle	s): 15		
Vehic	le Speed:	50 mph		Vehicle	Mix				
Near/Far Lane	Distance:	52 feet			icleType	Day	Evening	Night	Dailv
Site Data						tos: 77.5		9.6%	
Barrie	er Height:	0.0 feet		M	edium Tru	cks: 84.8	3% 4.9%	10.3%	2.45%
Barrier Type (0-Wall		0.0		1	Heavy Tru	cks: 86.5	5% 2.7%	10.8%	5.52%
Centerline Dist.	to Barrier:	55.0 feet		Noise So	ource Elev	ations (in	feet)		
Centerline Dist. to	Observer:	55.0 feet			Autos:	0.000			
Barrier Distance to	Observer:	0.0 feet		Mediu	m Trucks:	2.297			
Observer Height (Ab	ove Pad):	5.0 feet			vy Trucks:	8.004	Grade Adj	ustment:	0.0
	Elevation:	0.0 feet							
	Elevation:	0.0 feet		Lane Eq)istance (i	n feet)		
	ad Grade:	0.0%			Autos:	48.724			
	Left View:	-90.0 degree			m Trucks:	48.542			
R	light View:	90.0 degree	5	Heav	y Trucks:	48.559			
FHWA Noise Model	Calculations	;		1					
VehicleType	REMEL	Traffic Flow	Distant		Road	Fresnel	Barrier Atte		m Atten
Autos:	70.20	3.54		0.07	-1.20	-4.6			0.00
Medium Trucks:	81.00	-12.20		0.09	-1.20	-4.8			0.00
Heavy Trucks:	85.38	-8.68		0.09	-1.20	-5.3	8 0.0	00	0.00
Unmitigated Noise L									-
	eq Peak Hou			q Evening	Leq N	•	Ldn		VEL
Autos:	72.	-	0.7	68.9		62.9	71.5		72.
Medium Trucks:	67.		6.2	59.8		58.3	66.7		67.
Heavy Trucks:	75.	-	4.2	65.1		66.4	74.7		74.
Vehicle Noise:	77.	.8 7	6.2	70.8		68.4	76.9		77.
Centerline Distance	to Noise Co	ntour (in feet)							-
							60 dBA		dBA
				70 dBA	65 dE			22	
			.dn: EL:	70 dBA 158 165	65 di	340 355	733 765	55	1,579

Monday, November 8, 2021

FHWA-	RD-77-108 HI	GHWAY NC	ISE PRED		IODEL (9	9/12/20	21)		
Scenario: 2029 Road Name: Panama Road Segment: e/o Wible					Name: N lumber: 1		c Gateway		
SITE SPECIFIC	INPUT DAT	A		1	IOISE N	IODEI	. INPUTS	6	
Highway Data			Site Co	onditions	(Hard =	10, So	ft = 15)		
Average Daily Traffic (Adt):	40,521 veh	icles				Autos:	15		
Peak Hour Percentage:	10.00%		٨	Aedium Tr	ucks (2 A	xles):	15		
Peak Hour Volume:	4,052 vehic	cles	1	leavy Tru	cks (3+ A	xles):	15		
Vehicle Speed:	50 mph		Vehicl	Mix					
Near/Far Lane Distance:	52 feet			e hicleType		Dav	Evening	Night	Daily
Site Data						77.5%	12.9%	9.6%	91.81%
	0.0 feet		-	Medium T		84.8%	4.9%	10.3%	2.52%
Barrier Height: Barrier Type (0-Wall, 1-Berm):				Heavy T		86.5%	2.7%	10.8%	5.67%
Centerline Dist. to Barrier.									
Centerline Dist. to Observer.			Noise	Source E			et)		
Barrier Distance to Observer.				Auto		000			
Observer Height (Above Pad).				ium Truck		297			
Pad Elevation			He	avy Truck	s: 8.0	004	Grade Adj	ustment:	0.0
Road Elevation:			Lane E	quivalen	t Distanc	e (in f	eet)		
Road Grade:				Auto	s: 48.7	724	,		
Left View	-90.0 deg	rees	Med	ium Truck	s: 48.5	542			
Right View			He	avy Truck	s: 48.5	559			
FHWA Noise Model Calculation	ons								
VehicleType REMEL	Traffic Flow	v Distan		te Road	Fresn		Barrier Atte	en Berr	n Atten
Autos: 70.2			0.07	-1.20		-4.67	0.0		0.000
Medium Trucks: 81.0			0.09	-1.20		-4.87	0.0		0.000
Heavy Trucks: 85.3	-8.	68	0.09	-1.20		-5.38	0.0	00	0.000
Unmitigated Noise Levels (wi		nd barrier a	ttenuation)					
VehicleType Leq Peak H	our Leq D	Day Le	eq Evening	Leq	Night		Ldn	CN	IEL
			68	0	62.8		71.4		72.0
	72.5	70.6							
Medium Trucks:	67.7	66.2	59	.8	58.3		66.7		
Medium Trucks: Heavy Trucks:	67.7 75.6	66.2 74.2	59 65	.8 .1	66.4		74.7		74.9
Medium Trucks: Heavy Trucks:	67.7	66.2	59	.8 .1					74.9
Medium Trucks: Heavy Trucks:	67.7 75.6 77.8	66.2 74.2 76.2	59 65 70	.8 .1 .7	66.4 68.4		74.7		74.9 77.1
Medium Trucks: Heavy Trucks: Vehicle Noise:	67.7 75.6 77.8	66.2 74.2 76.2	59 65 70 70 dBA	.8 .1 .7 65	66.4 68.4 dBA		74.7 76.8 0 dBA		67.0 74.9 77.1 dBA
Medium Trucks: Heavy Trucks: Vehicle Noise:	67.7 75.6 77.8	66.2 74.2 76.2	59 65 70	.8 .1 .7 65 7	66.4 68.4		74.7		74.9 77.1

Fi	HWA-RD-7	7-108 HIGHW	ay no	ISE PREDIC		IODEL (9/12/20	021)		
Scenario: 202	29+P				Project	Name:	Majest	ic Gateway	,	
Road Name: Pa	nama Ln.				Job N	lumber:	13923			
Road Segment: e/o	Wible Rd.									
SITE SPEC	IFIC INPU	JT DATA						L INPUT	S	
Highway Data				Site Con	ditions	(Hard =	10, So	oft = 15)		
Average Daily Traffic	(Adt): 41	,617 vehicles					Autos:	15		
Peak Hour Perce	ntage: 10	.00%		Me	dium Tr	ucks (2)	Axles):	15		
Peak Hour Vo	olume: 4,	162 vehicles		He	avy Tru	cks (3+)	Axles):	15		
Vehicle S	Speed:	50 mph		Vehicle	Mix					
Near/Far Lane Dis	tance:	52 feet			icleType		Dav	Evening	Night	Daily
Site Data						Autos:	77.5%		9.6%	
Barrier H	laimht	0.0 feet		М	edium T	rucks:	84.8%	4.9%	10.3%	
Barrier Type (0-Wall, 1-		0.0 reet			Heavy T	rucks:	86.5%		10.8%	
Centerline Dist. to E	,	55.0 feet								
Centerline Dist. to Ob		55.0 feet		Noise Se				eet)		
Barrier Distance to Ob		0.0 feet			Auto		000			
Observer Height (Above		5.0 feet			m Truck		297			
Pad Ele	,	0.0 feet		Hear	/y Truck	s: 8.	004	Grade Adj	iustment.	0.0
Road Ele		0.0 feet		Lane Eq	uivalen	Distan	ce (in f	feet)		
		0.0 1001			Auto		724			
		90.0 degrees		Mediu	m Truck	s: 48	542			
		90.0 degrees		Hear	y Truck	s: 48.	559			
FHWA Noise Model Cal	culations									
			Distand		Road	Fresr		Barrier Atte		m Atten
Autos:	70.20	3.54		0.07	-1.20		-4.67		000	0.00
Medium Trucks:	81.00	-12.20		0.09	-1.20		-4.87		000	0.00
Heavy Trucks:	85.38	-8.68		0.09	-1.20		-5.38	0.0	000	0.00
Unmitigated Noise Leve			_	,			1			
	Peak Hour	Leq Day		q Evening		Night		Ldn		VEL
Autos:	72.6	70		68.9		62.9		71.5		72.
Medium Trucks:	67.7	66		59.8		58.3		66.7		67.
Heavy Trucks:	75.6	74		65.1		66.4		74.7		74.
Vehicle Noise:	77.8	76	.2	70.8		68.4	1	76.9	9	77.
Centerline Distance to N	loise Cont	our (in feet)			-	10.4				
				70 dBA	65	dBA		60 dBA		dBA
		Ld		158		340		732		1,57
		CNE	1.1	165		355		765		1.647

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FHWA-	RD-77-108 HIGH	WAY NO	ISE PREDI	CTION MO	ODEL (9/12/	/2021)		
Scenario: 2042 Road Name: Panama Road Segment: e/o Wible					Vame: Maje Imber: 1392	stic Gateway 3	r	
SITE SPECIFIC	INPUT DATA					EL INPUT	5	
Highway Data			Site Co	nditions (Hard = 10, 3	Soft = 15)		
Average Daily Traffic (Adt):	40,350 vehicle	es			Auto	s: 15		
Peak Hour Percentage:	10.00%		M	ledium Tru	cks (2 Axles	s): 15		
Peak Hour Volume:	4,035 vehicles	5	h	eavy Truc	ks (3+ Axles	s): 15		
Vehicle Speed:	50 mph		Vehicle	Mix				
Near/Far Lane Distance:	52 feet			hicleType	Dav	Evening	Night	Daily
Site Data				A	utos: 77.5	5% 12.9%	9.6%	91.81
Barrier Height:	0.0 feet		1	Aedium Tru	ucks: 84.8	3% 4.9%	10.3%	2.52
Barrier Type (0-Wall, 1-Berm).				Heavy Tru	ucks: 86.5	5% 2.7%	10.8%	5.67
Centerline Dist. to Barrier.	55.0 feet		Noise S	Source Fle	vations (in	feet)		
Centerline Dist. to Observer.	55.0 feet			Autos		1000		
Barrier Distance to Observer.	0.0 feet		Medi	um Trucks				
Observer Height (Above Pad)	5.0 feet			avy Trucks		Grade Ad	ustment:	0.0
Pad Elevation:	0.0 feet							
Road Elevation:	0.0 feet		Lane E		Distance (ii	n feet)		
Road Grade:	0.070			Autos				
Left View:	00.0 009.00	es		um Trucks				
Right View.	90.0 degree	es	Hea	avy Trucks	48.559			
FHWA Noise Model Calculatio	ns							
VehicleType REMEL	Traffic Flow	Distand	e Finit	e Road	Fresnel	Barrier Atte	en Berr	n Attei
Autos: 70.2	0 3.39		0.07	-1.20	-4.6	7 0.0	000	0.0
Medium Trucks: 81.0	0 -12.22		0.09	-1.20	-4.8	7 0.0	000	0.0
Heavy Trucks: 85.3	8 -8.70		0.09	-1.20	-5.3	8 0.0	000	0.0
Unmitigated Noise Levels (wi	hout Topo and	barrier at	tenuation)					
VehicleType Leq Peak H			q Evening	Leq N		Ldn		IEL
		70.6	68.		62.7	71.4		72
		66.2	59.	-	58.3	66.7		66
		74.1	65.		66.4	74.7		74
Vehicle Noise:	77.7	76.2	70.	7	68.4	76.8	3	77
Centerline Distance to Noise	Contour (in feet)	i i		T	1		T	
			70 dBA	65 d		60 dBA		dBA
		Ldn:	156	6	337	726		1,56
		VEL	163		352	758		1.63

	FHWA-RD	-77-108 HIGH	WAY NC	ISE PR	EDIC	TION M	ODEL (9	/12/2	021)		
Scenario. Road Name: Road Segment:	Panama Ln						Name: N umber: 1		ic Gateway		
	PECIFIC IN	PUT DATA							L INPUTS	;	
Highway Data				Site	Cond	ditions (Hard = 1	10, Sc	oft = 15)		
Average Daily Tr	affic (Adt):	41,446 vehicle	es				A	utos:	15		
Peak Hour P	ercentage:	10.00%			Med	dium Tru	icks (2 A	xles):	15		
Peak Ho	ur Volume:	4,145 vehicle	6		Hea	avy Truc	ks (3+ A	xles):	15		
	cle Speed:	50 mph		Veh	icle N	<i>lix</i>					
Near/Far Lane	Distance:	52 feet				cleType	Ľ	Day	Evening	Night	Daily
Site Data						A	utos: 7	77.5%	12.9%	9.6%	92.03
Barri	er Heiaht:	0.0 feet			Me	edium Tr	ucks: 8	34.8%	4.9%	10.3%	2.45
Barrier Type (0-Wal		0.0			H	leavy Tr	ucks: 8	36.5%	2.7%	10.8%	5.52
Centerline Dist.	to Barrier:	55.0 feet		Noi	sa Sa	urco El	evations	(in fe	oof)		
Centerline Dist. to	Observer:	55.0 feet		1401.	30 00	Autos					
Barrier Distance to	Observer:	0.0 feet			lediur	n Trucks	. 0.0				
Observer Height (A	bove Pad):	5.0 feet				y Trucks			Grade Adju	istment	0.0
Pad	Elevation:	0.0 feet						• •			
	Elevation:	0.0 feet		Lan	e Equ		Distance		feet)		
Ro	oad Grade:	0.0%				Autos					
	Left View:	-90.0 degree				n Trucks					
F	Right View:	90.0 degree	2S		Heav	y Trucks	48.5	59			
FHWA Noise Model	Calculations	5									
VehicleType	REMEL	Traffic Flow	Distan	ce A	inite i	Road	Fresne	e/	Barrier Atte	n Ber	m Atter
Autos:	70.20	3.52		0.07		-1.20	-	4.67	0.0	00	0.00
Medium Trucks:	81.00	-12.22		0.09		-1.20		4.87	0.0	00	0.0
Heavy Trucks:	85.38	-8.70		0.09		-1.20	-	5.38	0.0	00	0.0
Unmitigated Noise I	evels (with	out Topo and	barrier a	ttenuat	ion)						
VehicleType L	eq Peak Hou	r Leq Day	Le	q Even	ing	Leq I	Vight		Ldn	C	NEL
Autos:	72		70.7		68.9		62.9		71.5		72
Medium Trucks:	67		66.2		59.8		58.3		66.7		66
		6	74.1		65.1		66.4		74.7		74
Heavy Trucks:	75	.0									77
Heavy Trucks: Vehicle Noise:	75	-	76.2		70.8		68.4		76.8		
Vehicle Noise:	77	.8			70.8		68.4		76.8		
	77	.8		70 dBA		65 0		e	76.8 60 dBA		dBA
Vehicle Noise:	77	.8 ntour (in feet		70 dBA		65 0		6			

FHWA-I	RD-77-108 HIGH	IWAY NO	ISE PREDIC	CTION M	IODEL (9	/12/20	021)		
Scenario: E Road Name: Panama Road Segment: w/o Color					Name: N lumber: 1		c Gateway		
SITE SPECIFIC	INPUT DATA			N	IOISE N	IODE	L INPUTS	6	
Highway Data			Site Cor	ditions	(Hard =	10, So	ft = 15)		
Average Daily Traffic (Adt):	30,064 vehicl	es			A	Autos:	15		
Peak Hour Percentage:	10.00%		Me	dium Tri	ucks (2 A	xles):	15		
Peak Hour Volume:	3,006 vehicle	s	He	avy Tru	cks (3+ A	xles):	15		
Vehicle Speed:	50 mph		Vehicle	Mix					
Near/Far Lane Distance:	52 feet			icleType		Dav	Evening	Night	Daily
Site Data						77.5%	•	9.6%	
Barrier Height:	0.0 feet		м	Iedium Ti	rucks:	84.8%	4.9%	10.3%	2.52%
Barrier Type (0-Wall, 1-Berm):				Heavy Ti	rucks:	86.5%	2.7%	10.8%	5.67%
Centerline Dist. to Barrier:									
Centerline Dist. to Observer:			Noise Se		evations		et)		
Barrier Distance to Observer				Auto					
Observer Height (Above Pad):	5.0 feet			m Truck					
Pad Elevation:			Hea	vy Truck	s: 8.0	104	Grade Adj	ustment.	0.0
Road Elevation:	0.0 feet		Lane Eq	uivalent	t Distanc	e (in f	eet)		
Road Grade:	0.0%			Auto	s: 48.7	24			
Left View:	-90.0 degre	es	Mediu	m Truck	s: 48.5	642			
Right View:	90.0 degre	es	Hea	vy Truck	s: 48.5	59			
FHWA Noise Model Calculation	ns								
VehicleType REMEL	Traffic Flow	Distand	e Finite	Road	Fresne	e/	Barrier Atte	en Ber	m Atten
Autos: 70.2			0.07	-1.20		4.67	0.0		0.000
Medium Trucks: 81.0			0.09	-1.20		4.87	0.0		0.000
Heavy Trucks: 85.3	8 -9.98		0.09	-1.20		-5.38	0.0	00	0.000
Unmitigated Noise Levels (with	thout Topo and	barrier at	tenuation)						
VehicleType Leq Peak H			q Evening		Night		Ldn		VEL
	71.2	69.3	67.5		61.5		70.1		70.7
	66.4	64.9	58.5		57.0		65.4		65.7
	74.3	72.9	63.8		65.1		73.4		73.6
Vehicle Noise:	76.5	74.9	69.4		67.1		75.5		75.8
Centerline Distance to Noise	Contour (in feet								
			70 dBA	65	dBA	6	0 dBA	55	dBA
		Ldn:	129		277		597		1,286
	С	NEL:	134		289		623		1,342

	FHWA-RD	-77-108 HIGH	WAY	NOISE F	REDICTION	MODE	L (9/12/2	021)		
Scenario	p: E+P				Proj	ect Nam	e: Majes	tic Gateway	/	
Road Name	e: Panama Ln				Joi	b Numbe	r: 13923			
Road Segmen	t: w/o Colony	St.								
	SPECIFIC IN	PUT DATA						L INPUT	S	
Highway Data				Si	te Conditio	ns (Harc	l = 10, S	oft = 15)		
Average Daily	Traffic (Adt):	32,585 vehicle	s				Autos.	15		
Peak Hour	Percentage:	10.00%			Medium	Trucks (2 Axles).	15		
Peak He	our Volume:	3,259 vehicles	6		Heavy 1	Trucks (3	+ Axles).	15		
Vel	nicle Speed:	50 mph		V	ehicle Mix					
Near/Far Lar	ne Distance:	52 feet		-	VehicleT	/pe	Day	Evening	Night	Daily
Site Data						Autos.	77.5%	12.9%	9.6%	92.449
Bar	rier Height:	0.0 feet			Mediun	n Trucks.	84.8%	4.9%	10.3%	2.32%
Barrier Type (0-Wa		0.0			Heav	/ Trucks.	86.5%	5 2.7%	10.8%	5.23%
Centerline Dis	. ,	55.0 feet				Flourst		41		
Centerline Dist. t	o Observer:	55.0 feet		N	oise Source			eet)		
Barrier Distance t	o Observer:	0.0 feet				utos:	0.000			
Observer Height ()	Above Pad):	5.0 feet			Medium Tru		2.297	Crada Ad	iuotmont	
Pa	d Elevation:	0.0 feet			Heavy Tru	ICKS:	8.004	Grade Ad	usuneni	0.0
Roa	d Elevation:	0.0 feet		Lá	ne Equival	ent Dist	ance (in	feet)		
F	Road Grade:	0.0%			A	utos: 4	18.724			
	Left View:	-90.0 degree	es		Medium Tru	icks: 4	18.542			
	Right View:	90.0 degree	es		Heavy Tru	icks:	18.559			
FHWA Noise Mode	I Calculations									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite Road		esnel	Barrier Att		m Atten
Autos:	70.20	2.49		0.07	-1.3		-4.67		000	0.00
Medium Trucks:	81.00	-13.50		0.09	-1.3		-4.87		000	0.00
Heavy Trucks:	85.38	-9.98		0.09	-1.3	20	-5.38	0.0	000	0.00
Unmitigated Noise			- T						Т	
	Leq Peak Hou			Leq Eve		eq Night		Ldn		VEL
Autos:	71.	-	69.7		67.9		1.8	70.5	-	71.
Medium Trucks:	66.		64.9		58.5		7.0	65.4		65.
Heavy Trucks:	74.		72.9		63.8		5.1	73.4		73.
Vehicle Noise:	76.	.6	75.0		69.7	6	7.2	75.0	6	75.
Centerline Distanc	e to Noise Co	ntour (in feet,)						Т	
			L	70 dE		65 dBA		50 dBA		dBA
			Ldn:		131		82	607		1,308
			VEL		137		94	634		1.367

Monday, November 8, 2021

FHWA	RD-77-	108 HIGH	WAY	NOISE	E PREDIC	TION M	ODEL (S	9/12/2	021)		
Scenario: 2024 Road Name: Panama Road Segment: w/o Colo							Name: I umber: 1		ic Gateway	r	
SITE SPECIFIC	INPUT	DATA							L INPUT	5	
Highway Data					Site Con	ditions	(Hard =	10, S	oft = 15)		
Average Daily Traffic (Adt)	: 31,5	36 vehicle	s					Autos:	15		
Peak Hour Percentage	: 10.0	0%			Me	dium Tru	icks (2 A	Axles).	15		
Peak Hour Volume	: 3,15	4 vehicles			He	avy Truc	:ks (3+ A	(xles)	15		
Vehicle Speed	: 5	0 mph		-	Vehicle I	Aix					
Near/Far Lane Distance	: 5	2 feet		-		cleType		Day	Evening	Night	Daily
Site Data						4	utos:	77.5%	12.9%	9.6%	91.81%
Barrier Heigh		0.0 feet			Me	edium Tr	ucks:	84.8%	4.9%	10.3%	2.52%
Barrier Type (0-Wall, 1-Berm		0.0			F	leavy Tr	ucks:	86.5%	5 2.7%	10.8%	5.67%
Centerline Dist. to Barrie		5.0 feet		H	Noise So	uree El	ovetien	n /im f	a a fi		
Centerline Dist. to Observe	: 55	5.0 feet		-	Noise 30	Auto:		300	eel)		
Barrier Distance to Observe	: C).0 feet				n Truck:		JUU 297			
Observer Height (Above Pad	: 5	5.0 feet						297 204	Grade Ad	ustmont	
Pad Elevation	e o).0 feet			Heav	y Trucks	5. 8.0	JU4	Graue Auj	usunen.	0.0
Road Elevation	: C	0.0 feet			Lane Equ	iivalent	Distanc	e (in	feet)		
Road Grade	: 0.0	1%				Autos	s: 48.	724			
Left View	90).0 degree	s		Mediur	n Trucks	. 48.	542			
Right View	: 90).0 degree	s		Heav	y Trucks	s: 48.	559			
FHWA Noise Model Calculati	ons										
VehicleType REMEL	Trat	fic Flow	Dis	tance	Finite	Road	Fresn	el	Barrier Atte	en Ber	m Atten
Autos: 70.	20	2.32		0.0)7	-1.20		-4.67	0.0	000	0.00
Medium Trucks: 81.	00	-13.29		0.0	9	-1.20		-4.87	0.0	000	0.00
Heavy Trucks: 85.	38	-9.77		0.0	09	-1.20		-5.38	0.0	000	0.00
Unmitigated Noise Levels (w	ithout T	opo and l	barrie	er atter	nuation)						
VehicleType Leq Peak I		Leq Day		Leq E	vening	Leq	Night		Ldn		VEL
Autos:	71.4		59.5		67.7		61.7		70.3		70.
Medium Trucks:	66.6		65.1		58.7		57.2		65.6		65.
Heavy Trucks:	74.5		73.1		64.0		65.3		73.6		73.
Vehicle Noise:	76.7	1	75.1		69.6		67.3	3	75.7	7	76.
Centerline Distance to Noise	Contou	ır (in feet)						1		1	
				70	dBA	65 /	1BA	1 1	50 dBA	55	dBA
				70		001					
			Ldn:	70	133	001	286		616		1,327

	FHWA-RD	0-77-108 HIGH	WAY NO	DISE P	PREDIC	TION M	ODEL (9	/12/20	021)		
	o: 2024+P e: Panama Ln t: w/o Colony						Name: N umber: 1		ic Gateway		
	PECIFIC IN	IPUT DATA							L INPUTS	5	
Highway Data				Si	te Con	ditions	(Hard = 1	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	34,057 vehicle	es				A	utos:	15		
Peak Hour	Percentage:	10.00%			Me	dium Tri	ucks (2 A	xles):	15		
Peak He	our Volume:	3,406 vehicle	5		Hei	avy Tru	cks (3+ A	xles):	15		
Vel	icle Speed:	50 mph		Ve	ehicle N	Nix					
Near/Far Lar	e Distance:	52 feet		-		cleType	1	Dav	Evening	Night	Dailv
Site Data								77.5%		9.6%	
Bar	rier Height:	0.0 feet			Me	dium T	ucks: 8	34.8%	4.9%	10.3%	2.339
Barrier Type (0-Wa		0.0			F	leavy Ti	ucks: 8	36.5%	2.7%	10.8%	5.25%
Centerline Dis	. ,	55.0 feet		AL.		uree El	evations	lin &	at l		
Centerline Dist. t	o Observer:	55.0 feet		///	oise so	Auto			el)		
Barrier Distance t	o Observer:	0.0 feet			Madis	Auto n Truck	0.0				
Observer Height ()	Above Pad):	5.0 feet							Grade Adj	ustmont	. 0.0
Pa	d Elevation:	0.0 feet			Heav	y Truck	5. 8.0	04	Graue Auj	usument	. 0.0
Roa	d Elevation:	0.0 feet		La	ane Equ	iivalent	Distanc	e (in i	feet)		
F	oad Grade:	0.0%				Auto	s: 48.7	24			
	Left View:	-90.0 degree	es		Mediur	n Truck	s: 48.5	42			
	Right View:	90.0 degree	es		Heav	y Truck	s: 48.5	59			
FHWA Noise Mode	I Calculation:	s									
VehicleType	REMEL	Traffic Flow	Distar	ice	Finite	Road	Fresne	e/	Barrier Atte	en Ber	m Atten
Autos:	70.20	2.68		0.07		-1.20	-	4.67	0.0	00	0.00
Medium Trucks:	81.00	-13.29		0.09		-1.20	-	4.87	0.0	00	0.00
Heavy Trucks:	85.38	-9.77		0.09		-1.20	-	5.38	0.0	00	0.00
Unmitigated Noise	Levels (with	out Topo and	barrier a	ttenu	ation)						
	Leq Peak Hou			eq Eve		Leq	Night		Ldn		NEL
Autos:	71		69.9		68.1		62.0		70.7		71.
Medium Trucks:	66		65.1		58.7		57.2		65.6		65.
Heavy Trucks:	74	-	73.1		64.0		65.3		73.6		73.
Vehicle Noise:	76	.8	75.2		69.9		67.4		75.8	3	76.
Centerline Distanc	e to Noise Co	ontour (in feet)							1	
				70 dE		65	dBA	6	60 dBA	55	dBA
			Ldn:		135		291		626		1,349
		-	VEL:		141		304		654		1.410

FHWA	RD-77-108 HIG	HWAY N	OISE F	PREDIC	TION MO	ODEL (S	0/12/20	21)		
Scenario: 2029 Road Name: Panama Road Segment: w/o Colo						Name: N Imber: 1		c Gateway	r	
SITE SPECIFIC	INPUT DATA	1			N	OISE N	IODE	L INPUT	5	
Highway Data			S	ite Con	ditions (Hard =	10, So	ft = 15)		
Average Daily Traffic (Adt)	: 31,952 vehi	cles					Autos:	15		
Peak Hour Percentage	: 10.00%			Mee	dium Tru	cks (2 A	xles):	15		
Peak Hour Volume	: 3,195 vehic	es		Hea	avy Truci	ks (3+ A	xles):	15		
Vehicle Speed	: 50 mph		V	ehicle N	Aiv					
Near/Far Lane Distance	: 52 feet				cleType		Day	Evening	Night	Daily
Site Data				10/11			77.5%	12.9%	9.6%	
Barrier Height	: 0.0 feet			Me	dium Tru	ucks:	84.8%	4.9%	10.3%	2.52%
Barrier Type (0-Wall, 1-Berm)				F	leavy Tru	ucks:	86.5%	2.7%	10.8%	5.67%
Centerline Dist. to Barrier										
Centerline Dist. to Observer			N	oise So	urce Ele			et)		
Barrier Distance to Observer					Autos					
Observer Height (Above Pad)					n Trucks					
Pad Elevation				Heav	y Trucks	: 8.0	004	Grade Adj	ustment	0.0
Road Elevation	: 0.0 feet		Li	ane Equ	ivalent	Distanc	e (in f	eet)		
Road Grade	: 0.0%				Autos	: 48.7	724			
Left View	: -90.0 degr	ees		Mediur	n Trucks	: 48.5	542			
Right View	90.0 degr	ees		Heav	y Trucks	: 48.5	559			
FHWA Noise Model Calculati	ons									
VehicleType REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresn	el I	Barrier Atte	en Ber	m Atten
Autos: 70.		-	0.07		-1.20		-4.67	0.0		0.000
Medium Trucks: 81.			0.09		-1.20		-4.87	0.0		0.000
Heavy Trucks: 85.	38 -9.7	1	0.09		-1.20		-5.38	0.0	000	0.000
Unmitigated Noise Levels (w									1	
VehicleType Leq Peak H			Leq Eve		Leq N	•		Ldn		VEL
Autos:	71.4	69.5		67.8		61.7		70.4		71.0
Medium Trucks:	66.7	65.1		58.8		57.2		65.7		65.9
Heavy Trucks:	74.6	73.1		64.1		65.3		73.7		73.8
Vehicle Noise:	76.7	75.2		69.7		67.4		75.8	5	76.1
Centerline Distance to Noise	Contour (in fe	et)					_			
			70 dE		65 d		6	0 dBA	55	dBA
		Ldn:		134		288		621		1,339
		CNEL:		140		301		649		1,398

	FHWA-RD	-77-108 HIGH	WAY	NOISE P	REDIC	TION M	IODEL (9/12/2	021)		
Scenari	o: 2029+P					Project	Name:	Majest	tic Gateway	,	
Road Nam	e: Panama Ln					Job N	lumber:	13923			
Road Segmer	nt: w/o Colony	St.									
	SPECIFIC IN	PUT DATA							L INPUT	5	
Highway Data				Si	te Con	ditions	(Hard =	10, So	oft = 15)		
Average Daily	Traffic (Adt):	34,473 vehicle	s					Autos:	15		
Peak Hour	Percentage:	10.00%			Me	dium Tri	ucks (2 /	Axles):	15		
Peak H	our Volume:	3,447 vehicles	6		He	avy Tru	cks (3+)	Axles):	15		
Ve	hicle Speed:	50 mph		Ve	hicle I	Nix					
Near/Far La	ne Distance:	52 feet				cleTvpe		Dav	Evening	Night	Daily
Site Data						1	Autos:	77.5%	•	9.6%	
Bai	rier Height:	0.0 feet			Me	edium T	rucks:	84.8%	4.9%	10.3%	2.349
Barrier Type (0-W		0.0			ŀ	leavy T	rucks:	86.5%	2.7%	10.8%	5.259
Centerline Dis	. ,	55.0 feet				_					
Centerline Dist.		55.0 feet		NC	oise So		evation		eet)		
Barrier Distance		0.0 feet				Auto		000			
Observer Height (5.0 feet				n Truck		297			
÷ (d Elevation:	0.0 feet			Heav	y Truck	s: 8.	004	Grade Adj	ustment:	0.0
	d Elevation:	0.0 feet		La	ne Equ	uivalent	t Distan	ce (in	feet)		
F	Road Grade:	0.0%				Auto	s: 48.	724			
	Left View:	-90.0 degree	s		Mediur	n Truck	s: 48.	542			
	Right View:	90.0 degree	es		Heav	y Truck	s: 48.	559			
FHWA Noise Mode	al Calculations	;									
VehicleType	REMEL	Traffic Flow	Di	stance	Finite	Road	Fresr	el	Barrier Atte	en Ber	m Atten
Autos:	70.20	2.74		0.07		-1.20		-4.67	0.0	000	0.00
Medium Trucks:	81.00	-13.24		0.09		-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	85.38	-9.71		0.09		-1.20		-5.38	0.0	000	0.00
Unmitigated Noise	Levels (with	out Topo and	barri	er attenua	ation)						
	Leq Peak Hou			Leq Eve		Leq	Night		Ldn		VEL
Autos:	71.		69.9		68.1		62.1		70.7		71.
Medium Trucks:	66.		65.1		58.8		57.2	-	65.7		65.
Heavy Trucks:	74.		73.1		64.1		65.3	-	73.7		73.
Vehicle Noise:	76.	-	75.3		69.9		67.5	5	75.9)	76
Centerline Distanc	e to Noise Co	ntour (in feet,)								
			L	70 dB		65	dBA		60 dBA		dBA
			Ldn: VEL:		136 142		293 306		632		1,36
									660		1,422

Monday, November 8, 2021

	FHWA-RD	0-77-108 HIGH	WAY N	DISE	PREDIC		ODEL (9	/12/2	021)	_	
Scenario: Road Name: Road Segment:	Panama Ln						Name: N umber: 1		ic Gateway		
	ECIFIC IN	PUT DATA							L INPUTS		
Highway Data				S	Site Con	ditions	(Hard =	10, So	oft = 15)		
Average Daily Tra	affic (Adt):	33,344 vehicle	s				A	Autos:	15		
Peak Hour Pe	rcentage:	10.00%			Me	dium Tri	ucks (2 A	xles):	15		
Peak Hou	r Volume:	3,334 vehicles			He	avy Truc	cks (3+ A	xles):	15		
Vehic	le Speed:	50 mph		v	/ehicle I	<i>lix</i>					
Near/Far Lane	Distance:	52 feet		F		cleTvpe		Day	Evening	Night	Daily
Site Data							Autos:	, 77.5%	12.9%	9.6%	91.819
Barrie	er Height:	0.0 feet			Me	edium Ti	rucks:	84.8%	4.9%	10.3%	2.529
Barrier Type (0-Wall		0.0			F	leavy Ti	rucks:	86.5%	2.7%	10.8%	5.67%
Centerline Dist.	· · ·	55.0 feet			1-1 0-			6 m #	41		
Centerline Dist. to	Observer:	55.0 feet		^	ioise so		evations		eet)		
Barrier Distance to	Observer:	0.0 feet				Auto					
Observer Height (Ab	ove Pad):	5.0 feet				n Truck			Grade Adju	etmont.	0.0
Pad	Elevation:	0.0 feet			Heav	y Truck	s: 8.0	104	Graue Auju	sunen.	0.0
Road	Elevation:	0.0 feet		L	ane Equ	ıivalent	Distanc	e (in	feet)		
Ro	ad Grade:	0.0%				Auto	s: 48.7	24			
	Left View:	-90.0 degree	s		Mediur	n Truck	s: 48.5	642			
R	ight View:	90.0 degree	s		Heav	y Truck	s: 48.5	59			
FHWA Noise Model (Calculation	5									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresne	e/	Barrier Atter	n Berr	n Atten
Autos:	70.20	2.56		0.07	7	-1.20		4.67	0.00	00	0.00
Medium Trucks:	81.00	-13.05		0.09	9	-1.20		4.87	0.00	00	0.00
Heavy Trucks:	85.38	-9.53		0.09	9	-1.20		-5.38	0.00	00	0.00
Unmitigated Noise L								_			
	eq Peak Hou			eq Ev	ening	Leq	Night		Ldn	CN	IEL
Autos:	71		59.7		68.0		61.9		70.5		71.
Medium Trucks:	66		35.3		59.0		57.4		65.9		66.
Heavy Trucks:	74		73.3		64.3		65.5		73.9		74.
Vehicle Noise:	76		75.3		69.9		67.5		76.0		76.
Centerline Distance	to Noise Co	ontour (in feet)									
				70 d		65	dBA	(60 dBA	55	dBA
			Ldn: IEL:		138 144		297 310		639 667		1,378

FHWA-RD-77-1	08 HIGHWAY N	IOISE PE	REDICTION	MODEL (9/	12/2021)		
Scenario: 2042+P			Projec	t Name: M	ajestic Gatewa	ау	
Road Name: Panama Ln.			Job I	Number: 13	3923		
Road Segment: w/o Colony St.							
SITE SPECIFIC INPUT	DATA				ODEL INPUT	rs	
Highway Data		Site	e Conditions		. ,		
	5 vehicles				utos: 15		
Peak Hour Percentage: 10.00				rucks (2 Ax	,		
	vehicles		Heavy Tru	ucks (3+ Ax	(les): 15		
	mph	Ve	hicle Mix				-
Near/Far Lane Distance: 52	feet		VehicleTyp	e D	ay Evening	Night	Daily
Site Data				Autos: 7	7.5% 12.9%	9.6%	92.39
Barrier Height: 0.	0 feet		Medium	Trucks: 8	4.8% 4.9%	10.3%	2.349
Barrier Type (0-Wall, 1-Berm): 0.	0		Heavy	Trucks: 8	6.5% 2.7%	10.8%	5.279
Centerline Dist. to Barrier: 55.	0 feet	No	ise Source E	levations	(in feet)		
Centerline Dist. to Observer: 55.	0 feet		Auto		. ,		-
Barrier Distance to Observer: 0.	0 feet		Medium Truc	0.00			
Observer Height (Above Pad): 5.	0 feet		Heavy Truc			djustmen	t: 0.0
Pad Elevation: 0.	0 feet						
	0 feet	Lai	ne Equivaler		. ,		
Road Grade: 0.09	-		Auto				
	0 degrees	1	Medium Truc	10.0			
Right View: 90.	0 degrees		Heavy Truc	ks: 48.55	59		
FHWA Noise Model Calculations							
			Finite Road	Fresne			rm Atten
Autos: 70.20	2.91	0.07	-1.20			.000	0.00
Medium Trucks: 81.00	-13.05	0.09	-1.20			.000	0.00
Heavy Trucks: 85.38	-9.53	0.09	-1.20	-:	5.38 0	.000	0.00
Unmitigated Noise Levels (without To						-	
		Leq Ever	•	Night	Ldn		NEL
Autos: 72.0 Medium Trucks: 66.8	70.1 65.3		68.3 59.0	62.3 57.4	70 65		71
							66
Heavy Trucks: 74.7	73.3		64.3	65.5	73		74.
Vehicle Noise: 77.0	75.4		70.1	67.6	76	.1	76
Centerline Distance to Noise Contour	(in feet)						
		70 dB/	9 65	i dBA	60 dBA	55	5 dBA
	–		110				
	Ldn: CNEL:		140 146	301 315	64 67	-	1,399 1,462

FHWA-RD-77	-108 HIGHWAY	NOISE	E PREDIC	TION M	ODEL (S	9/12/20)21)		
Scenario: E Road Name: Panama Ln. Road Segment: w/o S. H St.					Name: N umber: 1		c Gateway		
SITE SPECIFIC INPU	T DATA			N	IOISE N	IODE	L INPUTS	3	
Highway Data			Site Con	ditions	(Hard =	10, So	ft = 15)		
Average Daily Traffic (Adt): 29,9	62 vehicles					Autos:	15		
Peak Hour Percentage: 10.0	00%		Me	dium Tri	ucks (2 A	xles):	15		
Peak Hour Volume: 2,9	96 vehicles		He	avy Truc	cks (3+ A	xles):	15		
Vehicle Speed:	50 mph		Vehicle I	liv					
Near/Far Lane Distance:	52 feet			icleType		Dav	Evening	Night	Daily
Site Data			VCIII			77.5%	•	9.6%	
	0.0 feet		Me	edium Ti		84.8%		10.3%	2.52%
	0.0 reet		ŀ	leavy Ti		86.5%		10.8%	5.67%
	0.0 5.0 feet								
	5.0 feet		Noise So				et)		
	0.0 feet			Auto		000			
	5.0 feet			n Truck					
• ()	0.0 feet		Heav	y Truck	s: 8.0	004	Grade Adj	ustment	0.0
	0.0 feet		Lane Eq	uivalent	Distanc	e (in f	eet)		
	0%			Auto			,		
	0.0 degrees		Mediur	n Truck	s: 48.5	542			
	0.0 degrees		Heav	y Truck	s: 48.8	559			
FHWA Noise Model Calculations									
VehicleType REMEL Tra	ffic Flow Di	istance	Finite	Road	Fresn	el i	Barrier Atte	en Ber	m Atten
Autos: 70.20	2.10	0.0		-1.20		-4.67	0.0		0.000
Medium Trucks: 81.00	-13.52	0.0		-1.20		-4.87	0.0		0.000
Heavy Trucks: 85.38	-9.99	0.0	09	-1.20		-5.38	0.0	00	0.000
Unmitigated Noise Levels (without	Topo and barri	ier atte	nuation)						
VehicleType Leq Peak Hour	Leq Day	Leq E	Evening	Leq	Night		Ldn	CI	VEL
Autos: 71.2	69.3		67.5		61.4		70.1		70.7
Medium Trucks: 66.4	64.9		58.5		57.0		65.4		65.7
Heavy Trucks: 74.3	72.8		63.8		65.1		73.4		73.5
Vehicle Noise: 76.5	74.9		69.4		67.1		75.5		75.8
Centerline Distance to Noise Conto	ur (in feet)								
		70	dBA	65	dBA	6	0 dBA	55	dBA
	Ldn:		128		276		595		1,283
	CNEL:		134		288		621		1,339

	FHWA-RD	-77-108 HIGH	WAY N	OISE P	REDICTION	MODEL	(9/12/2	021)		
	o: E+P e: Panama Ln nt: w/o S. H St.					t Name. Number.		ic Gatewa	Ý	
SITE	SPECIFIC IN	PUT DATA				NOISE	MODE	L INPUT	s	
Highway Data				Si	te Conditions	(Hard	= 10, So	oft = 15)		
Average Daily	Traffic (Adt):	32,045 vehicle	s				Autos:	15		
Peak Hour	Percentage:	10.00%			Medium T	rucks (2	Axles):	15		
Peak H	our Volume:	3,204 vehicles			Heavy Tri	icks (3+	Axles):	15		
Ve	hicle Speed:	50 mph		14	hicle Mix					
Near/Far La	ne Distance:	52 feet		ve	VehicleTyp	<u>م</u>	Dav	Evening	Night	Daily
Site Data					vennene ryp	Autos:	77.5%	•	9.6%	
		0.0.6		_	Medium		84.8%		10.3%	2.36
	rier Height:	0.0 feet 0.0				Trucks:			10.8%	5.30
Barrier Type (0-W Centerline Dis		0.0 55.0 feet							10.070	0.00
Centerline Dis		55.0 feet		No	oise Source E	levatio	ns (in fe	eet)		
Barrier Distance		0.0 feet			Aut	os: 0	.000			
Observer Height (5.0 feet			Medium Truc	ks: 2	.297			
÷ (ad Elevation:	0.0 feet			Heavy Truc	ks: E	.004	Grade Ad	justment.	0.0
	d Elevation:	0.0 feet		La	ne Equivaler	nt Distar	nce (in	feet)		
	Road Grade:	0.0%			Aut		3.724			
	Left View:	-90.0 degree	9		Medium Truc		3.542			
	Right View:	90.0 degree			Heavy Truc	ks: 48	8.559			
FHWA Noise Mode										
VehicleType	REMEL	Traffic Flow	Dista		Finite Road	Fres		Barrier Att		m Atten
Autos:	70.20	2.42		0.07	-1.20		-4.67		000	0.00
Medium Trucks:	81.00	-13.52		0.09	-1.20		-4.87		000	0.00
Heavy Trucks:	85.38	-9.99		0.09	-1.20		-5.38	0.0	000	0.00
Unmitigated Noise					,				1	
	Leq Peak Hou			eq Eve		Night		Ldn		VEL
Autos:	71		69.6		67.8	61		70.4		71
Medium Trucks:	66		64.9		58.5	57		65.4		65
Heavy Trucks:	74		72.8		63.8	65		73.4		73
Vehicle Noise:	76	.5	75.0		69.6	67	.2	75.	ö	75
Centerline Distanc	e to Noise Co	ntour (in feet)		70 -15		104		0 -0 4		10.4
				70 dE		i dBA		60 dBA		dBA
			ldn: IEL:		130	28	-	604		1,30
		Ch	IEL:		136	29	3	631		1,36

Monday, November 8, 2021

Site Data Autos: 77.5% 12.9% 9.6% 91.61 Barrier Height: 0.0 feet Medium Trucks: 84.8% 4.9% 10.3% 2.52 Barrier Height: 0.0 Centerine Dist. to Barrier: 55.0 feet Heavy Trucks: 86.5% 2.7% 10.3% 2.52 Barrier Dist. to Diserver: 55.0 feet Noise Source Elevations (in feet) Autos: 0.000 Observer Height (Above Pad): 5.0 feet Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0 Road Elevation: 0.0 feet Autos: 4.052 4.000 Medium Trucks: 2.297 Road Grade: 0.00 Heavy Trucks: 48.04 Grade Adjustment: 0.0 Reight View: -90.0 degrees Heavy Trucks: 48.559 Heavy Trucks: 48.559 FHWA Noise Model Calculations Vehicle Type Traffic Flow Distance Finite Road Fresnel Barrier Atten Berrier Atten Autos: 70.20 2.26 0.07 -1.20 <		FHWA-RD	0-77-108 HIGHW	AY NOIS	E PREDIC		ODEL (9	/12/20)21)		
Highway Data Site Conditions (Hard = 10, Soft = 15) Average Daily Traffic (Adt): 31,071 vehicles Autos: 15 Peak Hour Percentage: 10,00% Medium Trucks (24,4kes): 15 Peak Hour Volume: 3,107 vehicles Medium Trucks (24,4kes): 15 Vehicle Speed: 50 mph Medium Trucks (24,4kes): 15 Site Data Vehicle Type Day Evening Night Daily Site Data 0.0 feet Heavy Trucks: 84.8% 4.9% 10.3% 2.52 Barrier Height: 0.0 feet Heavy Trucks: 86.5% 2.7% 10.8% 5.67 Centerline Dist. to Barrier: 5.0 feet Autos: 0.000 Medium Trucks: 2.297 Observer Height View: 90.0 degrees Right View: 90.0 degrees Autos: 7.4 Road Grade: 0.0% Late Equivalent Distance (in feet) Autos: 7.4 Autos: 70.20 2.26 0.07 -1.20 -4.67 0.000 0.0 Heavy Trucks: 85.3	Road Nam	e: Panama Ln							c Gateway	·	
Average Daily Traffic (Adt): 31,071 vehicles Autos: 15 Peak Hour Percentage: 10,00% Medium Trucks (2 Axles): 15 Peak Hour Volume: 31,071 vehicles Medium Trucks (2 Axles): 15 Vehicle Speed: 50 mph Heavy Trucks (3 + Axles): 15 Site Data Autos: 77.5% 12.9% 9.6% 91.81 Barrier Height: 0.0 feet Medium Trucks: 84.8% 4.9% 10.3% 5.57 Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 55.0 feet Medium Trucks: 84.8% 4.9% 10.3% 5.67 Barrier Distance to Observer: 0.0 feet Molitour Trucks: 8.004 Grade Adjustment: 0.0 Road Elevation: 0.0 feet Autos: 0.00 Medium Trucks: 48.542 Heavy Trucks: 8.00 degrees Autos: 7.00 2.26 0.07 -1.20 -4.67 0.000 0.0 Medium Trucks: 8.538 -9.84 0.09 -1.20 -5.38 0.00		SPECIFIC IN	IPUT DATA							5	
Noise Medium Trucks (2 Axles): 15 Peak Hour Volume: 3,107 vehicles Medium Trucks (3 + Axles): 15 Vehicle Speed: 50 mph Vehicle Mix Vehicle Mix Vehicle Mix Site Data Autos: 77.5% 12.9% 9.6% 91.81 Barrier Height: 0.0 feet Autos: 77.5% 12.9% 9.6% 91.81 Barrier Type (0-Wall, 1-Berrn): 0.0 Centerline Dist. to Barrier: 55.0 feet Medium Trucks: 84.8% 4.9% 10.3% 2.52 Barrier Distance to Observer: 55.0 feet Medium Trucks: 8.04 Grade Adjustment: 0.0 Observer Height (Abov Pad): 5.0 feet Medium Trucks: 48.559 10 15 10 10 10 10 10 10 10 10 10 10 10 10 10 12 10 00 10 10 10 10 10 10 10 10 10 10 10 10 10 10 <td< th=""><th>Highway Data</th><th></th><th></th><th></th><th>Site Con</th><th>ditions (</th><th>Hard =</th><th>10, So</th><th>ft = 15)</th><th></th><th></th></td<>	Highway Data				Site Con	ditions (Hard =	10, So	ft = 15)		
Peak Hour Volume: 3,107 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet Vehicle Type Day Evening Night Daily Site Data Parifer Height: 0.0 feet Parifer Type Day Evening Night Daily Barrier Height: 0.0 feet Parifer Type Day Evening Night Daily Barrier Type (0-Wall, 1-Berrn): 0.0 Centerline Dist. to Barrier: 55.0 feet Medium Trucks: 86.5% 2.7% 10.8% 5.67 Centerline Dist. to Observer: 0.0 feet Mutos: Onoo Medium Trucks: 8.004 Grade Adjustment: 0.0 Barrier Distance to Observer: 0.0 feet Medium Trucks: 8.004 Grade Adjustment: 0.0 Road Grade: 0.0% Autos: 7.000 0.0 Road Grade: 0.0% Autos: 8.004 Grade Adjustment: 0.0 Road Grade: 0.0% Autos: 8.004 Grade Adjustment: 0.0 Road Gra	• •	, ,	- ,-								
Vehicle Speed: 50 mph Site Data Vehicle Mix Site Data Autos: 77.5% 12.9% 9.6% 91.81 Barrier Height: 0.0 feet Medium Trucks: 84.8% 4.9% 10.3% 5.57 Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 55.0 feet Medium Trucks: 84.8% 4.9% 10.3% 5.67 Centerline Dist. to Desrever: 50 feet Motise Source Elevations (in feet) Medium Trucks: 84.8% 4.9% 10.3% 5.67 Pad Elevation: 0.0 feet Medium Trucks: 84.542 Heavy Trucks: 8.004 Grade Adjustment: 0.0 Road Grade: 0.0% Left View: 90.0 degrees Heavy Trucks: 48.524 Heavy Trucks: 81.00 -13.36 0.09 -1.20 -4.67 0.000 0.0 Medium Trucks: 85.38 -9.84 0.09 -1.20 -5.38 0.00 0.0 Medium Trucks: 85.38 -9.84 0.09 -1.20 -5.38 0.00		•									
Near/Far Lane Distance: 52 feet Vehicle Wix Day Evening Night Daily Site Data Autos: 77.5% 12.9% 9.6% 91.81 Barrier Height:: 0.0 feet Medium Trucks: 84.8% 4.9% 10.3% 2.52 Barrier Height:: 0.0 Centerine Dist. to Barrier: 55.0 feet Medium Trucks: 86.5% 2.7% 10.3% 5.67 Centerine Dist. to Diserver: 55.0 feet Noise Source Elevations (in feet) Autos: 0.00 10.8% 5.67 Observer Height (Above Pad): 5.0 feet Medium Trucks: 8.004 Grade Adjustment: 0.0 Road Elevation: 0.0 feet Lane Equivalent Distance (in feet) Autos: 48.559 FHWA Noise Model Calculations Vehicle Type REMEL Traffic Flow Distance Finite Road Fresnet Barrier Atten Berrier Atten Medium Trucks: 48.559 FHWA Noise Model Calculations Vehicle Type REMEL Traffic Flow Distance Finite Road Fresnet Barrier Atten <td></td> <td></td> <td></td> <td></td> <td>He</td> <td>avy Truc</td> <td>ks (3+ A</td> <td>xles):</td> <td>15</td> <td></td> <td></td>					He	avy Truc	ks (3+ A	xles):	15		
Venicle i ype Day					Vehicle	Mix					
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Diserver: 55.0 feet Barrier Distance to Observer: 55.0 feet Barrier Distance to Observer: 0.0 feet Barrier Distance to Observer: 0.0 feet Barrier Distance to Observer: 0.0 feet Road Grade: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees Right View: 90.0 degrees FHWA Noise Model Calculations VehicleType VehicleType REMEL Traffic Flow Distated Noise Levels (without Topo and barrier attenuation) VehicleType VehicleType Leq Deak Hour Leq Day Leq Day Leq Evening Leq Night Autos: 71.3 69.4 Autos: 71.3 69.4 Autos: 71.65.6 65.0 Autos: 76.6 75.0 Medium Trucks: 66.5 65.0 Autos: 71.3 <td< td=""><td>Near/Far La</td><td>ne Distance:</td><td>52 feet</td><td></td><td>Veh</td><td>icleType</td><td>1</td><td>Day</td><td>Evening</td><td>Night</td><td>Daily</td></td<>	Near/Far La	ne Distance:	52 feet		Veh	icleType	1	Day	Evening	Night	Daily
Barrier Type (IV-Wall, 1-Berm): 0.0 feet Heavy Trucks: 86.5% 2.7% 10.8% 5.77 Centerline Dist. to Doserver: 5.0 feet Autos: 0.000 Moise Source Elevations (in feet) Autos: 0.000 Deserver Height (Above Pad): 5.0 feet Autos: 0.000 Medium Trucks: 2.297 Moise Source Elevation: 0.0 feet Autos: 0.00 Grade Adjustment: 0.0 Road Elevation: 0.0 feet Autos: 48.724 Heavy Trucks: 48.559 FHWA Noise Model Calculations VenicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.2 2.26 0.07 -1.20 -4.67 0.000 0.0 Medium Trucks: 85.38 -9.84 0.09 -1.20 -5.38 0.000 0.0 Urhitigated Noise Levels (without Topa and barrier attenuation) Leq Day Leq Day Leq Cening Len Nicks: 70.2 77 Medium Trucks: 66.5 65.0	Site Data					A	utos:	77.5%	12.9%	9.6%	91.81%
Barrier Type (0-Wall, 1-Bern): 0.0 Heavy Trucks: 86.5% 2.7% 10.8% 5.67 Centerline Dist. to Desriver: 55.0 feet Noise Source Elevations (in feet) Autos: 0.000 Medium Trucks: 2.297 Noise Source Clovations (in feet) Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 48.724 Heavy Trucks: 48.724 Heavy Trucks: 48.724 Heavy Trucks: 48.542 Heavy Trucks: 48.542 Heavy Trucks: 48.542 Heavy Trucks: 48.559 Heavy Trucks: 48.542 Heavy Trucks: 1.3 0.00	Ba	rrier Height:	0.0 feet		м	edium Tr	ucks:	84.8%	4.9%	10.3%	2.52%
Centerline Dist. to Barrier: 55.0 feet Centerline Dist. to Observer: 55.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Grade: 0.0 feet Road Grade: 0.0 % Left View: -90.0 degrees FHWA Noise Model Calculations Verkicle Type Vehicle Type REMEL Traffic Flow Vehicle Type Red Hour Leg Day Autos: 70.20 2.26 0.09 -1.20 -4.67 Medium Trucks: 81.00 -0.0 Heavy Trucks: 81.00 -1.3.6 0.09 -1.20 -4.67 0.000 Medium Trucks: 81.00 -13.36 0.09 -1.20 Vehicle Type Leg New Hour Leg Avering Leg Night Ldn Vehicle Type Leg Peak Hour Leg Day Leg Evening Leg Night C/nt Medium Trucks: 66.5 65.0 58.7 <t< td=""><td></td><td></td><td>0.0</td><td></td><td>1</td><td>Heavy Tr</td><td>ucks:</td><td>86.5%</td><td>2.7%</td><td>10.8%</td><td>5.67%</td></t<>			0.0		1	Heavy Tr	ucks:	86.5%	2.7%	10.8%	5.67%
Centerline Dist. to Observer: 55.0 feet Autos: 0.000 Barrier Distance to Observer: 0.0 feet Autos: 2.297 Observer Height (Above Pad): 5.0 feet Heavy Trucks: 8.004 Grade Adjustment: 0.0 Pad Elevation: 0.0 feet Lane Equivalent Distance (in feet) Lane Equivalent Distance (in feet) Autos: 48.559 FHWA Noise Model Calculations Vehicle Type REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berrier Atten Berrier Atten Medium Trucks: 48.559 FHWA Noise Model Calculations Vehicle Type REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berrier Atten Medium Trucks: 48.559 FHWA Noise Model Calculations Vehicle Type REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berrier Atten Medium Trucks: 48.559 Ummitigated Noise Levels (without Topo and barrier attenuation) Vehicle Type Leq Paek Hour Leq Day Leq Evening Leq Night Ldn <t< td=""><td>Centerline Di</td><td>st. to Barrier:</td><td>55.0 feet</td><td></td><td>Noiso S</td><td>urco Ek</td><td>wations</td><td>(in fo</td><td>of</td><td></td><td></td></t<>	Centerline Di	st. to Barrier:	55.0 feet		Noiso S	urco Ek	wations	(in fo	of		
Barrier Distance to Observer: 0.0 feet Medium Trucks: 2.297 Observer Height (Above Pad): 5.0 feet Heavy Trucks: 8.004 Grade Adjustment: 0.0 Pad Elevation: 0.0 feet Late Equivalent Distance (in feet) Late Equivalent Distance (in feet) Late Equivalent Distance (in feet) Medium Trucks: 48.542 Right View: 90.0 degrees Heavy Trucks: 48.559 Heavy Trucks: 48.559 FHWA Noise Model Calculations Traffic Flow Distance Finite Road Fresnel Barrier Atten Bern Atten Autos: 70.20 2.26 0.07 -1.20 -4.67 0.000 0.0 Medium Trucks: 81.00 -13.36 0.09 -120 -5.38 0.000 0.0 Unnitigated Noise Levels (without Topo and barrier attenuation) Leq Evening Leq Evening Leq Night Ldn CNEL Autos: 71.3 69.4 67.7 61.6 70.2 70 Medium Trucks: 66.5 65.0 58.7 57.1 66.6 65.0	Centerline Dist.	to Observer:	55.0 feet		NOISE 30				eŋ		
Observer Height (Above Pad): 5.0 feet Heary Trucks: 8.004 Grade Adjustment: 0.0 Road Elevation: 0.0 feet Lane Equivalent Distance (in feet) Left View: 90.0 degrees Autos: 48.724 Heavy Trucks: 48.542 Wehicle Type REMEL Traffic Flow Distance Finite Road Fressel Barrier Atten Berm Atten Autos: 70.2 2.26 0.07 -1.20 -4.67 0.000 0.0 Medium Trucks: 81.30 -13.36 0.09 -1.20 -5.38 0.000 0.0 Unnitigated Noise Levels (without Topo and barrier attenuation) Leq Evening Leq Night Ldn CNEL Vehicle Type Leq Deak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 71.3 69.4 67.7 61.6 70.2 77 Medium Trucks: 66.5 65.0 58.7 57.1 66.6	Barrier Distance	to Observer:	0.0 feet		Madiu						
Pad Elevation: 0.0 feet Lane Equivalent Distance (in feet) Road Glevation: 0.0 feet Lane Equivalent Distance (in feet) Road Grade: 0.0% Autos: 48.724 Left View: -90.0 degrees Medium Trucks: 48.559 FHWA Noise Model Calculations Vehicle Type REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berner Atten VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berner Atten VehicleType REMEL Traffic Flow Distance Finite Road Fessnel 0.000 0.00 Medium Trucks: 81.00 -13.36 0.09 -1.20 -4.67 0.000 0.00 Medium Trucks: 85.38 -9.84 0.09 -1.20 -5.38 0.000 0.00 Ummitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leg Peak Hour Leg Day Leg Evening Leg Night Ldn CNEL Autos: 71.3 69.	Observer Height (Above Pad):	5.0 feet						Grade Adi	ustment	0.0
Road Grade: 0.0% Autos: 48.724 Left View: -90.0 degrees Medium Trucks: 48.559 FHWA Noise Model Calculations Vehicle Type RedML Traffic Flow Distance Finite Road Fresnel Barrier Atten Berner Atten Vehicle Type REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berner Atten Medium Trucks: 81.00 -13.36 0.09 -1.20 -4.67 0.000 0.0 Heavy Trucks: 81.00 -13.36 0.09 -1.20 -5.38 0.000 0.0 Untitigated Noise Levels (without Topo and barrier attenuation) Vehicle Type Leg Peak Hour Leg Aby Leg Evening Leg Night Ldn CNEL Autos: 71.3 69.4 67.7 61.6 70.2 70 Medium Trucks: 66.5 65.0 58.7 57.1 65.6 66 Heavy Trucks: 74.4 73.0 64.0 65.2 73.6 73	Pa	ad Elevation:	0.0 feet					-		dourioni	0.0
Left View: -90.0 degrees Medium Trucks: 48.542 Right View: 90.0 degrees Heavy Trucks: 48.559 FHWA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berma Atten Autos: T0.20 2.26 0.07 -1.20 -4.67 0.000 0.0 Medium Trucks: 81.00 -13.36 0.09 -1.20 -4.67 0.000 0.0 Medium Trucks: 85.38 -9.84 0.09 -1.20 -5.38 0.000 0.0 Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Evening Leq Night Ldn CNEL Autos: 71.3 69.4 67.7 61.6 70.2 70 Medium Trucks: 66.5 65.0 58.7 57.1 66.6 66.6 67.2 73.6 73 Vehicle Noise: 76.6 75.0 69.6 67.2 75.7 76	Roa	ad Elevation:	0.0 feet		Lane Eq				eet)		
Right View: 90.0 degrees Heavy Trucks: 48.559 FHWA Noise Model Calculations Heavy Trucks: 48.559 VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atter Autos: 70.20 2.26 0.07 -1.20 -4.67 0.000 0.00 Medium Trucks: 85.38 -9.84 0.09 -1.20 -5.38 0.000 0.00 Unnitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Qay Leq Evening Leq Night Ldn CNEL Medium Trucks: 66.5 65.0 58.7 57.1 65.6 66 Heavy Trucks: 74.4 73.0 64.0 65.2 73.6 73 Vehicle Noise: 76.6 75.0 69.6 67.2 75.7 76 Centerline Distance to Noise Contour (in feet)	1		0.0%								
FHWA Noise Model Calculations Finite Road Freshel Barrier Atten Berm Atten VehicleType REMEL Traffic Flow Distance Finite Road Freshel Barrier Atten Berm Atten Autos: 70.20 2.26 0.07 -1.20 -4.67 0.000 0.0 Medium Trucks: 81.00 -13.36 0.09 -1.20 -4.87 0.000 0.0 Heavy Trucks: 85.38 -9.84 0.09 -1.20 -5.38 0.000 0.0 Unnitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Qay Leq Evening Leq Night Ldn CNEL Autos: 71.3 69.4 67.7 61.6 70.2 70 Medium Trucks: 66.5 65.0 58.7 57.1 65.6 66 Heavy Trucks: 74.4 73.0 64.0 65.2 73.6 73 Vehicle Noise: 76.6 75.0 69.6 67.2 75.7 76			-90.0 degrees								
VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 2.26 0.07 -1.20 -4.67 0.000 0.0 Medium Trucks: 81.00 -13.36 0.09 -1.20 -4.67 0.000 0.0 Heavy Trucks: 85.38 -9.84 0.09 -1.20 -5.38 0.000 0.0 Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Qay Leq Evening Leq Night Ldn CNEL Medium Trucks: 66.5 65.0 58.7 57.1 65.6 66 Heavy Trucks: 74.4 73.0 64.0 65.2 73.6 73 Vehicle Noise: 76.6 75.0 69.6 67.2 75.7 76 Centerline Distance to Noise Contour (in feet)		Right View:	90.0 degrees		Heav	y Trucks	48.5	59			
Autos: 70.20 2.26 0.07 -1.20 -4.67 0.000 0.0 Medium Trucks: 81.00 -13.36 0.09 -1.20 -4.67 0.000 0.0 Heavy Trucks: 85.38 -9.84 0.09 -1.20 -4.87 0.000 0.0 Unmitigated Noise Levels (without Top can barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 71.3 69.4 67.7 61.6 70.2 77 Medium Trucks: 66.5 65.0 58.7 57.1 66.6 66 Heavy Trucks: 76.6 75.0 69.6 67.2 75.7 76 Centerline Distance to Noise Contour (in feet)	FHWA Noise Mode	el Calculation:	s		1						
Medium Trucks: 81.00 -13.36 0.09 -1.20 -4.87 0.000 0.0 Heavy Trucks: 85.38 -9.84 0.09 -1.20 -5.38 0.000 0.0 Unmitigated Noise Levels (without Topo and barrier attenuation)	VehicleType	REMEL	Traffic Flow	Distance	Finite	Road	Fresne	e/	Barrier Atte	en Ber	m Atten
Heavy Trucks: 85.38 -9.84 0.09 -1.20 -5.38 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 Medium Trucks: 61.5 65.0 58.7 57.1 66.6 66 Heavy Trucks: 74.4 73.0 64.0 65.2 73.6 77 Vehicle Noise: 76.6 75.0 69.6 67.2 75.7 76.6 Centerline Distance to Noise Contour (in feet)											0.00
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 71.3 69.4 67.7 61.6 70.2 70 Medium Trucks: 66.5 65.0 58.7 57.1 66.6 66 Heavy Trucks: 74.4 73.0 64.0 65.2 73.6 73 Vehicle Noise: 76.6 75.0 69.6 67.2 75.7 76 Centerline Distance to Noise Contour (in feet)											0.00
VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 71.3 69.4 67.7 61.6 70.2 70 Medium Trucks: 66.5 65.0 58.7 57.1 66.6 66 Heavy Trucks: 74.4 73.0 64.0 65.2 73.6 73 Vehicle Noise: 76.6 75.0 69.6 67.2 75.7 76 Centerline Distance to Noise Contour (in feet)	Heavy Trucks:	85.38	-9.84	0.	09	-1.20		-5.38	0.0	000	0.00
Autos: 71.3 69.4 67.7 61.6 70.2 77 Medium Trucks: 66.5 65.0 58.7 57.1 66.6 66 Heavy Trucks: 74.4 73.0 64.0 65.2 73.6 77 Vehicle Noise: 76.6 75.0 69.6 67.2 75.7 76 Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 131 283 610 1,31					,						
Medium Trucks: 66.5 65.0 58.7 57.1 65.6 66 Heavy Trucks: 74.4 73.0 64.0 65.2 73.6 77 Vehicle Noise: 76.6 75.0 69.6 67.2 75.7 66 Centerline Distance to Noise Contour (in feet) Ldn: 70 dBA 65 dBA 60 dBA 55 dBA						Leq I			-		
Heavy Trucks: 74.4 73.0 64.0 65.2 73.6 73.7 Vehicle Noise: 76.6 75.0 69.6 67.2 75.7 76 Centerline Distance to Noise Contour (in feet)											70.
Vehicle Noise: 76.6 75.0 69.6 67.2 75.7 76 Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 131 283 610 1,31											65.
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 131 283 610 1,31				-							73.
70 dBA 65 dBA 60 dBA 55 dBA Ldn: 131 283 610 1,31				.0	69.6		67.2		75.7		76.
Ldn: 131 283 610 1,31	Centerline Distanc	ce to Noise Co	ontour (in feet)			65	10.4	~	0.404		-04
						65 0		6		55	
UNEL 101 200 001 1,01			CINE	:L:	137		296		637		1,372

	FHWA-RI	0-77-108 HIGH	WAY NO	DISE	PREDIC	TION M	IODEL (9/	12/20	21)		
	rio: 2024+P ne: Panama Ir						Name: M umber: 13		c Gateway	'	
	ent: w/o S. H St					<i>JUD N</i>	umber. 13	923			
SITE	SPECIFIC IN	IPUT DATA								5	
Highway Data				S	Site Con	ditions	(Hard = 1	0, So	ft = 15)		
Average Daily	Traffic (Adt):	33,154 vehicl	es				A	utos:	15		
Peak Hour	r Percentage:	10.00%			Me	dium Tri	ucks (2 Ax	les):	15		
Peak H	Hour Volume:	3,315 vehicle	5		He	avy Tru	cks (3+ Ax	les):	15		
Ve	ehicle Speed:	50 mph		1	/ehicle I	Nix					
Near/Far La	ane Distance:	52 feet		F		cleType	D	ay	Evening	Night	Daily
Site Data					-			7.5%	12.9%	9.6%	
Ba	nrrier Heiaht:	0.0 feet			Me	edium Ti	rucks: 8	4.8%	4.9%	10.3%	2.36
Barrier Type (0-V		0.0			ŀ	leavy T	rucks: 8	6.5%	2.7%	10.8%	5.31
Centerline D	ist. to Barrier:	55.0 feet			Voise So	urce El	evations	(in fe	et)		
Centerline Dist.	to Observer:	55.0 feet		1		Auto			- 4		
Barrier Distance	to Observer:	0.0 feet			Mediu	n Truck					
Observer Height	(Above Pad):	5.0 feet				y Truck			Grade Ad	iustmen	: 0.0
P	ad Elevation:	0.0 feet									
Ro	ad Elevation:	0.0 feet		L	ane Equ		Distance		eet)		
	Road Grade:	0.0%				Auto		24			
	Left View:	-90.0 degre	es			n Truck		12			
	Right View:	90.0 degre	es		Heav	y Truck	s: 48.55	59			
FHWA Noise Mod	lel Calculation	s									
VehicleType	REMEL	Traffic Flow	Distar	се	Finite	Road	Fresne	1 1	Barrier Atte	en Be	rm Atter
Autos:	70.20	2.56		0.07	7	-1.20	-4	1.67	0.0	000	0.0
Medium Trucks:	81.00	-13.36		0.09	9	-1.20	-4	1.87	0.0	000	0.0
Heavy Trucks:	85.38	-9.84		0.09	9	-1.20		5.38	0.0	000	0.0
Unmitigated Nois	e Levels (with	out Topo and	barrier a	atteni	uation)						
VehicleType	Leq Peak Hou			eq Ev	/ening	Leq	Night		Ldn		NEL
Autos:			69.7		68.0		61.9		70.5		71
	66		65.0		58.7		57.1		65.6	-	65
Medium Trucks:		4	73.0		64.0		65.2		73.6		73
Medium Trucks: Heavy Trucks:	74	.4							75.8	2	76
		.7	75.1		69.8		67.3		/5.0	,	70
Heavy Trucks:	76	.7	75.1								
Heavy Trucks: Vehicle Noise:	76	.7	75.1	70 d	iBA	65	dBA	6	0 dBA	55	dBA
Heavy Trucks: Vehicle Noise:	76	.7 ontour (in feet	75.1	70 d		65		6		55	

FHW	/A-RD-77	7-108 HIGH	WAY N	IOISE	PREDIC	TION N	IODEL (9	/12/20)21)		
Scenario: 2029 Road Name: Panar Road Segment: w/o S.							Name: N lumber: 1		c Gateway		
SITE SPECIF	IC INPU	T DATA				N	IOISE N	IODE	L INPUTS	3	
Highway Data				5	Site Con	ditions	(Hard =	10, So	ft = 15)		
Average Daily Traffic (A	dt): 31,	634 vehicle	s					Autos:	15		
Peak Hour Percenta	ge: 10.	.00%			Me	dium Tr	ucks (2 A	xles):	15		
Peak Hour Volu	ne: 3,1	63 vehicles	6		He	avy Tru	cks (3+ A	xles):	15		
Vehicle Spe	ed:	50 mph		1	Vehicle I	Niv					
Near/Far Lane Distar	ce:	52 feet				cleType		Dav	Evening	Night	Daily
Site Data					veni			77.5%	12.9%	9.6%	
		0.0 feet			Me	dium T		B4.8%	4.9%	10.3%	
Barrier Heig Barrier Type (0-Wall, 1-Ber		0.0 teet			F	leavy T		B6.5%		10.8%	
Centerline Dist. to Ban	· ·	0.0 55.0 feet									
Centerline Dist. to Obser		55.0 feet		٨	Voise So		evations		et)		
Barrier Distance to Obser		0.0 feet				Auto					
Observer Height (Above Pa		5.0 feet				n Truck					
Pad Elevat	· ·	0.0 feet			Heav	y Truck	s: 8.0	104	Grade Adj	ustment	: 0.0
Road Elevat		0.0 feet		L	ane Equ	ivalen	Distanc	e (in f	eet)		
Road Gra		.0%				Auto	s: 48.7	24	,		
Left Vi	ew: -9	90.0 degree	s		Mediur	n Truck	s: 48.5	542			
Right Vi		90.0 degree			Heav	y Truck	s: 48.5	59			
FHWA Noise Model Calcul	ations										
VehicleType REME		affic Flow	Dista		Finite		Fresn		Barrier Atte		m Atten
	0.20	2.34		0.07		-1.20		4.67	0.0		0.000
	81.00	-13.28		0.09	-	-1.20		4.87	0.0		0.000
Heavy Trucks: 8	35.38	-9.76		0.09	9	-1.20		-5.38	0.0	00	0.000
Unmitigated Noise Levels		Topo and	barrier	atten	uation)						
VehicleType Leq Pea		Leq Day		Leq Ev		Leq	Night		Ldn		NEL
Autos:	71.4		69.5		67.7		61.7		70.3		70.9
Medium Trucks:	66.6		65.1		58.7		57.2		65.7		65.9
Heavy Trucks:	74.5		73.1		64.0		65.3		73.7		73.8
Vehicle Noise:	76.7		75.1		69.7		67.3		75.8		76.0
Centerline Distance to Noi	se Conto	our (in feet)									
				70 a	1BA	65	dBA	6	0 dBA	55	dBA
			Ldn: VEL:		133 139		287 299		617 644		1,330 1.388

	FHWA-RD	-77-108 HIGH	WAY	NOISE F	REDICI		ODEL (9/12/20	021)		
Scenario	: 2029+P					Project	Name:	Majest	ic Gateway	/	
Road Name	: Panama Ln					Job N	umber:	13923			
Road Segment	w/o S. H St.										
	PECIFIC IN	PUT DATA							L INPUT	5	
Highway Data				S	ite Cond	litions	(Hard =	10, So	oft = 15)		
Average Daily T	raffic (Adt):	33,717 vehicle	es					Autos:	15		
Peak Hour F	Percentage:	10.00%			Med	lium Tri	ucks (2	Axles):	15		
Peak Ho	ur Volume:	3,372 vehicles	5		Hea	vy Tru	cks (3+ .	Axles):	15		
Veh	icle Speed:	50 mph		V	ehicle M	ix					
Near/Far Lan	e Distance:	52 feet		-		leType		Dav	Evening	Night	Daily
Site Data							Autos:	77.5%		9.6%	
Barr	ier Height:	0.0 feet			Me	dium T	ucks:	84.8%	4.9%	10.3%	2.369
Barrier Type (0-Wa	•	0.0			н	eavy Ti	ucks:	86.5%	2.7%	10.8%	5.329
Centerline Dist		55.0 feet		-							
Centerline Dist. to		55.0 feet		N	oise Sol				eet)		
Barrier Distance to	Observer:	0.0 feet				Auto		000			
Observer Height (A	bove Pad):	5.0 feet			Medium			297	Crada Ad	iuntmont	0.0
Pad	d Elevation:	0.0 feet			Heavy	Truck	5. 8.	004	Grade Adj	usimeni	0.0
Road	d Elevation:	0.0 feet		Li	ane Equ	ivalent	Distan	ce (in f	feet)		
R	oad Grade:	0.0%				Auto	s: 48	724			
	Left View:	-90.0 degree	es		Medium	Truck	s: 48	542			
	Right View:	90.0 degree	es		Heavy	Truck	s: 48	559			
FHWA Noise Model	Calculations	5									
VehicleType	REMEL	Traffic Flow	Di	stance	Finite F	Road	Fresi	nel	Barrier Atte	en Ber	m Atten
Autos:	70.20	2.64		0.07		-1.20		-4.67		000	0.00
Medium Trucks:	81.00	-13.28		0.09		-1.20		-4.87		000	0.00
Heavy Trucks:	85.38	-9.76		0.09		-1.20		-5.38	0.0	000	0.00
Unmitigated Noise			<u> </u>		<u> </u>						
	.eq Peak Hou			Leq Eve	<u> </u>	Leq	Night		Ldn		VEL
Autos:	71		69.8		68.0		62.		70.6		71.
Medium Trucks:	66		65.1		58.7		57.		65.7		65.
Heavy Trucks:	74	-	73.1		64.0		65.		73.7		73.
Vehicle Noise:	76		75.2		69.8		67.	4	75.8	5	76.
Centerline Distance	to Noise Co	ntour (in feet,)								
			L	70 dl		65	dBA		i0 dBA		dBA
			Ldn:		135		290		626		1,348
		C	NEL:		141		303		654		1.409

Monday, November 8, 2021

FHWA	RD-77-108 HIG	GHWAY NO	DISE F	PREDIC	TION MC	DDEL (9	/12/20	021)		
Scenario: 2042 Road Name: Panama Road Segment: w/o S. H						Vame: N mber: 1		ic Gatewa	y	
SITE SPECIFIC	INPUT DATA	4						L INPUT	s	
Highway Data			S	ite Cond	ditions (l	Hard = 1	10, So	oft = 15)		
Average Daily Traffic (Adt)	: 33,535 vehi	cles				A	Autos:	15		
Peak Hour Percentage	: 10.00%				dium True					
Peak Hour Volume	: 3,354 vehic	les		Hea	avy Truck	ks (3+ A	xles):	15		
Vehicle Speed			V	ehicle N	lix					
Near/Far Lane Distance	: 52 feet		-		cleType	l	Day	Evening	Night	Daily
Site Data					A	utos:	, 77.5%	12.9%	9.6%	91.81
Barrier Height	: 0.0 feet			Me	dium Tru	icks: 8	84.8%	4.9%	10.3%	2.52
Barrier Type (0-Wall, 1-Berm)				h	leavy Tru	icks: 8	86.5%	2.7%	10.8%	5.67
Centerline Dist. to Barrier	: 55.0 feet		N	nise So	urce Ele	vations	(in fe	oof)		
Centerline Dist. to Observer	: 55.0 feet			0136 00	Autos:					
Barrier Distance to Observer	: 0.0 feet			Mediun	n Trucks:					
Observer Height (Above Pad)	: 5.0 feet				y Trucks:			Grade Ad	liustment	0.0
Pad Elevation	0.0 feet								,	
Road Elevation	: 0.0 feet		La	ane Equ	ivalent l			feet)		
Road Grade	0.070				Autos:					
Left View	· 00.0 dog.	'ees			n Trucks:					
Right View	: 90.0 degi	ees		Heav	y Trucks:	48.5	59			
FHWA Noise Model Calculati	ons									
VehicleType REMEL	Traffic Flow	/ Distar	псе	Finite	Road	Fresne	e/	Barrier Att	en Ber	m Atter
Autos: 70.	20 2.5	59	0.07		-1.20	-	4.67	0.	000	0.00
Medium Trucks: 81.	00 -13.0)3	0.09		-1.20	-	4.87	0.	000	0.00
Heavy Trucks: 85.	38 -9.5	50	0.09		-1.20	-	-5.38	0.	000	0.00
Unmitigated Noise Levels (w	ithout Topo an	d barrier a	ttenu	ation)						
VehicleType Leq Peak F			eq Eve		Leq N			Ldn		VEL
	71.7	69.8		68.0		61.9		70.		71
	66.9	65.4		59.0		57.4		65.	-	66
	74.8	73.3		64.3		65.6		73.		74
Vehicle Noise:	76.9	75.4		69.9		67.6		76.	0	76
Centerline Distance to Noise	Contour (in fe	et)								
			70 dE		65 d		6	60 dBA		dBA
		Ldn:		138		298		642		1,38
		CNEL:		144		311		670		1.44

	FHWA-RI	0-77-108 HIGH	IWAY N	OISE	PREDIC	TION M	ODEL (9/1	2/2021)		
	rio: 2042+P ne: Panama Lr						Name: Ma umber: 13	jestic Gateway		
	ent: w/o S. H SI					00071		20		
SITE	SPECIFIC IN	IPUT DATA						DEL INPUTS	6	
Highway Data				S	Site Con	ditions	(Hard = 10	, Soft = 15)		
Average Daily	Traffic (Adt):	35,618 vehicle	es				Au	tos: 15		
Peak Hou	r Percentage:	10.00%			Me	dium Tri	ucks (2 Axl	es): 15		
Peak I	Hour Volume:	3,562 vehicle	s		He	avy Tru	cks (3+ Axl	es): 15		
Ve	ehicle Speed:	50 mph		v	/ehicle I	Mix				
Near/Far La	ane Distance:	52 feet		F		icleType	Da	y Evening	Night	Daily
Site Data								.5% 12.9%	9.6%	
Ba	rrier Height:	0.0 feet			Me	edium T	rucks: 84	.8% 4.9%	10.3%	2.37
Barrier Type (0-V		0.0			ŀ	leavy T	rucks: 86	.5% 2.7%	10.8%	5.34
	ist. to Barrier:	55.0 feet		•	loise So	ource Fl	evations (in feet)		
Centerline Dist.	to Observer:	55.0 feet		-		Auto				
Barrier Distance	to Observer:	0.0 feet			Mediu	m Truck	0.000			
Observer Height	(Above Pad):	5.0 feet				y Truck			ustment	: 0.0
F	ad Elevation:	0.0 feet								
Ro	ad Elevation:	0.0 feet		L	ane Equ		Distance			
	Road Grade:	0.0%				Auto				
	Left View:	-90.0 degre				m Truck				
	Right View:	90.0 degre	es		Heav	y Truck	s: 48.55	9		
FHWA Noise Mod	lel Calculation	s								
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresnel	Barrier Atte	en Ber	m Atter
Autos:		2.87		0.07	7	-1.20	-4	.67 0.0	00	0.0
Medium Trucks	81.00	-13.03		0.09	9	-1.20	-4	.87 0.0	00	0.0
Heavy Trucks	85.38	-9.50		0.09	9	-1.20	-5	.38 0.0	00	0.0
Unmitigated Nois	e Levels (with	out Topo and	barrier a	attenı	uation)					
VehicleType	Leq Peak Hou			.eq Ev	rening	Leq	Night	Ldn		NEL
Autos:			70.0		68.3		62.2	70.8		71
Medium Trucks			65.4		59.0		57.4	65.9		66
		.8	73.3		64.3		65.6	73.9		74
Heavy Trucks								76.1		76
Heavy Trucks: Vehicle Noise:		.0	75.5		70.1		67.6	70.1		
Vehicle Noise	77									
	77	ontour (in feet)	70 d	IBA	65	dBA	60 dBA	55	dBA
Vehicle Noise	77	ontour (in feet		70 d		65			55	<i>dBA</i> 1,40 1,46

F	HWA-RD	-77-108 HIGH	WAY	NOISE	PREDIC		IODEL (9	9/12/20	021)		
Scenario: E Road Name: Pa Road Segment: e/o							Name: N lumber: 1		ic Gateway		
SITE SPEC	IFIC IN	PUT DATA				ł	IOISE N	IODE	L INPUTS	3	
Highway Data					Site Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily Traffi	c (Adt):	21,669 vehicle	s					Autos:	15		
Peak Hour Perce	entage:	10.00%			Me	dium Tr	ucks (2 A	xles):	15		
Peak Hour V	olume:	2,167 vehicles	;		He	avy Tru	cks (3+ A	xles):	15		
Vehicle	Speed:	45 mph			Vehicle I	Mix					
Near/Far Lane Di	stance:	52 feet		-		icleType		Dav	Evening	Night	Daily
Site Data					1011			77.5%	•	9.6%	
Barrier I	loiahti	0.0 feet			M	edium T		84.8%		10.3%	2.52%
Barrier Type (0-Wall, 1-		0.0 1001			1	Heavy T	rucks:	86.5%	2.7%	10.8%	5.67%
Centerline Dist. to		55.0 feet									
Centerline Dist. to Ob		55.0 feet		1	Noise Sc		levations		eet)		
Barrier Distance to Ob		0.0 feet				Auto		000			
Observer Height (Abov		5.0 feet				m Truck		297			
Pad Ele		0.0 feet			Heav	ry Truck	s: 8.0	004	Grade Adj	ustment	: 0.0
Road Ele	vation:	0.0 feet		1	Lane Eq	uivalen	t Distanc	e (in t	feet)		
Road	Grade:	0.0%				Auto	s: 48.7	724			
Lei	t View:	-90.0 degree	s		Mediu	m Truck	s: 48.5	542			
Righ	t View:	90.0 degree	s		Heav	ry Truck	s: 48.5	559			
FHWA Noise Model Cal	culations	;									
VehicleType RE	MEL	Traffic Flow	Dis	tance	Finite	Road	Fresn	el	Barrier Atte	en Ber	m Atten
Autos:	68.46	1.15		0.0		-1.20		-4.67	0.0		0.000
Medium Trucks:	79.45	-14.47		0.0		-1.20		-4.87	0.0		0.000
Heavy Trucks:	84.25	-10.94		0.0	9	-1.20		-5.38	0.0	00	0.000
Unmitigated Noise Lev	els (witho	out Topo and I	barrie	er atten	uation)						
VehicleType Leq I	Peak Hou	r Leq Day	-	Leq E	vening	Leq	Night		Ldn		VEL
Autos:	68.	-	6.6		64.8		58.8		67.4		68.0
Medium Trucks:	63.	-	62.4		56.0		54.5		62.9		63.2
Heavy Trucks:	72.	-	70.8		61.7		63.0		71.3		71.5
Vehicle Noise:	74.	2	72.6		66.9		64.8		73.2		73.5
Centerline Distance to	Noise Co	ntour (in feet)		_				1			
			L	70 0	dBA	65	dBA	6	0 dBA	55	dBA
			Ldn:		90		195		419		903
		CI	IEL:		94		203		437		941

	FHWA-RD	-77-108 HIGH	NAY I	NOISE P	REDICTIO	DN MO	DEL (9	/12/20	21)		
Scenario:	E+P				Pr	oject N	ame: N	lajesti	c Gateway		
Road Name:	Panama Ln				J	ob Nur	nber: 1	3923			
Road Segment:	e/o S. H St.										
	ECIFIC IN	PUT DATA							L INPUT	5	
Highway Data				Si	te Conditi	ons (H	lard = 1	10, So	ft = 15)		
Average Daily Tr	affic (Adt):	22,327 vehicle	s				A	utos:	15		
Peak Hour Pe	ercentage:	10.00%			Mediu	m Truc	ks (2 A	xles):	15		
Peak Hou	r Volume:	2,233 vehicles			Heavy	Truck	s (3+ A	xles):	15		
Vehic	le Speed:	45 mph		Ve	hicle Mix						
Near/Far Lane	Distance:	52 feet			Vehicle		1	Dav	Evening	Night	Daily
Site Data								77.5%	12.9%	9.6%	
Barrie	er Height:	0.0 feet			Media	um Tru	cks: 8	34.8%	4.9%	10.3%	2.45%
Barrier Type (0-Wall		0.0 1001			Hea	vy Tru		36.5%		10.8%	5.50%
Centerline Dist.		55.0 feet				·					
Centerline Dist. to		55.0 feet		No	oise Sour				et)		
Barrier Distance to		0.0 feet				Autos:	0.0				
Observer Height (Ab		5.0 feet			Medium 1		2.2				
	Elevation:	0.0 feet			Heavy 7	rucks:	8.0	04	Grade Adj	ustment.	0.0
	Elevation:	0.0 feet		La	ne Equiv	alent D	istanc	e (in f	eet)		
	ad Grade:	0.0%		_		Autos:	48.7		,		
	Left View:	-90.0 degree	s		Medium 7	rucks:	48.5	42			
R	light View:	90.0 degree	s		Heavy T	rucks:	48.5	59			
FHWA Noise Model	Calculations	i		1							
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite Ro	ad	Fresne	e/ .	Barrier Atte	en Ber	m Atten
Autos:	68.46	1.29		0.07		1.20		4.67	0.0		0.00
Medium Trucks:	79.45	-14.47		0.09		1.20		4.87		00	0.00
Heavy Trucks:	84.25	-10.94		0.09	-	1.20	-	5.38	0.0	00	0.00
Unmitigated Noise L					<u> </u>					1	
	eq Peak Hou			Leq Eve		Leq Ni	•		Ldn		VEL
Autos:	68.		6.7		65.0		58.9		67.5		68.
Medium Trucks:	63.		32.4		56.0		54.5		62.9		63.
Heavy Trucks:	72.		70.8		61.7		63.0		71.3		71.
Vehicle Noise:	74.	2	72.6		67.0		64.8		73.3	5	73.
Centerline Distance	to Noise Co	ntour (in feet)									
				70 dE		65 dE		6	0 dBA		dBA
			.dn:		91		196		422		909
		CA	IEL:		95		204		439		947

Monday, November 8, 2021

	FHWA-RD	0-77-108 HIGHV	VAY NOI	SE	PREDIC	TION M	ODEL (9/12/2	021)			
Scenari Road Nam Road Segmer	e: Panama Ln						Name: I umber: `		tic Gatewa	ау		
	SPECIFIC IN	PUT DATA							L INPU	TS		
Highway Data				1	Site Con	ditions (Hard =	10, S	oft = 15)			
Average Daily	Traffic (Adt):	22,393 vehicles	6					Autos:	15			
	Percentage:	10.00%				dium Tru						
	our Volume:	2,239 vehicles			Hea	avy Truc	ks (3+ A	(xles)	15			
	nicle Speed:	45 mph		ī	Vehicle N	lix						
Near/Far Lar	ne Distance:	52 feet			Vehi	cleType		Day	Evening	Nig	ht	Daily
Site Data						A	utos:	77.5%	6 12.9%	9	.6%	91.819
Bar	rier Heiaht:	0.0 feet			Me	dium Tr	ucks:	84.8%	6 4.9%	10	.3%	2.529
Barrier Type (0-W		0.0			H	leavy Tr	ucks:	86.5%	6 2.7%	10	.8%	5.67%
Centerline Dis		55.0 feet		H	Noise So	uree El	vetion	n /im f	oot)			
Centerline Dist. I	o Observer:	55.0 feet		Ľ	NUISE 30	Autos		300	eel)			
Barrier Distance t	o Observer:	0.0 feet			Madium	n Trucks		297				
Observer Height (J	Above Pad):	5.0 feet				y Trucks		207	Grade A	diustr	nent [.]	0.0
Pa	d Elevation:	0.0 feet				·				ajaoai	ioni.	0.0
Roa	d Elevation:	0.0 feet		1	Lane Equ				feet)			
F	Road Grade:	0.0%				Autos						
	Left View:	-90.0 degrees				n Trucks						
	Right View:	90.0 degrees	6		Heav	y Trucks	: 48.	559				
FHWA Noise Mode	I Calculation:	5										
VehicleType	REMEL	Traffic Flow	Distanc	-	Finite		Fresn	-	Barrier A		Bern	n Atten
Autos:	68.46	1.29		0.0		-1.20		-4.67		.000		0.00
Medium Trucks:	79.45	-14.32		0.0		-1.20		-4.87		.000		0.00
Heavy Trucks:	84.25	-10.80		0.0		-1.20		-5.38	0	.000		0.00
Unmitigated Noise												
VehicleType Autos:	Leq Peak Hou 68	1 1	6.7	γEι	vening 65.0	Leq I	Vight 58.9		Ldn 67		CN	
Medium Trucks:	64		0.7 2.5		56.1		54.6		63			68. 63.
Heavy Trucks:	64 72		0.9		50.1 61.9		54.0 63.1			.1		71.0
Vehicle Noise:	72	-	2.7		67.1		64.9		73			73.
			2.1		57.1		04.5	, 	73			73.
Centerline Distanc	e to Noise Co	ontour (in feet)		70 c	dBA	65 0	iBA		60 dBA		55 a	BA
		L	.dn:		92		199	1	42	9		923
		CN	EL:		96		207		44	6		962

	FHWA-RI	D-77-108 HIGH	IWAY NO	ISE PRE		IODEL (9/1	2/2021)		
Road Nan	rio: 2024+P ne: Panama Lr ent: e/o S. H St					Name: Ma lumber: 13	ijestic Gateway 923	y	
SITE	SPECIFIC IN	IPUT DATA					DEL INPUT	s	
Highway Data				Site C	onditions	(Hard = 10), Soft = 15)		
Average Daily	Traffic (Adt):	23,051 vehicle	es			Au	tos: 15		
Peak Hour	r Percentage:	10.00%			Medium Tr	ucks (2 Axl	es): 15		
Peak I	Hour Volume:	2,305 vehicle	s		Heavy Tru	cks (3+ Axl	es): 15		
Ve	ehicle Speed:	45 mph		Vehic	le Mix				
Near/Far La	ane Distance:	52 feet			ehicleType	e Da	ay Evening	Night	Daily
Site Data				- ·			7.5% 12.9%	9.6%	
Pa	rrier Heiaht:	0.0 feet			Medium T	rucks: 84	.8% 4.9%	10.3%	2.45
Barrier Type (0-V		0.0			Heavy T	rucks: 86	6.5% 2.7%	10.8%	5.51
	ist. to Barrier:	55.0 feet		Noior		evations (in fact)		
Centerline Dist.	to Observer:	55.0 feet		NOISE	Source E		,		
Barrier Distance	to Observer:	0.0 feet				0.00			
Observer Height	(Above Pad):	5.0 feet			dium Truck			liustmont	
P	ad Elevation:	0.0 feet		п	eavy Truck	s: 8.00	4 Graue Au	jusimeni	. 0.0
Ro	ad Elevation:	0.0 feet		Lane	Equivalen	t Distance	(in feet)		
	Road Grade:	0.0%			Auto	s: 48.72	4		
	Left View:	-90.0 degree	es	Me	dium Truck	s: 48.54	2		
	Right View:	90.0 degre	es	н	eavy Truck	s: 48.55	9		
FHWA Noise Mod	lel Calculation	s							
VehicleType	REMEL	Traffic Flow	Distan	ce Fir	ite Road	Fresnel	Barrier Att	en Ber	m Atter
Autos:	68.46	1.43		0.07	-1.20	-4	.67 0.0	000	0.0
Medium Trucks:	79.45	-14.32		0.09	-1.20	-4	.87 0.0	000	0.0
moulant maone.	7 3.40								0.0
Heavy Trucks:		-10.80		0.09	-1.20	-5	.38 0.0	000	0.0
Heavy Trucks:	84.25				-	-5	.38 0.0		
Heavy Trucks: Unmitigated Nois VehicleType	84.25 e Levels (with Leq Peak Hou	out Topo and Ir Leq Day	barrier a	t tenuatio q Evenin	n) g Leq	Night	Ldn	Ci	NEL
Heavy Trucks: Unmitigated Nois VehicleType Autos:	84.25 e Levels (with Leq Peak Hou 68	out Topo and Ir Leq Day	barrier at / Le 66.9	t tenuatio q Evenin 6	n) g Leq 5.1	Night 59.0	Ldn 67.	Ci	NEL 68
Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks:	84.25 e Levels (with Leq Peak Hou 68 64	out Topo and Ir Leq Day 8.8	barrier at / Le 66.9 62.5	t tenuatio q Evenin 6 5	n) g Leq 5.1 6.1	Night 59.0 54.6	Ldn 67. 63.	Ci 7 1	NEL 68 63
Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks:	84.25 e Levels (with Leg Peak Hou 68 64 72	out Topo and ur Leq Day 8.8 1.0 2.3	barrier at / Le 66.9 62.5 70.9	t tenuatio q Evenin 6 5 6	n) g Leq 5.1 6.1 1.9	Night 59.0 54.6 63.1	Ldn 67. 63. 71.	Ci 7 1 5	NEL 68 63 71
Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks:	84.25 e Levels (with Leg Peak Hou 68 64 72	out Topo and ur Leq Day 8.8 1.0 2.3	barrier at / Le 66.9 62.5	t tenuatio q Evenin 6 5 6	n) g Leq 5.1 6.1	Night 59.0 54.6	Ldn 67. 63.	Ci 7 1 5	NEL 68 63 71
Heavy Trucks: <u>Unmitigated Nois</u> VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	84.25 e Levels (with Leg Peak Hou 68 64 72 74	out Topo and Ir Leq Day 8.8 1.0 2.3 1.3	barrier at <u>Le</u> 66.9 62.5 70.9 72.8)	ttenuatio q Evenin 6 5 6 6	n) 2 Leq 5.1 5.1 1.9 7.1	Night 59.0 54.6 63.1 65.0	Ldn 67. 63. 71. 73.	Ci 7 1 5 4	NEL 63 71 73
Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	84.25 e Levels (with Leg Peak Hou 68 64 72 74	out Topo and Ir Leq Day 8.8 1.0 2.3 1.3	barrier at <u>Le</u> 66.9 62.5 70.9 72.8)	ttenuatio q Evenin 6 5 6 6 6 70 dBA	n) g Leq 5.1 6.1 1.9 7.1 65	Night 59.0 54.6 63.1 65.0 dBA	Ldn 67. 63. 71. 73. 60 dBA	Ci 7 1 5 4 55	NEL 68 63 71 73 dBA
Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks:	84.25 e Levels (with Leg Peak Hou 68 64 72 74	out Topo and ir Leq Day 8.8 1.0 2.3 5.3 5.3 5.5 5.5 5.5 5.5 5.5 5	barrier at <u>Le</u> 66.9 62.5 70.9 72.8)	ttenuatio q Evening 6 5 6 6 6 70 dBA	n) 2 Leq 5.1 5.1 1.9 7.1	Night 59.0 54.6 63.1 65.0	Ldn 67. 63. 71. 73.	Ci 7 1 5 4 55	NEL 68 63 71 73

FHWA-RD-	77-108 HIGHWAY	/ NOISE	E PREDIC		IODEL (9	/12/20	021)		
Scenario: 2029 Road Name: Panama Ln. Road Segment: e/o S. H St.					Name: N lumber: 1		ic Gateway		
SITE SPECIFIC INF	PUT DATA						L INPUTS	3	
Highway Data			Site Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily Traffic (Adt): 2	2,740 vehicles					Autos:	15		
Peak Hour Percentage:	10.00%		Me	dium Tr	ucks (2 A	xles):	15		
Peak Hour Volume: 2	2,274 vehicles		He	avy Tru	cks (3+ A	xles):	15		
Vehicle Speed:	45 mph	ŀ	Vehicle I	Mix					
Near/Far Lane Distance:	52 feet	ŀ		icleType		Dav	Evening	Night	Daily
Site Data						77.5%	•	9.6%	
Barrier Height:	0.0 feet		M	edium T	rucks:	84.8%	4.9%	10.3%	2.52%
Barrier Type (0-Wall, 1-Berm):	0.0		1	leavy T	rucks:	86.5%	2.7%	10.8%	5.67%
Centerline Dist. to Barrier:	55.0 feet	-	Noine Or			(i f.	- 41		
Centerline Dist. to Observer:	55.0 feet	ŀ	Noise So	Auto		00	et)		
Barrier Distance to Observer:	0.0 feet		Madin	Auto m Truck					
Observer Height (Above Pad):	5.0 feet			y Truck			Grade Adj	uctmont	
Pad Elevation:	0.0 feet		neav	y muck	s. o.u	104	Grade Auj	usuneni	. 0.0
Road Elevation:	0.0 feet		Lane Eq	uivalent	t Distanc	e (in i	feet)		
Road Grade:	0.0%			Auto	s: 48.7	24			
Left View:	-90.0 degrees		Mediu	m Truck					
Right View:	90.0 degrees		Heav	ry Truck	s: 48.5	59			
FHWA Noise Model Calculations		1							
VehicleType REMEL	Traffic Flow Di	istance	Finite	Road	Fresn		Barrier Atte	en Ber	m Atten
Autos: 68.46	1.36	0.0		-1.20		4.67	0.0		0.000
Medium Trucks: 79.45	-14.26	0.0		-1.20		4.87	0.0		0.000
Heavy Trucks: 84.25	-10.73	0.0)9	-1.20		-5.38	0.0	00	0.000
Unmitigated Noise Levels (without									
VehicleType Leq Peak Hour		Leq E	vening		Night		Ldn		VEL
Autos: 68.7			65.0		59.0		67.6		68.2
Medium Trucks: 64.1			56.2		54.7		63.1		63.4
Heavy Trucks: 72.4			61.9		63.2		71.6		71.7
Vehicle Noise: 74.4	72.8		67.1		65.0		73.4		73.7
Centerline Distance to Noise Con	ntour (in feet)	=0				_			
	l da		dBA	65	dBA	6	0 dBA	55	dBA
	Ldn: CNEL:		93		201 209		433		933
	CIVEL:		97		209		451		972

	FHWA-RD	-77-108 HIGH\	VAY N	OISE P	REDICTION	NODEL	(9/12/2	021)		
Scenario	2029+P				Projec	t Name	Majest	ic Gateway	,	
	: Panama Ln.				Job	Vumber	13923			
Road Segmen	t: e/o S. H St.									
	PECIFIC IN	PUT DATA						L INPUT	S	
Highway Data				Si	te Conditions	(Hard	= 10, So	oft = 15)		
Average Daily T	raffic (Adt):	23,398 vehicle	5				Autos:	15		
Peak Hour F	Percentage:	10.00%			Medium T	rucks (2	Axles):	15		
Peak Ho	ur Volume:	2,340 vehicles			Heavy Tri	ıcks (3+	Axles):	15		
Veh	icle Speed:	45 mph		Ve	hicle Mix					
Near/Far Lan	e Distance:	52 feet			VehicleTyp	e	Dav	Evening	Night	Daily
Site Data						Autos:	77.5%	•	9.6%	
Par	ier Height:	0.0 feet			Medium	rucks:	84.8%	4.9%	10.3%	2.45%
Barrier Type (0-Wa		0.0 1001			Heavy	Trucks:			10.8%	
Centerline Dist	. ,	55.0 feet								
Centerline Dist. to		55.0 feet		No	oise Source E			eet)		
Barrier Distance to		0.0 feet			Aut		0.000			
Observer Height (A		5.0 feet			Medium Truc		2.297			
e (d Elevation:	0.0 feet			Heavy Truc	(S.' 8	3.004	Grade Ad	ustment.	0.0
Road	d Elevation:	0.0 feet		La	ne Equivaler	t Dista	nce (in i	feet)		
R	oad Grade:	0.0%			Aut	os: 48	3.724			
	Left View:	-90.0 degree	5		Medium Truc	ks: 48	3.542			
	Right View:	90.0 degree	6		Heavy Truc	ks: 48	3.559			
FHWA Noise Model	Calculations									
VehicleType	REMEL	Traffic Flow	Dista		Finite Road	Free		Barrier Att		m Atten
Autos:	68.46	1.49		0.07	-1.20		-4.67		000	0.00
Medium Trucks:	79.45	-14.26		0.09	-1.20		-4.87		000	0.00
Heavy Trucks:	84.25	-10.73		0.09	-1.20		-5.38	0.0	000	0.00
Unmitigated Noise					,					
	eq Peak Hou			Leq Eve		Night		Ldn		VEL
Autos:	68.		6.9		65.2	59		67.		68.
Medium Trucks:	64.		2.6		56.2	54		63.1		63.
Heavy Trucks:	72.		1.0		61.9	63		71.0		71.
Vehicle Noise:	74.		2.8		67.2	65	.0	73.5)	73.
Centerline Distance	e to Noise Co	ntour (in feet)		70.15						(8.4
				70 dE		dBA		60 dBA		dBA
			.dn: EL:		94 98	20		435		938
		CA	EL.			21	1	454		977

Monday, November 8, 2021

FHWA-F	RD-77-108 HIGHW	AY NOIS	E PREDIC	TION MO	DEL (9/12	/2021)	
Scenario: 2042 Road Name: Panama I Road Segment: e/o S. H S					<i>lame:</i> Maje mber: 1392	estic Gateway 23	
SITE SPECIFIC I	NPUT DATA					DEL INPUTS	
Highway Data			Site Con	ditions (Hard = 10,	Soft = 15)	
Average Daily Traffic (Adt):	23,908 vehicles				Auto	s: 15	
Peak Hour Percentage:	10.00%		Me	dium Tru	cks (2 Axles	s): 15	
Peak Hour Volume:	2,391 vehicles		He	avy Truci	s (3+ Axles	s): 15	
Vehicle Speed:	45 mph		Vehicle I	Mix			
Near/Far Lane Distance:	52 feet			icleType	Day	Evening 1	Vight Daily
Site Data			-		utos: 77.5	•	9.6% 91.81%
Barrier Height:	0.0 feet		Me	edium Tru	icks: 84.8	3% 4.9%	10.3% 2.52%
Barrier Type (0-Wall, 1-Berm):	0.0		F	leavy Tru	icks: 86.5	5% 2.7%	10.8% 5.67%
Centerline Dist. to Barrier:	55.0 feet		Noine Co	uree Ele	vations (in	faat	
Centerline Dist. to Observer:	55.0 feet		NOISe 30	Autos		leel)	
Barrier Distance to Observer:	0.0 feet		A de elis	n Trucks	0.000		
Observer Height (Above Pad):	5.0 feet			v Trucks		Grade Adjus	stment: 0.0
Pad Elevation:	0.0 feet		neav	y mucks.	0.004	Grade Adja	Sanchi. 0.0
Road Elevation:	0.0 feet		Lane Equ	uivalent	Distance (i	n feet)	
Road Grade:	0.0%			Autos.			
Left View:	-90.0 degrees		Mediur	n Trucks	48.542		
Right View:	90.0 degrees		Heav	y Trucks	48.559		
FHWA Noise Model Calculatio	ns		1				
VehicleType REMEL	Traffic Flow	Distance	e Finite	Road	Fresnel	Barrier Atter	Berm Atten
Autos: 68.4			.07	-1.20	-4.6		
Medium Trucks: 79.4			.09	-1.20	-4.8		
Heavy Trucks: 84.2	5 -10.52	0.	.09	-1.20	-5.3	8 0.00	0 0.00
Unmitigated Noise Levels (wit	hout Topo and ba	arrier atte	enuation)				
VehicleType Leq Peak Ho	, .,		Evening	Leq N		Ldn	CNEL
		7.0	65.2		59.2	67.8	68.4
		2.8	56.4		54.9	63.3	63.
		1.2	62.2		63.4	71.8	71.
Vehicle Noise: 7	4.6 73	3.0	67.3		65.2	73.7	73.9
Centerline Distance to Noise (Contour (in feet)						
Centerline Distance to Noise (. ,		0 dBA	65 d		60 dBA	55 dBA
Centerline Distance to Noise (. ,	dn:	0 dBA 96 100	65 d	BA 208 216	60 dBA 448 466	55 dBA 965 1.005

	FHWA-R	D-77-108 HIGH	WAY N	OISE	PREDIC	TION M	ODEL (9/	12/202	21)		
Road Nam	io: 2042+P ne: Panama Ln nt: e/o S. H St.				Project Name: Majestic Gateway Job Number: 13923						
	SPECIFIC IN	IPUT DATA							INPUTS	3	
Highway Data				S	Site Con	ditions	(Hard = 1	0, Sof	ft = 15)		
Average Daily	Traffic (Adt):	24,566 vehicle	es				AL	itos:	15		
Peak Hour	Percentage:	10.00%			Me	dium Tri	ucks (2 Ax	les):	15		
Peak H	lour Volume:	2,457 vehicle	s		He	avy Tru	cks (3+ Ax	les):	15		
Ve	hicle Speed:	45 mph		1	Vehicle I	Mix					
Near/Far La	ne Distance:	52 feet		-		icleType	D	ay I	Evening	Night	Daily
Site Data					1011			7.5%	12.9%	9.6%	
Ba	rrier Height:	0.0 feet			M	edium T	ucks: 8	4.8%	4.9%	10.3%	2.45
Barrier Type (0-W		0.0			ŀ	Heavy T	ucks: 8	6.5%	2.7%	10.8%	5.529
Centerline Di	. ,	55.0 feet			Noise Sr	urce El	evations	(in for	af)		
Centerline Dist.	to Observer:	55.0 feet			10/30 00	Auto			54		
Barrier Distance	to Observer:	0.0 feet			Modiu	m Truck	0.00				
Observer Height	(Above Pad):	5.0 feet				vy Truck			Grade Adji	ustment	0.0
P	ad Elevation:	0.0 feet								aounom	0.0
Ro	ad Elevation:	0.0 feet		L	Lane Eq	uivalent	Distance	(in fe	eet)		
	Road Grade:	0.0%				Auto	s: 48.72	24			
	Left View:	-90.0 degree	es			m Truck		12			
	Right View:	90.0 degree	es		Heav	y Truck	s: 48.55	59			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresnel	E	Barrier Atte	en Ber	m Atten
Autos:	68.46	1.71		0.07	7	-1.20	-4	1.67	0.0	00	0.00
Medium Trucks:	79.45	-14.04		0.09	9	-1.20	-4	1.87	0.0	00	0.00
Heavy Trucks:	84.25	-10.52		0.09	9	-1.20	-5	5.38	0.0	00	0.00
		out Tono and	barrier	atteni	uation)						
Unmitigated Noise	e Levels (with	out rope and			and the second		Nicolat		Ldn	CI	VEL
Unmitigated Noise VehicleType	e Levels (with Leq Peak Hou		′ L	.eq Ev	vening	Leq	Nigrit				
VehicleType Autos:	Leq Peak Hou 69	Ir Leq Day	67.1	eq Ev	65.4	Leq	59.3		67.9		
VehicleType Autos: Medium Trucks:	Leq Peak Hou 69 64	Ir Leq Day 1.0 3	67.1 62.8	.eq Ev	65.4 56.4		59.3 54.9		63.3		63.
VehicleType Autos: Medium Trucks: Heavy Trucks:	Leq Peak Hou 69 64 72	17 Leq Day 1.0 1.3	67.1 62.8 71.2	.eq Ev	65.4 56.4 62.2		59.3 54.9 63.4		63.3 71.8		63. 71.
VehicleType Autos: Medium Trucks:	Leq Peak Hou 69 64	17 Leq Day 1.0 1.3	67.1 62.8	eq Ev	65.4 56.4		59.3 54.9		63.3		63. 71.
Autos: Medium Trucks: Heavy Trucks:	Leq Peak Hou 69 64 72 74	<i>Ir Leq Day</i> 0.0 0.3 0.6 0.6	67.1 62.8 71.2 73.1		65.4 56.4 62.2 67.4		59.3 54.9 63.4 65.3		63.3 71.8 73.7	i	63. 71. 74.
VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	Leq Peak Hou 69 64 72 74	Ir Leq Day .0 .3 .6 .6 .6 .6 .6	67.1 62.8 71.2 73.1	eq Ev 70 d	65.4 56.4 62.2 67.4		59.3 54.9 63.4 65.3		63.3 71.8 73.7 0 dBA	i	63. 71. 74. dBA
VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	Leq Peak Hou 69 64 72 74	Ir Leq Day .0 .3 .6 .6 .6 .6	67.1 62.8 71.2 73.1		65.4 56.4 62.2 67.4		59.3 54.9 63.4 65.3		63.3 71.8 73.7	i	68. 63. 71. 74. <i>dBA</i> 970

	FHWA-RD)-77-108 HIGH	WAY NC	ISE PREDI		IODEL (9)/12/2	021)		
Scenario Road Name Road Segmen	e: Berkshire R					Name: N lumber: 1		ic Gateway	,	
SITE S	SPECIFIC IN	PUT DATA						L INPUTS	3	
Highway Data				Site Cor	nditions	(Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	7,012 vehicle	s				Autos:	15		
Peak Hour I	Percentage:	10.00%		Me	edium Tr	ucks (2 A	xles):	15		
Peak He	our Volume:	701 vehicles	6	He	eavy Tru	cks (3+ A	xles):	15		
Vel	nicle Speed:	45 mph		Vehicle	Mix					
Near/Far Lar	ne Distance:	36 feet			nicleType		Dav	Evenina	Niaht	Daily
Site Data							77.5%		9.6%	
Bar	rier Heiaht:	0.0 feet		N	ledium T	rucks:	84.8%	4.9%	10.3%	2.52%
Barrier Type (0-Wa		0.0			Heavy T	rucks:	86.5%	2.7%	10.8%	5.67%
Centerline Dis		37.0 feet		Noise O				41		
Centerline Dist. t	o Observer:	37.0 feet		Noise S	Auto	evations	000	eet)		
Barrier Distance t	o Observer:	0.0 feet		14-14	Auto Im Truck					
Observer Height (/	Above Pad):	5.0 feet			ıт тrucк vy Truck		297 004	Grade Adj	uctmont	
Pa	d Elevation:	0.0 feet		пеа	vy muck	s. o.u	104	Graue Auj	usuneni	0.0
Roa	d Elevation:	0.0 feet		Lane Eq	uivalent	t Distanc	e (in i	feet)		
F	Road Grade:	0.0%			Auto	s: 32.7	711			
	Left View:	-90.0 degree	es	Mediu	ım Truck	s: 32.4	139			
	Right View:	90.0 degree	es	Hea	vy Truck	s: 32.4	166			
FHWA Noise Mode	I Calculation:	5								
VehicleType	REMEL	Traffic Flow	Distan	ce Finite	Road	Fresn	-	Barrier Atte	en Ber	m Atten
Autos:	68.46	-3.75		2.66	-1.20		-4.56	0.0		0.000
Medium Trucks:	79.45	-19.37		2.72	-1.20		-4.87	0.0		0.000
Heavy Trucks:	84.25	-15.84		2.71	-1.20		-5.61	0.0	00	0.000
Unmitigated Noise	Levels (with	out Topo and	barrier a	ttenuation)						
	Leq Peak Hou			q Evening		Night		Ldn		VEL
Autos:	66		64.3	62.5		56.5		65.1		65.7
Medium Trucks:	61		60.1	53.7		52.2		60.6		60.9
Heavy Trucks:	69		68.5	59.5		60.7		69.1		69.2
Vehicle Noise:	71	.9	70.3	64.6	6	62.5		70.9)	71.2
Centerline Distanc	e to Noise Co	ontour (in feet)								
				70 dBA	65	dBA	6	60 dBA	55	dBA
			🖵							
			Ldn: VEL:	43 45		92 96		199 207		428 446

FHW	A-RD-	77-108 HIGH	WAY	' NOISE	PREDIC		IODEL	(9/12/2	021)		
Scenario: E+P									tic Gatewa	<i>y</i>	
Road Name: Berksh						Job I	lumber	13923			
Road Segment: w/o S.											
SITE SPECIFIC	C INP	UT DATA								S	
Highway Data				2	Site Con	aitions	(Hard		,		
Average Daily Traffic (Ad	·	7,231 vehicle	es					Autos.			
Peak Hour Percentag		0.00%					rucks (2				
Peak Hour Volum		723 vehicles	5		He	avy Tru	icks (3+	Axles).	15		
Vehicle Spee		45 mph		١	/ehicle I	Mix					
Near/Far Lane Distand	e:	36 feet			Vehi	icleTyp	e	Day	Evening	Night	Daily
Site Data							Autos:	77.5%	6 12.9%	9.6%	92.069
Barrier Heigl	ht:	0.0 feet			Me	edium 1	rucks:	84.8%	6 4.9%	10.3%	2.449
Barrier Type (0-Wall, 1-Bern		0.0			ŀ	leavy 1	rucks:	86.5%	6 2.7%	10.8%	5.509
Centerline Dist. to Barri	·	37.0 feet						(6	41		
Centerline Dist. to Observe	er:	37.0 feet		7	loise So				eet)		
Barrier Distance to Observe	er:	0.0 feet				Auto		0.000			
Observer Height (Above Pa	d):	5.0 feet				m Truck		2.297	Grade Ad	iuotmont	
Pad Elevation	on:	0.0 feet			Heav	ry Truck	(S: 8	8.004	Grade Ad	Justinent	0.0
Road Elevation	on:	0.0 feet		L	ane Equ	uivalen	t Dista	nce (in	feet)		
Road Grad	le:	0.0%				Auto	os: 32	2.711			
Left Vie	W.	-90.0 degree	s		Mediur	m Truck	(s: 32	2.439			
Right Vie	W.	90.0 degree	es		Heav	y Truck	(s: 3	2.466			
FHWA Noise Model Calcula		1								Т	
VehicleType REMEL		Traffic Flow	Di	stance	Finite		Fres		Barrier Att		m Atten
	8.46	-3.60		2.66	-	-1.20		-4.56		000	0.00
	9.45	-19.37		2.72	-	-1.20		-4.87		000	0.00
	4.25	-15.84		2.71		-1.20		-5.61	0.	000	0.00
Unmitigated Noise Levels (<u> </u>						
VehicleType Leq Peak		Leq Day		Leq Ev		Leq	Night		Ldn		VEL
Autos:	66.3		64.4		62.7		56		65.		65
Medium Trucks:	61.6		60.1		53.7		52		60.		60
Heavy Trucks: Vehicle Noise:	69.9 71.9		68.5 70.4		59.5 64.7		60 62		69. 71.		69. 71.
					64.7		62	.0	71.	J	71
Centerline Distance to Nois	e Con	tour (in feet)	1	70 d	ID A	£5	dBA		60 dBA	FF	dBA
			Ldn:	700	ња 43	00	-	3	<i>во ава</i> 200		ава 43
			VEL:		43 45			3 7	200		43
		CI	VEL.		45		y	1	208	•	449

Monday, November 8, 2021

FHWA-R	D-77-108 HIGHW	AY NOISI	E PREDICI	FION MC	DEL (9/12	/2021)		
Scenario: 2024 Road Name: Berkshire Road Segment: w/o S. H S					<i>lame:</i> Maje mber: 1392	estic Gateway 23		
SITE SPECIFIC I	NPUT DATA					EL INPUTS	3	
Highway Data			Site Cond	litions (l	Hard = 10,	Soft = 15)		
Average Daily Traffic (Adt):	7,346 vehicles				Auto	s: 15		
Peak Hour Percentage:	10.00%		Mea	lium Truc	cks (2 Axles	s): 15		
Peak Hour Volume:	735 vehicles		Hea	ivy Truck	ks (3+ Axles	s): 15		
Vehicle Speed:	45 mph		Vehicle M	liv				
Near/Far Lane Distance:	36 feet			cleType	Dav	Evening	Night	Daily
Site Data					utos: 77.5		•	91.81
Barrier Height:	0.0 feet		Me	dium Tru	icks: 84.8	3% 4.9%	10.3%	2.52
Barrier Type (0-Wall, 1-Berm):	0.0		н	leavy Tru	icks: 86.5	5% 2.7%	10.8%	5.67
Centerline Dist. to Barrier:	37.0 feet		Noise So	urce Fle	vations (in	feet)		
Centerline Dist. to Observer:	37.0 feet			Autos:		1000		
Barrier Distance to Observer:	0.0 feet		Medium	1 Trucks				
Observer Height (Above Pad):	5.0 feet			/ Trucks:		Grade Adj	ustment [.]	0.0
Pad Elevation:	0.0 feet							
Road Elevation:	0.0 feet		Lane Equ		Distance (i	n feet)		
Road Grade:	0.0%			Autos:				
Left View:	-90.0 degrees			n Trucks.				
Right View:	90.0 degrees		Heavy	/ Trucks:	32.466			
FHWA Noise Model Calculation								
VehicleType REMEL		Distance	Finite F		Fresnel	Barrier Atte		m Atter
Autos: 68.46		2.6		-1.20	-4.5			0.00
Medium Trucks: 79.45		2.1		-1.20	-4.8			0.00
Heavy Trucks: 84.25	-15.64	2.1	71	-1.20	-5.6	1 0.0	00	0.0
Unmitigated Noise Levels (with			,					
VehicleType Leq Peak Ho Autos: 6	ur Leq Day 6.4 64		Evening 62.7	Leq N	11gnt 56.7	Ldn 65.3		VEL 65
	0.4 04. 1.8 60.		62.7 53.9		52.4	60.8		61
	D.1 68.		53.9 59.7		52.4 60.9	69.3		69
	2.1 70.		64.8		62.7	71.2		71
		.0	04.0		02.7	71.2		/ 1
Centerline Distance to Noise C	ontour (in feet)	70	dBA	65 d	PA .	60 dBA	55	dBA
	Ld		ива 44	050	95	205	55	ивя 44
			44		55	200		44
	CNE	7.	46		99	213		46

FHWA-RD-77-108 HIGHV	VAY NOIS	SE PREDIC	TION MOI	DEL (9/12/2	2021)		
Scenario: 2024+P Road Name: Berkshire Rd. Road Segment: w/o S. H St.				ame: Majes nber: 13923	tic Gateway	/	
SITE SPECIFIC INPUT DATA		011 0			EL INPUT	S	
Highway Data		Site Con	ditions (H	ard = 10, S	,		
Average Daily Traffic (Adt): 7,565 vehicles	6			Autos			
Peak Hour Percentage: 10.00%				(s (2 Axles)			
Peak Hour Volume: 757 vehicles		He	avy Trucks	(3+ Axles)	: 15		
Vehicle Speed: 45 mph		Vehicle	Mix				
Near/Far Lane Distance: 36 feet		Veh	icleType	Day	Evening	Night	Daily
Site Data			Aut	os: 77.5	6 12.9%	9.6%	92.05
Barrier Height: 0.0 feet		М	edium Truc	ks: 84.89	6 4.9%	10.3%	2.45
Barrier Type (0-Wall, 1-Berm): 0.0		1	Heavy Truc	ks: 86.5	6 2.7%	10.8%	5.50
Centerline Dist. to Barrier: 37.0 feet		Noise So	ource Elev	ations (in 1	feet)		
Centerline Dist. to Observer: 37.0 feet			Autos:	0.000			
Barrier Distance to Observer: 0.0 feet		Mediu	m Trucks:	2.297			
Observer Height (Above Pad): 5.0 feet		Heav	/v Trucks:	8.004	Grade Ad	justment.	: 0.0
Pad Elevation: 0.0 feet							
Road Elevation: 0.0 feet		Lane Eq		istance (in	feet)		
Road Grade: 0.0%			Autos:	32.711			
Left View: -90.0 degrees			m Trucks:	32.439			
Right View: 90.0 degrees	6	Heav	/y Trucks:	32.466			
FHWA Noise Model Calculations					1	1	
VehicleType REMEL Traffic Flow	Distance		Road	Fresnel	Barrier Att		m Atter
Autos: 68.46 -3.41	-	.66	-1.20	-4.56		000	0.0
Medium Trucks: 79.45 -19.16	-	.72	-1.20	-4.87		000	0.0
Heavy Trucks: 84.25 -15.64			-1.20	-5.61	0.0	000	0.0
Unmitigated Noise Levels (without Topo and b VehicleType Leg Peak Hour Leg Day		enuation) Evening	Leg Nig	tht	Ldn	0	NEL
	4.6	62.8		56.8	65.4		66
	0.3	53.9		52.4	60.1		61
	8.7	59.7		60.9	69.3	-	69
	0.6	64.9		62.8	71.		71
Centerline Distance to Noise Contour (in feet)							
Centerline Distance to Noise Contour (in feet)	7	0 dBA	65 dB	A	60 dBA	55	dBA
	dn:	0 dBA 44	65 dB	A 96	60 dBA 206		dBA 44

	FHWA-RD	0-77-108 HIGH	IWAY NOI	SE PREDIC	TION MO	DEL (9/12	2/2021)		
Scenari Road Nam Road Segmer	e: Berkshire F					lame: Maj nber: 139	estic Gateway 23	/	
SITE	SPECIFIC IN	IPUT DATA					DEL INPUT	S	
Highway Data				Site Con	ditions (H	lard = 10,	Soft = 15)		
Average Daily	Traffic (Adt):	7,490 vehicle	es			Auto	os: 15		
Peak Hour	Percentage:	10.00%		Me	dium Truc	ks (2 Axle	s): 15		
Peak H	our Volume:	749 vehicle	s	He	avy Truck	s (3+ Axle	s): 15		
Vel	nicle Speed:	45 mph		Vehicle	Mix				
Near/Far Lar	ne Distance:	36 feet			icleType	Da	/ Evenina	Niaht	Daily
Site Data				VCII		tos: 77.		9.6%	
Bar	rier Heiaht:	0.0 feet		М	edium Tru	cks: 84.	8% 4.9%	10.3%	2.52%
Barrier Type (0-W		0.0		1	Heavy Tru	cks: 86.	5% 2.7%	10.8%	5.67%
Centerline Dis	. ,	37.0 feet		Maine O			64		
Centerline Dist. t	o Observer:	37.0 feet		Noise Sc	Autos:	0.000	i reet)		
Barrier Distance t	o Observer:	0.0 feet		Martin	Autos: m Trucks:	2.297			
Observer Height ()	Above Pad):	5.0 feet				2.297	Grade Ad	iuotmont	
Pa	d Elevation:	0.0 feet		Heat	vy Trucks:	8.004	Grade Auj	usuneni.	. 0.0
Roa	d Elevation:	0.0 feet		Lane Eq	uivalent 🛙)istance (in feet)		
F	Road Grade:	0.0%			Autos:	32.711			
	Left View:	-90.0 degree	es	Mediu	m Trucks:	32.439			
	Right View:	90.0 degree	es	Heav	/y Trucks:	32.466			
FHWA Noise Mode	I Calculation	s							
VehicleType	REMEL	Traffic Flow	Distanc	e Finite	Road	Fresnel	Barrier Att	en Ber	m Atten
Autos									
Autos.	68.46	-3.46		2.66	-1.20	-4.5	56 0.0	000	0.000
Medium Trucks:	68.46 79.45	-3.46 -19.08		2.66 2.72	-1.20 -1.20	-4.8 -4.8		000	
							87 0.0		0.000
Medium Trucks:	79.45 84.25	-19.08 -15.56		2.72 2.71	-1.20	-4.8	87 0.0	000	0.000
Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType	79.45 84.25 Levels (with Leq Peak Hou	-19.08 -15.56 out Topo and Ir Leq Day	barrier att	2.72 2.71 Cenuation)	-1.20 -1.20 Leq N	-4.8 -5.0	27 0.0 27 0.0 21 0.0 Ldn	000 000 <i>CI</i>	0.000 0.000 VEL
Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos:	79.45 84.25 Levels (with Leq Peak Hou 66	-19.08 -15.56 out Topo and r Leq Day .5	barrier att / Lec 64.6	2.72 2.71 tenuation) Evening 62.8	-1.20 -1.20 Leq N	-4.8 -5.0 ight 56.7	87 0.0 61 0.0 Ldn 65.4	000 000 <i>CI</i>	0.000 0.000 VEL 66.0
Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks:	79.45 84.25 Levels (with Leq Peak Hou 66 61	-19.08 -15.56 out Topo and ir Leq Day .5 .9	barrier att / Lec 64.6 60.4	2.72 2.71 (enuation) (Evening 62.8 54.0	-1.20 -1.20 Leq N	-4.8 -5.0 ight 56.7 52.5	27 0.0 51 0.0 <u>Ldn</u> 65.4 60.9	000 000 <i>CI</i> 4	0.000 0.000 <u>VEL</u> 66.0 61.2
Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks:	79.45 84.25 Levels (with Leq Peak Hou 66 61 70	-19.08 -15.56 out Topo and rr Leq Day .5 .9 .2	barrier att / Lec 64.6 60.4 68.8	2.72 2.71 Evening 62.8 54.0 59.7	-1.20 -1.20 Leg N	-4.8 -5.0 ight 56.7 52.5 61.0	27 0.0 27 0.0 21 0.0 <u>Ldn</u> 65.4 60.9 69.4	000 000 <i>C1</i> 4 9 4	0.000 0.000 <u>VEL</u> 66.0 61.2 69.5
Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks:	79.45 84.25 Levels (with Leq Peak Hou 66 61	-19.08 -15.56 out Topo and rr Leq Day .5 .9 .2	barrier att / Lec 64.6 60.4	2.72 2.71 (enuation) (Evening 62.8 54.0	-1.20 -1.20 Leg N	-4.8 -5.0 ight 56.7 52.5	27 0.0 51 0.0 <u>Ldn</u> 65.4 60.9	000 000 <i>C1</i> 4 9 4	0.000 0.000 <u>VEL</u> 66.0 61.2 69.5
Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks:	79.45 84.25 Levels (with Leq Peak Hou 66 61 70 72	-19.08 -15.56 out Topo and r Leq Day .5 .9 .2 .2	barrier ati / Lec 64.6 60.4 68.8 70.6	2.72 2.71 (enuation) (Evening 62.8 54.0 59.7 64.9	-1.20 -1.20 Leg N	-4.8 -5.6 ight 56.7 52.5 61.0 62.8	27 0.0 51 0.0 <u>Ldn</u> 65.4 60.9 69.4 71.2	000 000 1 1 2	0.000 0.000 <u>VEL</u> 66.0 61.2 69.5 71.5
Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	79.45 84.25 Levels (with Leq Peak Hou 66 61 70 72	-19.08 -15.56 out Topo and rr Leq Day .5 .9 .2 .2 .2 intour (in feet	barrier atti / Lec 64.6 60.4 68.8 70.6	2.72 2.71 (Evening 62.8 54.0 59.7 64.9	-1.20 -1.20 Leg N	-4.8 -5.0 ight 56.7 52.5 61.0 62.8 BA	27 0.0 27 0.0 21 0.0	000 000 4 4 2 55	66.0 61.2 69.5 71.5 dBA
Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	79.45 84.25 Levels (with Leq Peak Hou 66 61 70 72	-19.08 -15.56 out Topo and rr Leq Day .5 .9 .2 .2 .2 ontour (in feet	barrier ati / Lec 64.6 60.4 68.8 70.6	2.72 2.71 (enuation) (Evening 62.8 54.0 59.7 64.9	-1.20 -1.20 Leg N	-4.8 -5.6 ight 56.7 52.5 61.0 62.8	27 0.0 51 0.0 <u>Ldn</u> 65.4 60.9 69.4 71.2	000 000 4 4 2 55	0.000 0.000 <u>VEL</u> 66.0 61.2 69.5 71.5

	FHWA-RD-7	7-108 HIGHWAY	Y NOISE	PREDIC		IODEL (9/12/20	021)		
Scenario: 2	2029+P				Project	Name: I	Majest	ic Gateway	,	
Road Name: E	Berkshire Rd.				Job N	lumber:	13923			
Road Segment: v	v/o S. H St.									
	ECIFIC INPU	JT DATA						L INPUT	5	
Highway Data				Site Cond	ditions	(Hard =	10, So	oft = 15)		
Average Daily Trat	fic (Adt): 7	,709 vehicles					Autos:	15		
Peak Hour Per	centage: 10	.00%		Med	dium Tr	ucks (2 A	(xles)	15		
Peak Hour	Volume:	771 vehicles		Hea	avy Tru	cks (3+ A	(xles)	15		
Vehicle	e Speed:	45 mph	ŀ	Vehicle N	lix					
Near/Far Lane D	Distance:	36 feet	ŀ		cleTvpe		Dav	Evening	Night	Dailv
Site Data							77.5%	•	9.6%	
	·Height:	0.0 feet		Ме	dium T		84.8%		10.3%	
Barrier Type (0-Wall,		0.0 Teet					86.5%		10.8%	
Centerline Dist. to	,	37.0 feet								
Centerline Dist. to C		37.0 feet		Noise So	urce El			eet)		
Barrier Distance to C		0.0 feet			Auto		000			
Observer Height (Abo		5.0 feet		Mediun			297			
	levation:	0.0 feet		Heav	y Truck	s: 8.	004	Grade Adj	ustment:	0.0
	levation:	0.0 feet	ŀ	Lane Equ	iivalen	t Distan	e (in t	feet)		
		0.0 1881	ŀ	Lano Lqo	Auto			000		
		90.0 degrees		Mediun						
-		90.0 degrees			y Truck					
FHWA Noise Model C	alculations									
VehicleType F	REMEL Tr	affic Flow D	istance	Finite	Road	Fresn	el	Barrier Atte	en Ber	m Atten
Autos:	68.46	-3.33	2.6	6	-1.20		-4.56	0.0	000	0.00
Medium Trucks:	79.45	-19.08	2.7	2	-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	84.25	-15.56	2.7	'1	-1.20		-5.61	0.0	000	0.00
Unmitigated Noise Le				,						
	Peak Hour	Leq Day		vening	Leq	Night		Ldn		VEL
Autos:	66.6	64.7		62.9		56.9		65.5		66
Medium Trucks:	61.9	60.4		54.0		52.5		60.9		61
Heavy Trucks:	70.2	68.8		59.7		61.0		69.4		69
Vehicle Noise:	72.2	70.6		65.0		62.8	1	71.3	3	71.
Centerline Distance to	o Noise Conte	our (in feet)					-			(8.4
				dBA	65	dBA	6	i0 dBA		dBA
		Ldn:		45		97		209		45
		CNEL		47		101		217		469

Monday, November 8, 2021

FHWA	-RD-77-108 HIG	HWAY NO	DISE PRED		DDEL (9/12	/2021)	
Scenario: 2042 Road Name: Berkshi Road Segment: w/o S. H					Vame: Maje mber: 1392	estic Gateway 23	
SITE SPECIFIC	INPUT DATA	1				DEL INPUTS	1
Highway Data			Site Co	nditions (Hard = 10,	Soft = 15)	
Average Daily Traffic (Adt	: 7,979 vehi	cles			Auto	os: 15	
Peak Hour Percentage	e: 10.00%		N	ledium Tru	cks (2 Axle	s): 15	
Peak Hour Volume	e: 798 vehic	les	F	eavy Truc	ks (3+ Axle	s): 15	
Vehicle Speed	l: 45 mph		Vehicle	Mix			
Near/Far Lane Distance	2 36 feet			hicleType	Day	Evening	Night Daily
Site Data					utos: 77.		9.6% 91.81
Barrier Heigh	t: 0.0 feet		1	Aedium Tru	icks: 84.8	3% 4.9%	10.3% 2.52
Barrier Type (0-Wall, 1-Berm				Heavy Tru	icks: 86.	5% 2.7%	10.8% 5.679
Centerline Dist. to Barrie			Malaa			64	
Centerline Dist. to Observe	r: 37.0 feet		Noise 3	Autos	vations (in	reet)	
Barrier Distance to Observe	r: 0.0 feet			Autos um Trucks	0.000		
Observer Height (Above Pad): 5.0 feet					Grade Adiu	ustment: 0.0
Pad Elevation	n: 0.0 feet		не	avy Trucks	8.004	Grade Aujt	isument. 0.0
Road Elevation	0.0 feet		Lane E	quivalent	Distance (i	n feet)	
Road Grade	e: 0.0%			Autos	32.711		
Left View	/: -90.0 degr	ees	Medi	um Trucks	32.439		
Right View	/: 90.0 degr	ees	Hei	avy Trucks	32.466		
FHWA Noise Model Calculat	ons						
VehicleType REMEL	Traffic Flow			e Road	Fresnel	Barrier Atte	
Autos: 68			2.66	-1.20	-4.5		
	45 -18.8		2.72	-1.20	-4.8		
Heavy Trucks: 84	25 -15.2	8	2.71	-1.20	-5.6	61 0.00	00 0.00
Unmitigated Noise Levels (w	ithout Topo an	d barrier a	attenuation				
VehicleType Leq Peak			eq Evening	Leg N	•	Ldn	CNEL
Autos:	66.7	64.8	63.		57.0	65.6	66
Medium Trucks:	62.2	60.7	54.	-	52.7	61.2	• ·
Heavy Trucks:	70.5	69.1	60.	*	61.3	69.6	69
Vehicle Noise:	72.4	70.9	65.	2	63.1	71.5	71
Centerline Distance to Noise	Contour (in fe	et)		T			
			70 dBA	65 d	BA	60 dBA	55 dBA
		Ldn: CNEL:	4		101 105	217 226	46 48

Site Data Autos: 77.5% 12.9% 9.6% 92.0 Barrier Height: 0.0 feet Medium Trucks: 84.8% 4.9% 10.3% 2.4% Barrier Height: 0.0 Centerine Dist. to Barrier: 37.0 feet Medium Trucks: 86.5% 2.7% 10.8% 5.5% Centerine Dist. to Barrier: 37.0 feet Noise Source Elevations (in feet) Autos: 0.000 Deserver Height (Above Pad): 5.0 feet Madeium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0 Road Elevation: 0.0 feet Lane Equivalent Distance (in feet) Autos: 32.711 Road Grade: 0.000 Medium Trucks: 32.486 4utos: 32.49 FHWA Noise Model Calculations VehicleType Traffic Flow Distance Finite Road Fresnel Barrier Atten Berrier Atten Autos: 68.46 -3.06 2.66 -1.20 -4.67 0.000 0.0 Medium Trucks: 79.45 -15.28 2.71 -1.20		FHWA-RD	0-77-108 HIGHWA	AY NOISE	PREDIC	TION MO	DEL (9/12	/2021)		
Road Segment: wio S. H St. Site Conditions (Hard = 10, Soft = 15) Average Daily Traffic (Adi): 8, 198 vehicles Average Daily Traffic (Adi): 8, 198 vehicles Autos: 15 Vehicle Speed: Autos: 15 Vehicle Speed: 45 mph Vehicle Type Day Evening Night Night Day Even									4	
Highway Data Site Conditions (Hard = 10, Soft = 15) Average Daily Traffic (Adt): 8,198 vehicles Autos: 15 Peak Hour Volume: 820 vehicles Autos: 15 Vehicle Speed: 45 mph Medium Trucks (2 Avtes): 15 Vehicle Speed: 36 feet Vehicle Mix Vehicle Mix Vehicle Speed: 36 feet Vehicle Mix Site Data Autos: 77.5% 12.9% 9.6% 92.0 Medium Trucks: 84.8% 4.9% 10.3% 2.4% Barrier Height: 0.0 feet Medium Trucks: 84.8% 4.9% 10.3% 2.4% Barrier Dist. to Dserver: 37.0 feet Autos: 0.000 Medium Trucks: 8.297 10.8% 5.5 Observer Height (Above Pad): 5.0 feet Road Grade: 0.0% Laft View: 90.0 degrees Autos: 32.439 Heavy Trucks: 32.439 Kight View: 90.0 degrees Right View: 9.00 degrees Finite Road Fresnel						Job Nui	nber: 1392	23		
Average Daily Traffic (Adt): 8,198 vehicles Autos: 15 Peak Hour Vercentage: 10.00% Medium Trucks (2 Axles): 15 Peak Hour Volume: 820 vehicles Heavy Trucks (2 Axles): 15 Vehicle Speed: 45 mph Heavy Trucks (3 + Axles): 15 Site Data Autos: 77.5% 12.9% 9.6% 92.0 Barrier Height: 0.0 feet Medium Trucks: 84.8% 4.9% 10.3% 2.4 Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.0 feet Medium Trucks: 86.5% 2.7% 10.8% 5.53 Centerline Dist. to Desrever: 0.0 feet Autos: 0.00 Medium Trucks: 8.004 Grade Adjustment: 0.0 Pad Elevation: 0.0 feet Autos: 32.71 Heavy Trucks: 32.43 Road Grade: 0.0% Autos: 32.71 Heavy Trucks: 32.43 Heavy Trucks: 79.45 -18.80 2.72 -1.20 -4.66 0.000 0.0 Medium	SITE	SPECIFIC IN	IPUT DATA						S	
Peak Hour Percentage: 10.00% Medium Trucks (2 Axles): 15 Peak Hour Volume: 820 vehicles Heavy Trucks (3 + Axles): 15 Vehicle Speed: 45 mph Vehicle Mix Vehicle Mix Vehicle Mix Site Data Autos: 77.5% 12.9% 9.6% 92.0 Barrier Height: 0.0 feet Autos: 77.5% 12.9% 9.6% 92.0 Barrier Height: 0.0 feet Medium Trucks: 84.8% 4.9% 10.3% 2.4% Barrier Height: 0.0 feet Medium Trucks: 86.5% 2.7% 10.8% 5.5 Centerline Dist. to Barrier: 37.0 feet Autos: 0.000 Medium Trucks: 8.04 Grade Adjustment: 0.0 Deserver Height (Above Pad): 5.0 feet Autos: 0.271 Heavy Trucks: 8.004 Grade Adjustment: 0.0 Road Grade: 0.0% Autos: 32.711 Medium Trucks: 32.496 Heavy Trucks: 80.46 -3.06 2.66 -1.20 -4.67 0.0	Highway Data				Site Cond	ditions (H	lard = 10,	Soft = 15)		
Peak Hour Volume: 820 vehicles Vehicle Speed: Heavy Trucks (3+ Axles): 15 Vehicle Speed: 45 mph Vehicle Mix Vehicle Mix Vehicle Mix Site Data Autos: 77.5% 12.9% 9.6% 92.0% Barrier Height: 0.0 feet Medium Trucks: 84.8% 4.9% 10.3% 2.4% Barrier Type (0-Wall, 1-Berm): 0.0 0.0 feet Medium Trucks: 86.5% 2.7% 10.8% 5.5 Centerline Dist. to Barrier: 37.0 feet Autos: 0.000 Medium Trucks: 8.004 Grade Adjustment: 0.0 Barrier Distance to Observer: 0.0 feet Autos: 0.000 Medium Trucks: 2.297 Observer Height View: 90.0 degrees Medium Trucks: 32.11 Image: Structure time time time time time time time tim	Average Daily	Traffic (Adt):	8,198 vehicles				Auto	s: 15		
Vehicle Speed: Near/Far Lane Distance: 45 mph 36 feet Vehicle Mix Vehicle Mix Vehicle Type Day Evening Night Dail Site Data Autos: 77.5% 12.9% 9.6% 92.0% Barrier Height: 0.0 feet Medium Trucks: 84.8% 4.9% 10.3% 2.4 Barrier Type (0-Wall, 1-Berm): 0.0 Medium Trucks: 84.8% 4.9% 10.3% 5.5 Centerline Dist. to Desrever: 3.0 feet Molise Source Elevations (in feet) 0.0% Medium Trucks: 8.004 Grade Adjustment: 0.0 Barrier Distance to Observer: 0.0 feet Medium Trucks: 8.004 Grade Adjustment: 0.0 Road Elevation: 0.0 feet Autos: 32.711 Medium Trucks: 32.49 Read Grade: 0.0% Autos: 32.466 -1.20 -4.56 0.000 0.0 Heavy Trucks: 79.45 -18.80 2.72 -1.20 -4.87 0.000 0.0 Medium Trucks: 8.425 -5.28	Peak Hour	Percentage:	10.00%		Med	dium Truc	ks (2 Axles	s): 15		
Near/Far Lane Distance: 36 feet Vehicle WMX Day Evening Night Dail Site Data Autos: 77.5% 12.9% 9.6% 92.0% Barrier Height: 0.0 feet Autos: 77.5% 12.9% 9.6% 92.0% Barrier Height: 0.0 feet Medium Trucks: 84.8% 4.9% 10.3% 2.4% Barrier Type (O-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.0 feet Medium Trucks: 86.5% 2.7% 10.8% 5.5 Conserver Height (Above Pad): 5.0 feet Autos: 0.000 Medium Trucks: 2.297 Road Grade: 0.0% et Lane Equivalent Distance (in feet) Conserver (in fe	Peak H	lour Volume:	820 vehicles		Hea	avy Truck	s (3+ Axles	s): 15		
Near/Far Lane Distance: 36 feet VehicleType Day Evening Night Dail Site Data Autos: 77.5% 12.9% 9.6% 92.0% Barrier Type (0-Wall, 1-Berm): 0.0 feet Medium Trucks: 84.8% 4.9% 10.3% 2.4 Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.0 feet Medium Trucks: 86.5% 2.7% 10.8% 5.5% Centerline Dist. to Doserver: 0.0 feet Autos: 0.00 Medium Trucks: 2.297 10.8% 5.5% Pad Elevation: 0.0 feet Autos: 0.00 Medium Trucks: 2.297 10.8% 5.5% Road Elevation: 0.0 feet Autos: 32.71 Heavy Trucks: 8.004 Grade Adjustment: 0.0 Road Grade: 0.0% Left View: 90.0 degrees Heavy Trucks: 32.439 Heavy Trucks: 32.439 VehicleType REMEL Traffic Flow Distance Finte Road Fresnel Barrier Atten Berrier Atten Ber	Ve	hicle Speed:	45 mph	-	Vehicle I	liv				
Site Data Autos: 77.5% 12.9% 9.6% 92.0 Barrier Height: 0.0 feet Medium Trucks: 84.8% 4.9% 10.3% 2.4% Barrier Height: 0.0 centerline Dist. to Barrier: 37.0 feet Medium Trucks: 86.5% 2.7% 10.3% 2.4% Centerline Dist. to Barrier: 37.0 feet Noise Source Elevations (in feet) Autos: 0.000 Observer Height (Above Pad): 5.0 feet Madeium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0 Road Elevation: 0.0 feet Lane Equivalent Distance (in feet) Autos: 32.711 Road Grade: 0.000 Medium Trucks: 32.486 4utos: 32.496 FHWA Noise Model Calculations Vehicle Type Traffic Flow Distance Finite Road Fresnel Barrier Atten Berrier Atten Autos: 68.46 -3.06 2.66 -1.20 -4.67 0.000 0.0 Medium Trucks: 79.45 -15.28 2.71 -1.20 <td>Near/Far La</td> <td>ne Distance:</td> <td>36 feet</td> <td>F</td> <td></td> <td></td> <td>Dav</td> <td>Evenina</td> <td>Niaht</td> <td>Daily</td>	Near/Far La	ne Distance:	36 feet	F			Dav	Evenina	Niaht	Daily
Barrier Type (IV-Wall, 1-Berri): 0.0 Heavy Trucks: 86.5% 2.7% 10.8% 5.53 Centerline Dist. to Diserver: 37.0 feet Autos: 0.00 Noise Source Elevations (in feet) Autos: 0.00 Diserver: 0.0 feet Autos: 0.00 Meany Trucks: 2.297 Observer: 0.0 feet Autos: 8.004 Grade Adjustment: 0.0 Road Elevation: 0.0 feet Autos: 8.004 Grade Adjustment: 0.0 Road Grade: 0.0% Autos: 32.711 Medium Trucks: 32.439 FHWA Noise Model Calculations Pole Service: 90.0 degrees Heavy Trucks: 32.439 FHWA Noise Levels (without Topo and barrier attemuation) Ernier Attem Berrier Attem Berrier Attem VehicleType Leq Devels (without Top and barrier attenuation) -4.56 0.000 0.0 Umitigated Noise Levels (without Topa and barrier attenuation) Leq Devels Leq Day Leq Evening Leq Night Ldn CrIL Autos: 66.2 60.7 54.3 <td>Site Data</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>•</td> <td></td> <td></td>	Site Data							•		
Barrier Type (0-Wall, 1-Bern): 0.0 Heavy Trucks: 86.5% 2.7% 10.8% 5.53 Centerline Dist. to Desriver: 37.0 feet Autos: 0.00 Moise Source Elevations (in feet) Autos: 0.00 Medium Trucks: 2.27% 10.8% 5.53 Deserver Height (Above Pad): 5.0 feet Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0 Road Grade: 0.0% Left View: -90.0 degrees Medium Trucks: 32.439 Heavy Trucks: 32.439 FHWA Noise Model Calculations Frisher Road Fresnel Barrier Atten Berner Atten Berner Atten Autos: 79.45 -18.80 2.72 -1.20 -4.56 0.000 0.0 Medium Trucks: 79.45 -15.28 2.71 -1.20 -5.61 0.000 0.0 Untiltigated Noise Levels (without Topo and barrier attenuation) Leg Day Leg Evening Leg Night Ldn CNEL VehicleType Leg Day Leg Evening Leg Night Ldn CN	Pa	rrior Hoight:	0.0 foot		Ме	dium Tru	cks: 84.8	3% 4.9%	10.3%	2.45%
Centerline Dist. to Barrier: 37.0 feet Noise Source Elevations (in feet) Centerline Dist. to Observer: 37.0 feet Autos: 0.000 Barrier Distance to Observer: 0.0 feet Medium Trucks: 2.297 Observer Height (Above Pad): 5.0 feet Heavy Trucks: 8.004 Grade Adjustment: 0.0 Pad Elevation: 0.0 feet Left View: -90.0 degrees Medium Trucks: 32.439 Heavy Trucks: 8.004 Grade Cacutations Medium Trucks: 32.436 FHWA Noise Model Cacutations Vehicle Type REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Bern Atte Vehicle Type REMEL Traffic Flow Distance 11.20 -4.56 0.000 0.0 Medium Trucks: 79.45 -18.80 2.72 -1.20 -4.56 0.000 0.0 Medium Trucks: 79.45 -15.28 2.71 -1.20 -5.61 0.000 0.0 Medium Trucks: 66.9 65.0 63.2 57.1					H	leavy Tru	cks: 86.5	5% 2.7%	10.8%	5.52%
Noise Source reveations (in reei) Noise Source reveations (in reei) Barrier Distance to Observer: 0.0 feet Autos: 0.000 Barrier Distance to Observer: 0.0 feet Autos: 0.000 Pad Elevation: 0.0 feet Heavy Trucks: 2.297 Road Elevation: 0.0 feet Lane Equivalent Distance (in feet) Road Calculations: 0.0 feet Lane Support Road Calculations: 90.0 degrees Heavy Trucks: 32.466 FHWA Noise Model Calculations: Traffic Flow Distance Finite Road Fresnel Barrier Atten Bern Atten Autos: 68.46 -3.06 2.66 -1.20 -4.56 0.000 0.0 Heavy Trucks: 79.45 -18.80 2.72 -1.20 -6.61 0.000 0.0 Unitigated Noise Levels (without Topo and barrier attenuation) Userving Lane Equivality CNEL Mutos: 66.9 65.0 63.2 57.1 65.8 6 Mutos: 66.2 60.7 54.3 52.7 61		. ,		ŀ	Noine C			6		
Barrier Distance to Observer: 0.0 feet Medium Trucks: 2.297 Observer Height (Above Pad): 5.0 feet Heavy Trucks: 8.004 Grade Adjustment: 0.0 Pad Elevation: 0.0 feet Left View: 90.0 feet Late Equivalent Distance (in feet) Late Equivalent Distance (in feet) Late Equivalent Distance (in feet) Noise Model Calculations 90.0 degrees Heavy Trucks: 32.439 Heavy Trucks: 32.436 FHWA Noise Model Calculations Vehicle Type REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Bern Atten Autos: 68.46 -3.06 2.66 -1.20 -4.56 0.000 0.0 Medium Trucks: 79.45 -18.80 2.72 -1.20 -5.61 0.000 0.0 Unmitigated Noise Levels (without Topo and barrier attenuation) Leg Evening Leg Evening Leg Night Ldn CNEL Vehicle Type Leg Day Leg Evening Leg Night Ldn CNEL Autos: 66.9 65.0 63.2	Centerline Dist.	to Observer:	37.0 feet		Noise So			reet)		
Observer Height (Above Pad): 5.0 feet Heary Trucks: 8.004 Grade Adjustment: 0.0 Pad Elevation: 0.0 feet Leavy Trucks: 8.004 Grade Adjustment: 0.0 Road Elevation: 0.0 feet Late Equivalent Distance (in feet) Late Equivalent Distance (in feet) Late Equivalent Distance Autos: 32.711 Left View: 90.0 degrees Medium Trucks: 32.439 Heavy Trucks: 32.439 FHWA Noise Model Calculations Venicle Type REMEL Traffic Flow Distance Finite Road Fresel Barrier Atten Berner Atten Audos: 68.46 -3.06 2.66 -1.20 -4.56 0.000 0.0 Medium Trucks: 79.45 -18.80 2.72 -1.20 -4.87 0.000 0.0 Unmitigated Noise Levels (without Topa and barrier attenuation) Use Noise Leig Day Leg Evening Leg Night Ldn CNEL Autos: 66.9 65.0 63.2 57.1 65.8 6 Medium Trucks: 62.2 <	Barrier Distance	to Observer:	0.0 feet							
Pad Elevation: 0.0 feet Lane Equivalent Distance (in feet) Road Grade: 0.0 % Autos: 32.711 Left View: -90.0 degrees Medium Trucks: 32.439 Right View: -90.0 degrees Medium Trucks: 32.439 Vehicle Type REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Vehicle Type REMEL Traffic Flow Distance 11.10 -4.56 0.000 0.0 Medium Trucks: 79.45 -18.80 2.72 -1.20 -4.87 0.000 0.0 Medium Trucks: 84.25 -15.28 2.71 -1.20 -5.61 0.000 0.0 Unmitigated Noise Levels (without Topo and barrier attenuation) Unmitigated Noise Levels (without Topo and barrier attenuation) CNEL Vehicle Type Leg Day Leg Pening Leg Night Ldn CNEL Autos: 66.9 65.0 63.2 57.1 65.8 6 Medium Trucks: 70.5 69.1 60.0	Observer Height	(Above Pad):	5.0 feet					Crada Ad	iuotmont	
Road Grade: 0.0% Autos: 32.711 Left View: -90.0 degrees Medium Trucks: 32.439 Heavy Trucks: 32.439 Heavy Trucks: 32.439 FHWA Noise Model Calculations Finite Road Fresnel Barrier Atten Berner Atten Vehicle Type REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berner Atten Autos: 68.46 -3.06 2.66 -1.20 -4.56 0.000 0.0 Medium Trucks: 79.45 -18.80 2.72 -1.20 -4.87 0.000 0.0 Medium Trucks: 84.25 -15.28 2.71 -1.20 -5.61 0.000 0.0 Unmitigated Moise Levels (without Topo and barrier attenuation) Vehicle Type Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 66.9 65.0 63.2 57.1 65.8 6 Medium Trucks: 62.2 60.7 54.3 52.7 61.2 <t< td=""><td>P</td><td>ad Elevation:</td><td>0.0 feet</td><td></td><td>Heav</td><td>y Trucks:</td><td>8.004</td><td>Glade Au</td><td>Justinent</td><td>. 0.0</td></t<>	P	ad Elevation:	0.0 feet		Heav	y Trucks:	8.004	Glade Au	Justinent	. 0.0
Left View: -90.0 degrees Medium Trucks: 32.439 Right View: 90.0 degrees Heavy Trucks: 32.436 FHWA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Bern Atten Autos: 68.46 -3.06 2.66 -1.20 -4.56 0.000 0.0 Medium Trucks: 79.45 -18.80 2.72 -1.20 -4.67 0.000 0.0 Unnitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Deak Hour Leq Evening Leq Night Ldn CNEL Autos: 66.9 65.0 63.2 57.1 65.8 6 Medium Trucks: 62.2 60.7 54.3 52.7 61.2 6 Medium Trucks: 70.5 69.1 60.0 61.3 69.6 6	Ro	ad Elevation:	0.0 feet		Lane Equ	ivalent E	Distance (i	n feet)		
Right View: 90.0 degrees Heavy Trucks: 32.466 FHWA Noise Model Calculations Heavy Trucks: 32.466 Vehicle Type REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 68.46 -3.06 2.66 -1.20 -4.56 0.000 0.0 Medium Trucks: 79.45 -18.80 2.72 -1.20 -4.61 0.000 0.0 Medium Trucks: 79.45 -15.28 2.71 -1.20 -5.61 0.000 0.0 Unmitigated Noise Levels (without Topo and barrier attenuation) Leq Day Leq Evening Leq Night Ldn CNEL Autos: 66.9 65.0 63.2 57.1 65.8 6 Medium Trucks: 62.2 60.7 54.3 52.7 61.2 6 Medium Trucks: 62.2 60.7 54.3 52.7 61.2 6		Road Grade:	0.0%			Autos:	32.711			
FHWA Noise Model Calculations Finite Road Freshel Barrier Atten Berrier Atten VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berrier Atten Autos: 68.46 -3.06 2.66 -1.20 -4.56 0.000 0.0 Medium Trucks: 79.45 -18.80 2.72 -1.20 -4.87 0.000 0.0 Heavy Trucks: 84.25 -15.28 2.71 -1.20 -5.61 0.000 0.0 Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 66.9 65.0 63.2 57.1 65.8 6 Medium Trucks: 62.2 60.7 54.3 52.7 61.2 6 Heavy Trucks: 70.5 69.1 60.0 61.3 69.6 6		Left View:	-90.0 degrees		Mediun	n Trucks:	32.439			
Vehicle Type REMEL Traffic Flow Distance Finite Road Freshel Barrier Atten Bern Atten Autos: 68.46 -3.06 2.66 -1.20 -4.56 0.000 0.0 Medium Trucks: 79.45 -18.80 2.72 -1.20 -4.87 0.000 0.0 Heavy Trucks: 84.25 -15.28 2.71 -1.20 -5.61 0.000 0.0 Unmitigated Noise Levels (without Topo and barrier attenuation) -1.20 -5.61 0.000 0.0 Vehicle Type Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 66.9 65.0 63.2 57.1 65.8 6 Medium Trucks: 62.2 60.7 54.3 52.7 61.2 6 Heavy Trucks: 70.5 69.1 60.0 61.3 69.6 6		Right View:	90.0 degrees		Heav	y Trucks:	32.466			
Autos: 68.46 -3.06 2.66 -1.20 -4.56 0.000 0.0 Medium Trucks: 79.45 -18.80 2.72 -1.20 -4.87 0.000 0.0 Heavy Trucks: 84.25 -15.28 2.71 -1.20 -5.61 0.000 0.0 Umritigated Moise Levels (without Topo and barrier attenuation) -4.87 0.000 0.0 VehicleType Leq Peek Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 66.9 65.0 63.2 57.1 65.8 6 Medium Trucks: 62.2 60.7 54.3 52.7 61.2 6 Heavy Trucks: 70.5 69.1 60.0 61.3 69.6 6	FHWA Noise Mod	el Calculation:	s	-						
Medium Trucks: 79.45 -18.80 2.72 -1.20 -4.87 0.000 0.0 Heavy Trucks: 84.25 -15.28 2.71 -1.20 -5.61 0.000 0.0 Unmitigated Noise Levels (without Topo and barrier attenuation)	VehicleType	REMEL	Traffic Flow	Distance	Finite	Road	Fresnel	Barrier Att	en Ber	m Atten
Heavy Trucks: 84.25 -15.28 2.71 -1.20 -5.61 0.000 0.0 Unmitigated Noise Levels (without Topo and barrier attenuation) Leq Day Leq Evening Leq Night Ldn CNEL Autos: 66.9 65.0 63.2 57.1 65.8 66 Medium Trucks: 62.2 60.7 54.3 52.7 61.2 6 Heavy Trucks: 70.5 69.1 60.0 61.3 69.6 6	Autos:	68.46	-3.06	2.6	6	-1.20	-4.5	6 0.0	000	0.00
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 66.9 65.0 63.2 57.1 65.8 6 Medium Trucks: 62.2 60.7 54.3 52.7 61.2 6 Heavy Trucks: 70.5 69.1 60.0 61.3 69.6 6	Medium Trucks:	79.45	-18.80	2.7	2	-1.20	-4.8			0.00
VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 66.9 65.0 63.2 57.1 65.8 6 Medium Trucks: 62.2 60.7 54.3 52.7 61.2 6 Heavy Trucks: 70.5 69.1 60.0 61.3 69.6 6	Heavy Trucks:	84.25	-15.28	2.7	1	-1.20	-5.6	1 0.0	000	0.00
Autos: 66.9 65.0 63.2 57.1 65.8 6 Medium Trucks: 62.2 60.7 54.3 52.7 61.2 6 Heavy Trucks: 70.5 69.1 60.0 61.3 69.6 6				-	,				1	
Medium Trucks: 62.2 60.7 54.3 52.7 61.2 6 Heavy Trucks: 70.5 69.1 60.0 61.3 69.6 6					•	Leq N		-		
Heavy Trucks: 70.5 69.1 60.0 61.3 69.6 6										66.
										61.
venicie Noise: 72.5 70.9 65.3 63.1 71.5 7										69.
				9	65.3		63.1	71.	5	71.
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA	Centerline Distan	ce to Noise Co	ontour (in feet)	70	d D A	65 1	24	60 dPA	FE	dBA
			1 1			05 01				<i>ава</i> 469
										469
GIVEL. 49 105 227 4			CIVEL		49		103	221		403

	FHWA-RD	-77-108 HIGH	WAY NO	ISE PRED		IODEL (9	0/12/20	021)		
Scenari Road Nam Road Segmen	e: Berkshire R	d.				Name: N lumber: 1		ic Gateway		
SITE	SPECIFIC IN	PUT DATA			1	IOISE N	IODE	L INPUTS	6	
Highway Data				Site C	onditions	(Hard =	10, So	ft = 15)		
Average Daily	Traffic (Adt):	7,113 vehicle	s				Autos:	15		
Peak Hour	Percentage:	10.00%		1	Medium Tr	ucks (2 A	xles):	15		
Peak H	our Volume:	711 vehicles	6		Heavy Tru	cks (3+ A	xles):	15		
Vel	nicle Speed:	45 mph		Vehic	e Mix					
Near/Far Lar	e Distance:	36 feet			ehicleType		Dav	Evenina	Niaht	Daily
Site Data							77.5%		9.6%	
Bar	rier Heiaht:	0.0 feet			Medium T	rucks:	84.8%	4.9%	10.3%	2.52%
Barrier Type (0-W		0.0			Heavy T	rucks:	86.5%	2.7%	10.8%	5.67%
Centerline Dis	. ,	37.0 feet		Malaa	0 F		() K.	- 41		
Centerline Dist. I	o Observer:	37.0 feet		Noise	Source E Auto		000	et)		
Barrier Distance t	o Observer:	0.0 feet		Mar	Auto lium Truck		97			
Observer Height ()	Above Pad):	5.0 feet			avy Truck		04	Grade Adj	uctmont	
Pa	d Elevation:	0.0 feet		пе	avy muck	s. o.u	104	Grade Auj	usument	0.0
Roa	d Elevation:	0.0 feet		Lane E	Equivalen	t Distanc	e (in f	'eet)		
F	Road Grade:	0.0%			Auto	s: 32.7	711			
	Left View:	-90.0 degree	es	Med	lium Truck	s: 32.4	139			
	Right View:	90.0 degree	es	He	avy Truck	s: 32.4	166			
FHWA Noise Mode	I Calculations	5								
VehicleType	REMEL	Traffic Flow	Distan	ce Fin	ite Road	Fresn	e/	Barrier Atte	en Ber	m Atten
Autos:	68.46	-3.69		2.66	-1.20		-4.56	0.0		0.000
Medium Trucks:	79.45	-19.30		2.72	-1.20		-4.87	0.0		0.000
Heavy Trucks:	84.25	-15.78		2.71	-1.20		-5.61	0.0	00	0.000
Unmitigated Noise	Levels (with	out Topo and	barrier a	ttenuation	ı)					
VehicleType	Leq Peak Hou	r Leq Day	Le	q Evening	Leq	Night		Ldn	CI	VEL
Autos:	66	-	64.3	62		56.5		65.1		65.7
		7	60.2	53	.8	52.2		60.7		60.9
Medium Trucks:	61									69.3
Heavy Trucks:	70	.0	68.6		.5	60.8		69.1		
	• · ·	.0	68.6 70.4	59 64		60.8 62.6		69.1 71.0		
Heavy Trucks:	70	.0 .9	70.4	64	.7	62.6		71.0		71.3
Heavy Trucks: Vehicle Noise:	70	.0 9 ntour (in feet)	70.4	64 70 dBA	.7 65	62.6 dBA		71.0		71.3 dBA
Heavy Trucks: Vehicle Noise:	70	0 9 ntour (in feet)	70.4	64 70 dBA 4	.7	62.6		71.0		71.3

	FHWA-RD	-77-108 HIGH\	NAY	NOISE F	REDICTIO	ом мо	DEL (9)	12/20	21)		
Scenario:									c Gateway		
Road Name:	Berkshire R	d.			J	ob Nur	nber: 13	3923			
Road Segment:	e/o S. H St.										
	ECIFIC IN	PUT DATA							L INPUT	5	
Highway Data				Si	te Condit	ons (H	lard = 1	0, So	ft = 15)		
Average Daily Tra	affic (Adt):	7,223 vehicle	s				A	utos:	15		
Peak Hour Pe	ercentage:	10.00%			Mediu	m Truc	ks (2 A)	des):	15		
Peak Hou	r Volume:	722 vehicles			Heavy	Truck	s (3+ A)	des):	15		
	le Speed:	45 mph		V	ehicle Mix						
Near/Far Lane	Distance:	36 feet			Vehicle	Туре	L	Day	Evening	Night	Daily
Site Data						Au	tos: 7	7.5%	12.9%	9.6%	91.949
Barrie	er Height:	0.0 feet			Media	ım Tru	cks: 8	4.8%	4.9%	10.3%	2.489
Barrier Type (0-Wall		0.0			Hea	vy Tru	cks: 8	6.5%	2.7%	10.8%	5.58%
Centerline Dist.		37.0 feet			oise Sour	o Elos	ationa	lin fo	of)		
Centerline Dist. to	Observer:	37.0 feet		N		Autos:	0.0		el)		
Barrier Distance to	Observer:	0.0 feet			Medium T		2.2				
Observer Height (Ab	ove Pad):	5.0 feet			Heavy T		8.0		Grade Ad	ustment	0.0
Pad	Elevation:	0.0 feet			neavy i	rucks.	0.0	J#	Orade Adj	usunem.	0.0
Road	Elevation:	0.0 feet		La	ane Equiv	alent D	istance	e (in f	eet)		
Ro	ad Grade:	0.0%				Autos:	32.7	11			
	Left View:	-90.0 degree	s		Medium 7		32.4				
R	ight View:	90.0 degree	s		Heavy 1	rucks:	32.4	66			
FHWA Noise Model (Calculations										
	REMEL	Traffic Flow	Dis	tance	Finite Ro		Fresne		Barrier Atte		m Atten
Autos:	68.46	-3.62		2.66		1.20		4.56		00	0.00
Medium Trucks:	79.45	-19.30		2.72		1.20		4.87		00	0.00
Heavy Trucks:	84.25	-15.78		2.71	-	1.20	-	5.61	0.0	00	0.00
Unmitigated Noise L			barrie	er attenu	ation)						
	eq Peak Hou			Leq Eve		Leq Ni			Ldn		VEL
Autos:	66.		64.4		62.6		56.6		65.2		65.
Medium Trucks:	61.		50.2		53.8		52.2		60.7		60.
Heavy Trucks: Vehicle Noise:	70.		58.6 70.4		59.5 64.7		60.8 62.6		69.1 71.0		69. 71.
			0.4		64.7		62.6		/1.0)	71.
Centerline Distance	to Noise Co	ntour (in feet)		70.00		05.15					10.4
			dn:	70 dE		65 dE		6	0 dBA	55	dBA
			Lan: IEL:		43 45		93 97		201 210		433 451
		Ch	IL.		40		97		∠10		45

Monday, November 8, 2021

FH\	NA-RD	-77-108 HIGHW	AY NO	SE	PREDIC		ODEL (9/12/2	021)			
Scenario: 2024 Road Name: Berks Road Segment: e/o S	shire R	d.					Name: I umber: 1		ic Gatew	ay		
SITE SPECIE	IC IN	PUT DATA							L INPU	TS		
Highway Data				S	Site Con	ditions	(Hard =	10, S	oft = 15)			
Average Daily Traffic ()	Adt):	8,088 vehicles						Autos:	15			
Peak Hour Percent	age:	10.00%					icks (2 A					
Peak Hour Volu	ıme:	809 vehicles			He	avy Truc	:ks (3+ A	(xles)	15			
Vehicle Sp	eed:	45 mph		v	/ehicle I	<i>lix</i>						
Near/Far Lane Dista	nce:	36 feet		F		cleType		Day	Evening	7 Ni	ght	Daily
Site Data							utos:	77.5%			-	91.819
Barrier Hei	aht.	0.0 feet			Me	edium Tr	ucks:	84.8%	4.99	6 10	0.3%	2.529
Barrier Type (0-Wall, 1-Be		0.0			F	leavy Tr	ucks:	86.5%	2.79	6 10	0.8%	5.67%
Centerline Dist. to Ba		37.0 feet			Voise So	urco El	wation	(in f	noti			
Centerline Dist. to Obse	rver:	37.0 feet		-	10/36 30	Autos		000	eeij			
Barrier Distance to Obse	rver:	0.0 feet			Madiu	n Trucks		297				
Observer Height (Above F	Pad):	5.0 feet				y Trucks		004	Grade A	diust	ment [.]	0.0
Pad Eleva	tion:	0.0 feet								lajaon	monit.	0.0
Road Eleva	tion:	0.0 feet		L	ane Equ	ıivalent	Distanc	e (in:	feet)			
Road Gr	ade:	0.0%				Autos		711				
Left V	liew:	-90.0 degrees				n Trucks		439				
Right V	liew:	90.0 degrees			Heav	y Trucks	32.4	466				
FHWA Noise Model Calcu	lations	;										
VehicleType REM	EL	Traffic Flow	Distand	e	Finite	Road	Fresn	el	Barrier A	Atten	Bern	n Atten
	68.46	-3.13		2.66	-	-1.20		-4.56		0.000		0.00
	79.45	-18.75		2.72		-1.20		-4.87		0.000		0.00
Heavy Trucks:	84.25	-15.22		2.71	1	-1.20		-5.61		0.000		0.00
Unmitigated Noise Levels												
VehicleType Leq Pea		11 12		q Ev	ening/	Leq	Night		Ldn		CN	
Autos:	66.				63.1		57.1			5.7		66.
Medium Trucks:	62.				54.3		52.8		-	1.3		61.
Heavy Trucks:	70.				60.1		61.3		-	9.7		69.
Vehicle Noise:	72.	5 70	.9		65.2		63.1		7	1.6		71.
Centerline Distance to No	ise Co	ntour (in feet)										
				70 d		65 0			50 dBA		55 a	
		La CNE			47		101		-	18		471 490
					49		106			28		

	FHWA-RI	D-77-108 HIGH	WAY NC	ISE PR	EDICTION N	10DEL (9/1	2/2021)		
Road Nam	io: 2024+P ne: Berkshire F nt: e/o S. H St					t Name: Ma lumber: 13	ijestic Gateway 923		
	SPECIFIC IN	IPUT DATA					DEL INPUT	5	
Highway Data				Site	Conditions	(Hard = 10), Soft = 15)		
Average Daily	Traffic (Adt):	8,198 vehicle	es			Au	tos: 15		
Peak Hour	Percentage:	10.00%			Medium Ti	ucks (2 Axl	es): 15		
Peak H	lour Volume:	820 vehicle	S		Heavy Tru	cks (3+ Axl	es): 15		
	hicle Speed:	45 mph		Veh	icle Mix				
Near/Far La	ne Distance:	36 feet			VehicleType	e Da	ay Evening	Night	Daily
Site Data						Autos: 77	.5% 12.9%	9.6%	91.92%
Ba	rrier Height:	0.0 feet			Medium 7	rucks: 84	.8% 4.9%	10.3%	2.49%
Barrier Type (0-W		0.0			Heavy 1	rucks: 86	6.5% 2.7%	10.8%	5.59%
Centerline Di	st. to Barrier:	37.0 feet		Noi	se Source E	lovations (in foot)		
Centerline Dist.	to Observer:	37.0 feet		1101.	Auto				
Barrier Distance	to Observer:	0.0 feet			ledium Truck	0.000			
Observer Height (Above Pad):	5.0 feet			Heavy Truck			ustment	0.0
Pa	ad Elevation:	0.0 feet						uoumoni	0.0
Roa	ad Elevation:	0.0 feet		Lan	e Equivalen		. ,		
1	Road Grade:	0.0%			Auto		1		
	Left View:	-90.0 degre	es		ledium Truck		-		
	Right View:	90.0 degre	es		Heavy Truck	s: 32.46	6		
FHWA Noise Mode	el Calculation	s		-					
VehicleType	REMEL	Traffic Flow	Distan	ice F	inite Road	Fresnel	Barrier Atte	en Ber	m Atten
Autos:	68.46	-3.07		2.66	-1.20	-4	.56 0.0	00	0.00
Medium Trucks:	79.45			2.72	-1.20		.87 0.0		0.00
		-15.22		2.71	-1.20	-5	.61 0.0	00	0.00
Heavy Trucks:	84.25	=10.22			1.20	0.			
Heavy Trucks: Unmitigated Noise			barrier a	ttenuat					
Unmitigated Noise VehicleType	e Levels (with Leq Peak Hou	out Topo and ur Leq Day	/ Le	ttenuat eq Eveni	ion) ing Leq	Night	Ldn		VEL
Unmitigated Noise VehicleType Autos:	e Levels (with Leq Peak Hou 66	out Topo and ur Leq Day	′ Le		ion) ing Leq 63.2	Night 57.1	65.8	3	66.4
Unmitigated Noise VehicleType Autos: Medium Trucks:	E Levels (with Leq Peak Hou 66	out Topo and ur Leq Day 3.9 2.2	65.0 60.7		ion) ing Leq 63.2 54.3	Night 57.1 52.8	65.8 61.3	1	66.4 61.5
Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks:	e Levels (with Leq Peak Hou 60 62 70	out Topo and ur Leq Day 3.9 2.2 0.5	65.0 60.7 69.1	eq Eveni	ion) ing Leq 63.2 54.3 60.1	Night 57.1 52.8 61.3	65.8 61.3 69.7	5	66.4 61.5 69.8
Unmitigated Noise VehicleType Autos: Medium Trucks:	e Levels (with Leq Peak Hou 60 62 70	out Topo and ur Leq Day 3.9 2.2 0.5	65.0 60.7	eq Eveni	ion) ing Leq 63.2 54.3	Night 57.1 52.8	65.8 61.3	5	66.4 61.4 69.4
Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks:	e Levels (with Leg Peak Hou 60 62 70 72	out Topo and ur Leq Day 3.9 2.2 0.5 2.5	65.0 60.7 69.1 71.0	eq Eveni	ion) ing Leq 63.2 54.3 60.1	Night 57.1 52.8 61.3	65.8 61.3 69.7	5	66.4 61.5 69.8
Unmitigated Noise Vehicle Type Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	e Levels (with Leg Peak Hou 60 62 70 72	out Topo and ur Leq Day 3.9 2.2 0.5 2.5 pontour (in feet	2 Le 65.0 60.7 69.1 71.0	eq Eveni	ion) ing Leq 63.2 54.3 60.1 65.3 65.3	Night 57.1 52.8 61.3 63.2 dBA	65.8 61.3 69.7 71.6 60 dBA	55	66.4 61.5 69.8 71.9 dBA
Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	e Levels (with Leg Peak Hou 60 62 70 72	out Topo and <i>Ir</i> Leq Day 3.9 2.2 0.5 2.5 pontour (in feet	65.0 60.7 69.1 71.0	eq Eveni	ion) ing Leq 63.2 54.3 60.1 65.3	Night 57.1 52.8 61.3 63.2	65.8 61.3 69.7 71.6	55	66.4 61.5 69.8 71.9

	FHWA-RD	0-77-108 HIGH	WAY N	IOISE	PREDIC		IODEL (9	9/12/20	021)		
Scenario Road Name Road Segmen	: Berkshire R	td.					Name: N lumber: 1		ic Gateway		
SITE S	PECIFIC IN	PUT DATA				N	IOISE N	IODE	L INPUTS	3	
Highway Data				S	Site Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily T	raffic (Adt):	8,706 vehicle	es					Autos:	15		
Peak Hour F	Percentage:	10.00%			Me	dium Tr	ucks (2 A	xles):	15		
Peak Ho	our Volume:	871 vehicle	6		He	avy Tru	cks (3+ A	xles):	15		
Veh	icle Speed:	45 mph		L.	/ehicle	Mix					
Near/Far Lan	e Distance:	36 feet				icleType		Dav	Evening	Night	Daily
Site Data					ven			77.5%	•	9.6%	
					14	, edium T		84.8%		10.3%	2.52%
	ier Height:	0.0 feet				Heavy T		86.5%		10.3 %	5.67%
Barrier Type (0-Wa	. ,	0.0			,	icavy i	ucho.	00.370	2.170	10.070	5.07 %
Centerline Dis		37.0 feet		٨	loise So	ource El	evations	in fe	eet)		
Centerline Dist. to		37.0 feet				Auto	s: 0.0	000			
Barrier Distance to		0.0 feet			Mediu	m Truck	s: 2.2	297			
Observer Height (A	d Elevation:	5.0 feet 0.0 feet			Heav	y Truck	s: 8.0	004	Grade Adj	ustment	0.0
		0.0 feet		,	ano Ea	uivalon	Distanc	o (in t	foot)		
	d Elevation: oad Grade:	0.0 reet		-	ane Ly	Auto			eeŋ		
ĸ	Left View:	-90.0 degree			Modiu	m Truck					
	Right View:	90.0 degree				ry Truck					
FHWA Noise Mode	Calculation	5									
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresn	el	Barrier Atte	en Ber	m Atten
Autos:	68.46	-2.81		2.66	6	-1.20		-4.56	0.0	00	0.000
Medium Trucks:	79.45	-18.43		2.72	2	-1.20		-4.87	0.0	00	0.000
Heavy Trucks:	84.25	-14.90		2.71	I	-1.20		-5.61	0.0	00	0.000
Unmitigated Noise	Levels (with	out Topo and	barrier	attenu	uation)						
VehicleType I	eq Peak Hou	r Leq Day	· 1	Leq Ev	rening	Leq	Night		Ldn	CI	VEL
Autos:	67		65.2		63.4		57.4		66.0		66.6
Medium Trucks:	62		61.0		54.7		53.1		61.6		61.8
Heavy Trucks:	70		69.4		60.4		61.7		70.0		70.1
Vehicle Noise:	72	.8	71.3		65.6		63.5		71.9)	72.2
Centerline Distance	e to Noise Co	ntour (in feet)	70 d	0.4	05	dBA		0 dBA		-10.4
				70 a		65		6		55	dBA
			Ldn: VEL:		49		107		229		494
		Ci	VEL:		51		111		239		515

	FHWA-RD-7	7-108 HIGHWA	Y NOISE	PREDIC	TION M	ODEL (9/12/20	021)		
Scenario: 2	2029+P				Project	Name: I	Majest	ic Gateway	,	
Road Name: E	Berkshire Rd.				Job N	umber:	13923			
Road Segment: e	e/o S. H St.									
	ECIFIC INPU	JT DATA						L INPUT	5	
Highway Data				Site Cond	litions	(Hard =	10, So	oft = 15)		
Average Daily Trat	fic (Adt): 8	,816 vehicles					Autos:	15		
Peak Hour Per	centage: 10	.00%		Med	lium Tri	ucks (2 A	Axles):	15		
Peak Hour	Volume:	882 vehicles		Hea	avy Tru	cks (3+ A	Axles):	15		
Vehicle	e Speed:	45 mph	ŀ	Vehicle N	lix					
Near/Far Lane D	Distance:	36 feet	ŀ		cleTvpe		Dav	Evening	Night	Dailv
Site Data							77.5%	•	9.6%	
	·Height:	0.0 feet		Me	dium Ti		84.8%		10.3%	2.499
Barrier Type (0-Wall,		0.0		н	leavy Ti		86.5%		10.8%	
Centerline Dist. to	,	37.0 feet								
Centerline Dist. to C		37.0 feet		Noise So				eet)		
Barrier Distance to C		0.0 feet			Auto		000			
Observer Height (Abo		5.0 feet		Mediun			297			
	levation:	0.0 feet		Heavy	/ Truck	s: 8.	004	Grade Adj	iustment.	0.0
	levation:	0.0 feet	ŀ	Lane Equ	ivalent	Distand	e (in f	feet)		
		0.0%	ŀ		Auto			,		
		90.0 degrees		Mediun	n Truck	s: 32.	439			
Rig		90.0 degrees		Heav	/ Truck	s: 32.	466			
FHWA Noise Model C										
			istance	Finite I		Fresh		Barrier Atte		m Atten
Autos:	68.46	-2.75	2.6	-	-1.20		-4.56	0.0		0.00
Medium Trucks:	79.45	-18.43	2.7		-1.20		-4.87		000	0.00
Heavy Trucks:	84.25	-14.90	2.7	'1	-1.20		-5.61	0.0	000	0.00
Unmitigated Noise Le										
	Peak Hour	Leq Day		vening	Leq	Night		Ldn		VEL
Autos:	67.2	65.3		63.5		57.5		66.1		66
Medium Trucks:	62.5	61.0		54.7		53.1		61.6		61.
Heavy Trucks:	70.9	69.4		60.4		61.7		70.0		70
Vehicle Noise:	72.8	71.3		65.6		63.5)	71.9	9	72
Centerline Distance to	Noise Cont	our (in feet)								
				dBA	65	dBA	6	60 dBA		dBA
		Ldn:		50		107		230		49
		CNEL		52		111		240		516

Monday, November 8, 2021

FHWA-	RD-77-108 HIGH	IWAY NO	SE PR	EDICTION M	ODEL (9/12	/2021)		_
Scenario: 2042 Road Name: Berkshire Road Segment: e/o S. H					Name: Maje umber: 1392	estic Gateway 23		
SITE SPECIFIC	INPUT DATA					DEL INPUTS	3	
Highway Data			Site	Conditions	(Hard = 10,	Soft = 15)		
Average Daily Traffic (Adt).	11,078 vehicl	es			Auto	s: 15		
Peak Hour Percentage.	10.00%			Medium Tru	icks (2 Axles	s): 15		
Peak Hour Volume	1,108 vehicle	s		Heavy Truc	ks (3+ Axles	s): 15		
Vehicle Speed	45 mph		Veh	icle Mix				
Near/Far Lane Distance.	36 feet			VehicleType	Day	Evening	Night	Daily
Site Data					utos: 77.5	•	9.6%	91.819
Barrier Height	0.0 feet			Medium Tr	ucks: 84.8	3% 4.9%	10.3%	2.529
Barrier Type (0-Wall, 1-Berm)				Heavy Tr	ucks: 86.5	5% 2.7%	10.8%	5.679
Centerline Dist. to Barrier								
Centerline Dist. to Observer	37.0 feet		NOIS	e Source El Auto:		reet)		
Barrier Distance to Observer	0.0 feet				0.000			
Observer Height (Above Pad)	5.0 feet			ledium Truck:		Grade Adj	uctment	0.0
Pad Elevation	0.0 feet			Heavy Truck	8: 8.004	Graue Auj	usunent.	0.0
Road Elevation	0.0 feet		Lan	e Equivalent	Distance (i	n feet)		
Road Grade	0.0%			Autos	32.711			
Left View	-90.0 degre	es	N	edium Trucks	32.439			
Right View	90.0 degre	es		Heavy Trucks	32.466			
FHWA Noise Model Calculatio	ons							
VehicleType REMEL	Traffic Flow	Distanc		inite Road	Fresnel	Barrier Atte		n Atten
Autos: 68.4			2.66	-1.20	-4.5			0.00
Medium Trucks: 79.4			2.72	-1.20	-4.8			0.00
Heavy Trucks: 84.2	25 -13.86		2.71	-1.20	-5.6	1 0.0	00	0.00
Theory Trucks. 04.2								
Unmitigated Noise Levels (wi	thout Topo and	barrier at	tenuat	ion)				
Unmitigated Noise Levels (wi VehicleType Leq Peak H	lour Leq Da	y Lee	q Eveni	ng Leq	Night	Ldn		IEL
Unmitigated Noise Levels (wi VehicleType Leq Peak H Autos:	lour Leq Da 68.2	y Lee 66.3	q Eveni	ng Leq 64.5	58.4	67.1		67.
Unmitigated Noise Levels (wi VehicleType Leq Peak H Autos: Medium Trucks:	lour Leq Da 68.2 63.6	y Lee 66.3 62.1	q Eveni	ng Leq 64.5 55.7	58.4 54.2	67.1 62.6		67. 62.
Unmitigated Noise Levels (wi VehicleType Leq Peak H Autos: Medium Trucks: Heavy Trucks:	lour Leq Da 68.2 63.6 71.9	y Lee 66.3 62.1 70.5	q Eveni	ng Leq 64.5 55.7 61.4	58.4 54.2 62.7	67.1 62.6 71.1	5	67. 62. 71.
Unmitigated Noise Levels (wi VehicleType Leq Peak H Autos: Medium Trucks: Heavy Trucks:	lour Leq Da 68.2 63.6	y Lee 66.3 62.1	q Eveni	ng Leq 64.5 55.7	58.4 54.2	67.1 62.6	5	67. 62. 71.
Unmitigated Noise Levels (wi VehicleType Leq Peak H Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	lour Leq Da 68.2 63.6 71.9 73.9	y Lee 66.3 62.1 70.5 72.3	q Eveni	ng Leq 64.5 55.7 61.4 66.6	58.4 54.2 62.7 64.5	67.1 62.6 71.1 72.9))	67. 62. 71. 73.
Unmitigated Noise Levels (wi VehicleType Leq Peak H Autos: Medium Trucks: Heavy Trucks:	lour Leq Da 68.2 63.6 71.9 73.9	y Lee 66.3 62.1 70.5 72.3	q Eveni	ng Leq 64.5 55.7 61.4 66.6 65.0	58.4 54.2 62.7 64.5	67.1 62.6 71.1 72.9))	67. 62. 71. 73.
Unmitigated Noise Levels (wi VehicleType Leq Peak H Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	Leq Da 68.2 63.6 71.9 73.9 Contour (in fee	y Lee 66.3 62.1 70.5 72.3	q Eveni	ng Leq 64.5 55.7 61.4 66.6	58.4 54.2 62.7 64.5	67.1 62.6 71.1 72.9))	67. 62. 71. 73.

	FHWA-R	D-77-108 HIGH	WAY NC	ISE P	REDICT	TION M	ODEL (9)	12/20	021)		
Road Nam	io: 2042+P ne: Berkshire F nt: e/o S. H St.						Name: M umber: 13		ic Gateway		
	SPECIFIC IN	IPUT DATA							L INPUTS	5	
Highway Data				Si	te Cond	litions	(Hard = 1	0, So	oft = 15)		
Average Daily	Traffic (Adt):	11,188 vehicle	es				A	utos:	15		
Peak Hour	Percentage:	10.00%			Med	lium Tru	ucks (2 A)	(les):	15		
Peak H	lour Volume:	1,119 vehicle	S		Hea	vy Truc	cks (3+ A)	(les):	15		
Ve	hicle Speed:	45 mph		Ve	hicle M	ix					
Near/Far La	ne Distance:	36 feet				leType	E	Day	Evening	Night	Daily
Site Data								7.5%		9.6%	
Ba	rrier Height:	0.0 feet			Mee	dium Ti	ucks: 8	4.8%	4.9%	10.3%	2.49%
Barrier Type (0-W		0.0			H	eavy Ti	ucks: 8	6.5%	2.7%	10.8%	5.61%
Centerline Di	. ,	37.0 feet		A.c.	ine Car	wee El	evations	lin fe	of)		
Centerline Dist.	to Observer:	37.0 feet		NC	lise Sol	Auto:			el)		
Barrier Distance	to Observer:	0.0 feet			Medium						
Observer Height ((Above Pad):	5.0 feet							Grade Adj	ustmont	
Pa	ad Elevation:	0.0 feet			neavy	Truck	5. 0.0	04	Orade Haji	Journeine	. 0.0
Roa	ad Elevation:	0.0 feet		La	ne Equ	ivalent	Distance	e (in f	'eet)		
1	Road Grade:	0.0%				Autos	s: 32.7	11			
	Left View:	-90.0 degree	es		Medium	Truck	s: 32.4	39			
	Right View:	90.0 degree	es		Heavy	Truck	s: 32.4	66			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distan	се	Finite F	Road	Fresne	1	Barrier Atte	en Ber	m Atten
Autos:	68.46	-1.72		2.66		-1.20	-	4.56	0.0	00	0.000
Medium Trucks:	79.45	-17.38		2.72		-1.20	-	4.87	0.0	00	0.000
Heavy Trucks:	84.25	-13.86		2.71		-1.20	-	5.61	0.0	00	0.000
					- 41 1						
VehicleType	Leq Peak Hou	ir Leq Day	Le	ttenua eq Eve	ning	Leq	Night		Ldn		NEL
VehicleType Autos:	Leq Peak Hou 68	Ir Leq Day	/ Le		ning 64.5	Leq	58.5		67.1		67.7
VehicleType Autos: Medium Trucks:	Leq Peak Hou 68 63	Ir Leq Day 1.2 1.6	66.3 62.1		64.5 55.7	Leq	58.5 54.2		67.1 62.6		67.7 62.9
VehicleType Autos: Medium Trucks: Heavy Trucks:	Leq Peak Hou 68 63 71	ir Leq Day .2 .6 .9	66.3 62.1 70.5		64.5 55.7 61.4	Leq	58.5 54.2 62.7		67.1 62.6 71.1		67.7 62.9 71.2
VehicleType Autos: Medium Trucks:	Leq Peak Hou 68 63	ir Leq Day .2 .6 .9	66.3 62.1		64.5 55.7	Leq	58.5 54.2		67.1 62.6		67.7 62.9 71.2
Autos: Medium Trucks: Heavy Trucks:	Leq Peak Hou 68 63 71 73	<i>Ir Leq Day</i> .2 .6 .9	66.3 62.1 70.5 72.3	eq Eve	64.5 55.7 61.4 66.6	- 1	58.5 54.2 62.7 64.5		67.1 62.6 71.1 72.9		67.7 62.9 71.2 73.2
VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	Leq Peak Hou 68 63 71 73	<i>Ir Leq Day</i> .2 .6 .9	/ Le 66.3 62.1 70.5 72.3		64.5 55.7 61.4 66.6	- 1	58.5 54.2 62.7 64.5	6	67.1 62.6 71.1 72.9		67.7 62.9 71.2 73.2 dBA
VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	Leq Peak Hou 68 63 71 73	Ir Leq Day 1.2 1.6 1.9 1.9 Intour (in feet	66.3 62.1 70.5 72.3	eq Eve	64.5 55.7 61.4 66.6	- 1	58.5 54.2 62.7 64.5	6	67.1 62.6 71.1 72.9		67.7 62.9 71.2 73.2

FHWA-RD-77-108 HIGHWA	Y NOISI	E PREDIC	TION M	ODEL (9	/12/20	021)		
Scenario: E Road Name: Berkshire Rd. Road Segment: e/o Monitor St.				Name: N umber: 1		ic Gateway		
SITE SPECIFIC INPUT DATA						L INPUTS	5	
Highway Data		Site Con	ditions	(Hard =	10, So	oft = 15)		
Average Daily Traffic (Adt): 7,144 vehicles				A	Autos:	15		
Peak Hour Percentage: 10.00%		Me	dium Tru	icks (2 A	xles):	15		
Peak Hour Volume: 714 vehicles		He	avy Truc	cks (3+ A	xles):	15		
Vehicle Speed: 45 mph		Vehicle I	Mix					
Near/Far Lane Distance: 36 feet			icleType	1	Dav	Evenina	Niaht	Daily
Site Data					77.5%		9.6%	,
Barrier Height: 0.0 feet		Me	edium Tr	ucks:	84.8%	4.9%	10.3%	2.52%
Barrier Type (0-Wall, 1-Berm): 0.0		F	Heavy Tr	ucks:	86.5%	2.7%	10.8%	5.67%
Centerline Dist. to Barrier: 37.0 feet		Noise So	uree El	ovetiene	lin fo	ati		
Centerline Dist. to Observer: 37.0 feet		NUISe 30	Auto:			el)		
Barrier Distance to Observer: 0.0 feet		Martin	Autos m Trucks					
Observer Height (Above Pad): 5.0 feet			y Trucks			Grade Adj	ustmon	
Pad Elevation: 0.0 feet		neav	y mucks	s. o.u	104	Grade Auj	usunen	. 0.0
Road Elevation: 0.0 feet		Lane Equ	uivalent	Distanc	e (in f	feet)		
Road Grade: 0.0%			Autos	s: 32.7	'11			
Left View: -90.0 degrees		Mediur	m Trucks	s: 32.4	39			
Right View: 90.0 degrees		Heav	y Trucks	s: 32.4	66			
FHWA Noise Model Calculations								
VehicleType REMEL Traffic Flow L	Distance	Finite	Road	Fresne		Barrier Atte	en Be	rm Atten
Autos: 68.46 -3.67	2.		-1.20		4.56	0.0		0.000
Medium Trucks: 79.45 -19.28		72	-1.20		4.87	0.0		0.000
Heavy Trucks: 84.25 -15.76	2.	71	-1.20		-5.61	0.0	00	0.000
Unmitigated Noise Levels (without Topo and bar	rier atte	nuation)						
VehicleType Leq Peak Hour Leq Day		Evening	Leq	Night		Ldn		NEL
Autos: 66.3 64.4	-	62.6		56.5		65.2		65.8
Medium Trucks: 61.7 60.2	-	53.8		52.3		60.7		61.0
Heavy Trucks: 70.0 68.6	-	59.5		60.8		69.1		69.3
	1	64.7		62.6		71.0)	71.3
Vehicle Noise: 72.0 70.4	*							
Vehicle Noise: 72.0 70.4 Centerline Distance to Noise Contour (in feet)	-							
Centerline Distance to Noise Contour (in feet)	70	dBA	65 (dBA	6	i0 dBA	55	dBA
	70	dBA 43 45	65 (<i>dBA</i> 93 97	6	0 dBA 201 210	55	dBA 433 451

	FHWA-RD	-77-108 HIGH	WAY N	IOISE P	REDICTION	IODEL	(9/12/2)	021)		
Scenari Bood Norm	o: E+P e: Berkshire R	a				t Name. Number		ic Gateway	/	
	t: e/o Monitor				JOD I	vumber	13923			
	SPECIFIC IN	PUT DATA						L INPUT	5	
Highway Data				Si	te Conditions	(Hard	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	7,254 vehicle	s				Autos:	15		
Peak Hour	Percentage:	10.00%			Medium T	rucks (2	Axles):	15		
Peak H	our Volume:	725 vehicles			Heavy Tru	icks (3+	Axles):	15		
	hicle Speed:	45 mph		Ve	ehicle Mix					
Near/Far La	ne Distance:	36 feet			VehicleTyp	e	Dav	Evening	Night	Daily
Site Data						Autos:	77.5%	•	9.6%	
Bai	rier Height:	0.0 feet			Medium 1	rucks:	84.8%	4.9%	10.3%	2.489
Barrier Type (0-W		0.0			Heavy 1	rucks:	86.5%	2.7%	10.8%	5.589
Centerline Dis	. ,	37.0 feet						41		
Centerline Dist.	to Observer:	37.0 feet		190	oise Source E			eet)		
Barrier Distance	to Observer:	0.0 feet			Auto		0.000			
Observer Height (Above Pad):	5.0 feet			Medium Truck		2.297	Crada Ad	iuntmont	
Pa	d Elevation:	0.0 feet			Heavy Truck	(5: 0	8.004	Grade Adj	usimeni	0.0
Roa	ad Elevation:	0.0 feet		Lá	ne Equivalen	t Dista	nce (in i	feet)		
F	Road Grade:	0.0%			Auto	os: 32	2.711			
	Left View:	-90.0 degree	s		Medium Truck	(s: 32	2.439			
	Right View:	90.0 degree	s		Heavy Truck	(s: 32	2.466			
FHWA Noise Mode							1			
VehicleType	REMEL	Traffic Flow	Dista		Finite Road	Fres		Barrier Atte		m Atten
Autos:	68.46	-3.60		2.66	-1.20		-4.56		000	0.00
Medium Trucks:	79.45	-19.28		2.72	-1.20		-4.87		000	0.00
Heavy Trucks:	84.25	-15.76		2.71	-1.20		-5.61	0.0	000	0.00
Unmitigated Noise							-			
	Leq Peak Hou			Leq Eve		Night		Ldn		VEL
Autos:	66		54.4		62.7	56		65.2	-	65.
Medium Trucks:	61		50.2		53.8	52		60.7		61.
Heavy Trucks: Vehicle Noise:	70		58.6 70.4		59.5 64.7	60 62		69.1 71.0		69. 71.
					64.7	62	.6	/1.0)	71.
Centerline Distanc	e to Noise Co	ntour (in feet)		70 dF	A 65	dBA	4	0 dBA	55	dBA
			Ldn:	70 aE	43 00	aba g	_	202		ава 43
			Lan: IEL:		43 45	9		202		435
		Cr	LL.		40	y	0	∠10		45

Monday, November 8, 2021

FHWA-R	D-77-108 HIGHW	AY NOI	SE PREDIC	TION MO	DEL (9/1	12/2021)			
Scenario: 2024 Road Name: Berkshire Road Segment: e/o Monito				Project N Job Nur	lame: Ma mber: 13		teway		
SITE SPECIFIC II	NPUT DATA					DDEL IN			
Highway Data			Site Con	ditions (H	lard = 10), Soft = '	15)		
Average Daily Traffic (Adt):	7,887 vehicles				Au	itos: 1	5		
Peak Hour Percentage:	10.00%			dium Truc					
Peak Hour Volume:	789 vehicles		He	avy Truck	s (3+ Axi	les): 1	5		
Vehicle Speed:	45 mph		Vehicle	Mix					
Near/Far Lane Distance:	36 feet		Veh	icleType	Di	ay Eve	ning N	light	Daily
Site Data				Au	itos: 71	7.5% 12	2.9%	9.6%	91.819
Barrier Height:	0.0 feet		М	edium Tru	cks: 84	4.8% 4	1.9% 1	10.3%	2.52%
Barrier Type (0-Wall, 1-Berm):	0.0		1	Heavy Tru	cks: 86	6.5%	2.7% 1	10.8%	5.67%
Centerline Dist. to Barrier:	37.0 feet		Noine C	ource Elev	ationa (in feet)			
Centerline Dist. to Observer:	37.0 feet		Noise 30	Autos:					
Barrier Distance to Observer:	0.0 feet		A da alice	m Trucks:	0.00				
Observer Height (Above Pad):	5.0 feet			m Trucks: /v Trucks:			de Adjus	tment	0.0
Pad Elevation:	0.0 feet		Heat	ly mucks.	0.00	4 0/00	ic Aujus	unioni.	0.0
Road Elevation:	0.0 feet		Lane Eq	uivalent E	Distance	(in feet)			
Road Grade:	0.0%			Autos:	32.71	1			
Left View:	-90.0 degrees		Mediu	m Trucks:	32.43	9			
Right View:	90.0 degrees		Heav	vy Trucks:	32.46	6			
FHWA Noise Model Calculation	s								
VehicleType REMEL	Traffic Flow	Distanc	e Finite	Road	Fresnel	Barri	er Atten	Bern	n Atten
Autos: 68.46	-3.24		2.66	-1.20	-4	.56	0.000)	0.00
Medium Trucks: 79.45	-18.85	:	2.72	-1.20	-4	.87	0.000)	0.00
Heavy Trucks: 84.25	-15.33	1	2.71	-1.20	-5	61	0.000)	0.00
Unmitigated Noise Levels (with	out Topo and ba	arrier at	tenuation)						
VehicleType Leq Peak Ho	ur Leq Day	Leo	q Evening	Leq N	ight	Ldn		CN	IEL
		1.8	63.0		57.0		65.6		66.3
		0.6	54.2		52.7		61.2		61.4
		9.0	60.0		61.2		69.6		69.
Vehicle Noise: 7	2.4 70	0.8	65.1		63.0		71.5		71.
	ontour (in feet)								
Centerline Distance to Noise C									10.4
Centerline Distance to Noise C			70 dBA	65 dE		60 dB		55 c	
Centerline Distance to Noise C	L	dn:	70 dBA 46 48	65 dE	3A 100 104	60 dB	A 215 224	55 0	463 482

	FHWA-RI	0-77-108 HIGH	WAY N	IOISE	PREDIC		IODEL (9/1	2/202	1)		
Road Nam	io: 2024+P ne: Berkshire F nt: e/o Monitor						Name: Ma umber: 13		Gateway		
	SPECIFIC IN	PUT DATA					IOISE MO			5	
Highway Data				4	Site Con	ditions	(Hard = 10), Soft	= 15)		
Average Daily	Traffic (Adt):	7,997 vehicle	es				Au	tos:	15		
Peak Hour	Percentage:	10.00%			Me	dium Tr	ucks (2 Axl	es):	15		
Peak H	lour Volume:	800 vehicle	S		He	avy Tru	cks (3+ Axl	es):	15		
Ve	hicle Speed:	45 mph		h	Vehicle I	Mix					
Near/Far La	ne Distance:	36 feet		-		icleType	Da	av E	vening	Night	Daily
Site Data								.5%	12.9%	9.6%	
Ba	rrier Height:	0.0 feet			M	edium T	rucks: 84	.8%	4.9%	10.3%	2.49%
Barrier Type (0-W		0.0			ŀ	leavy T	rucks: 86	6.5%	2.7%	10.8%	5.59%
Centerline Di	. ,	37.0 feet			Noise Sc	urce Fl	evations (in fee	<i>t</i>)		
Centerline Dist.	to Observer:	37.0 feet		F		Auto			9		
Barrier Distance	to Observer:	0.0 feet			Mediu	m Truck	0.000				
Observer Height (Above Pad):	5.0 feet				v Truck			ade Adj	ustment	0.0
Pa	ad Elevation:	0.0 feet						-			
Roa	ad Elevation:	0.0 feet		1	Lane Eq		Distance		et)		
1	Road Grade:	0.0%				Auto		1			
	Left View:	-90.0 degree	es			m Truck	02.10				
	Right View:	90.0 degree	es		Heav	ry Truck	s: 32.46	6			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite		Fresnel	Ba	arrier Atte	en Ber	m Atten
Autos:	68.46	-3.17		2.6		-1.20		.56	0.0		0.00
Medium Trucks:	79.45	-18.85		2.7	2	-1.20	-4	.87	0.0	00	0.00
Heavy Trucks:	84.25	-15.33		2.7	'1	-1.20	-5	.61	0.0	00	0.00
Unmitigated Noise	e Levels (with	out Topo and	barrier	r atten	nuation)						
	Leg Peak Hou	r Leq Day		Leg E	vening	Leq	Night	L	.dn		VEL
VehicleType					63.1		57.0		65.6		66.
Autos:	. 66		64.8								
Autos: Medium Trucks:	66 62	.1	60.6		54.2		52.7		61.2		
Autos: Medium Trucks: Heavy Trucks:	- 66 62 70	.1 .4	60.6 69.0		54.2 60.0		61.2		69.6	6	69.
Autos: Medium Trucks:	66 62	.1 .4	60.6		54.2					6	69.
Autos: Medium Trucks: Heavy Trucks:	, 66 62 70 72	.1 .4 .4	60.6 69.0 70.8		54.2 60.0 65.2		61.2 63.0		69.6 71.5	5	69. 71.
Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	, 66 62 70 72	.1 .4 .4 ontour (in feet	60.6 69.0 70.8	70 0	54.2 60.0 65.2 dBA		61.2 63.0	60	69.6 71.5 dBA	5	69. 71. dBA
Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	, 66 62 70 72	.1 .4 .4 ontour (in feet	60.6 69.0 70.8	70 0	54.2 60.0 65.2		61.2 63.0	60	69.6 71.5	5	61.4 69.7 71.7 <i>dBA</i> 464 483

	FHWA-RD	-77-108 HIGH	WAY NC	ISE PRE		IODEL (S)/12/20)21)		
Scenario. Road Name. Road Segment.	Berkshire R					t Name: 1 lumber: 1		c Gateway		
SITE S	PECIFIC IN	PUT DATA			I	NOISE N	IODE	L INPUTS	6	
Highway Data				Site C	onditions	(Hard =	10, So	ft = 15)		
Average Daily Ti	raffic (Adt):	8,665 vehicle	es			,	Autos:	15		
Peak Hour P	ercentage:	10.00%			Medium Tr	ucks (2 A	xles):	15		
Peak Ho	ur Volume:	867 vehicle	5		Heavy Tru	cks (3+ A	xles):	15		
Vehi	cle Speed:	45 mph		Vehic	le Mix					
Near/Far Lane	e Distance:	36 feet			ehicleType	•	Dav	Evening	Night	Daily
Site Data							77.5%	12.9%	9.6%	
	er Height:	0.0 feet		-	Medium T	rucks:	84.8%	4.9%	10.3%	
Barrier Type (0-Wa	•	0.0			Heavy 7	rucks:	86.5%	2.7%	10.8%	5.67%
Centerline Dist.		37.0 feet						0		
Centerline Dist. to		37.0 feet		Noise	Source E			et)		
Barrier Distance to	Observer:	0.0 feet			Auto dium Truck		000 297			
Observer Height (A	bove Pad):	5.0 feet						Grade Adji	unternent	
Pad	Elevation:	0.0 feet		п	eavy Truck	S: 8.0	104	Grade Adji	usuneni	. 0.0
Road	Elevation:	0.0 feet		Lane	Equivalen	t Distanc	e (in f	eet)		
Ro	oad Grade:	0.0%			Auto	s: 32.	711			
	Left View:	-90.0 degree	es	Me	dium Truck	s: 32.4	139			
ŀ	Right View:	90.0 degree	es	Н	eavy Truck	s: 32.4	166			
FHWA Noise Model	Calculations	;								
VehicleType	REMEL	Traffic Flow	Distan		ite Road	Fresn	-	Barrier Atte		m Atten
Autos:	68.46	-2.83		2.66	-1.20		-4.56	0.0		0.000
Medium Trucks:	79.45	-18.45		2.72	-1.20		-4.87	0.0		0.000
Heavy Trucks:	84.25	-14.92		2.71	-1.20		-5.61	0.0	00	0.000
Unmitigated Noise I	Levels (witho	out Topo and	barrier a	ttenuatio	n)					
	eq Peak Hou			q Evenin		Night		Ldn		VEL
Autos:	67.		65.2	-	3.4	57.4		66.0		66.6
Medium Trucks:	62.	-	61.0	-	4.6	53.1		61.6		61.8
	70	8	69.4	-	0.4	61.6		70.0		70.1
Heavy Trucks:								71.9		72.1
Vehicle Noise:	72.	8	71.2	6	5.5	63.4		11.5		
		-								
Vehicle Noise:		ntour (in feet)	70 dBA	65	dBA		0 dBA	55	dBA
Vehicle Noise:		ntour (in feet		70 dBA					55	dBA 493 513

	FHWA-RD-7	7-108 HIGHWAY	Y NOISE	PREDIC	TION M	IODEL (9/12/20	021)		
Scenario: 2								ic Gateway	,	
Road Name: E					Job N	umber:	13923			
Road Segment: e	o Monitor St	-								
	CIFIC INPU	JT DATA							5	
Highway Data				Site Cond	litions	(Hard =	10, Sc	oft = 15)		
Average Daily Traf	fic (Adt): 8	,775 vehicles					Autos:	15		
Peak Hour Perc	centage: 10	0.00%		Med	lium Tri	ucks (2)	Axles):	15		
Peak Hour	Volume:	877 vehicles		Hea	avy Tru	cks (3+)	Axles):	15		
Vehicle	e Speed:	45 mph		Vehicle N	lix					
Near/Far Lane D	Distance:	36 feet	F		cleTvpe		Dav	Evening	Night	Dailv
Site Data						Autos:	77.5%	•	9.6%	91.919
	Height:	0.0 feet		Me	dium T	rucks:	84.8%	4.9%	10.3%	2.499
Barrier Type (0-Wall,		0.0		H	leavy Ti	rucks:	86.5%	2.7%	10.8%	5.60%
Centerline Dist. to	,	37.0 feet	F							
Centerline Dist. to O		37.0 feet	4	Noise So				eet)		
Barrier Distance to O		0.0 feet			Auto		000			
Observer Height (Abo		5.0 feet		Mediun			297			
• •	levation:	0.0 feet		Heav	/ Truck	s: 8.	004	Grade Adj	iustment:	0.0
	levation:	0.0 feet		Lane Equ	ivalent	Distan	ce (in i	feet)		
		0.0%	F		Auto		711	,		
		90.0 degrees		Mediun	1 Truck	s: 32.	439			
Rig		90.0 degrees		Heav	Y Truck	s: 32.	466			
FHWA Noise Model Ca										
			istance	Finite		Fresr		Barrier Atte		m Atten
Autos:	68.46	-2.77	2.6	-	-1.20		-4.56		000	0.00
Medium Trucks:	79.45	-18.45	2.7	-	-1.20		-4.87		000	0.00
Heavy Trucks:	84.25	-14.92	2.7	1	-1.20		-5.61	0.0	000	0.00
Unmitigated Noise Le				<u> </u>						
,, ,	Peak Hour	Leq Day		vening	Leq	Night		Ldn		VEL
Autos:	67.2	65.3		63.5		57.4		66.1		66.
Medium Trucks:	62.5	61.0		54.6		53.		61.6		61.
Heavy Trucks:	70.8	69.4		60.4		61.0		70.0		70.
Vehicle Noise:	72.8	71.3		65.6		63.4	ł	71.9	9	72.
Centerline Distance to	Noise Cont	our (in feet)	70	10.4		(5.4				
				dBA	65	dBA		60 dBA		dBA
		Ldn: CNEL:		49		106		229		49
				51		111		239		515

Monday, November 8, 2021

	FHWA-RD	-77-108 HIGH\	VAY NO	SE PRE	DICTION N	ODEL (9	/12/20	21)		
Scenario: 2 Road Name: E Road Segment: e	Berkshire R					Name: N umber: 1		c Gateway		
	CIFIC IN	PUT DATA						LINPUTS	6	
Highway Data				Site C	Conditions	(Hard = 1	10, So	ft = 15)		
Average Daily Traf	fic (Adt):	11,771 vehicle	s				utos:	15		
Peak Hour Per	centage:	10.00%			Medium Tr		,	15		
Peak Hour		1,177 vehicles			Heavy Tru	cks (3+ A	xles):	15		
	e Speed:	45 mph		Vehic	le Mix					
Near/Far Lane D	Distance:	36 feet		1	/ehicleType		Dav	Evening	Night	Daily
Site Data							77.5%	12.9%	9.6%	91.81%
Barrior	Heiaht:	0.0 feet			Medium T	rucks: 8	34.8%	4.9%	10.3%	2.52%
Barrier Type (0-Wall,		0.0			Heavy T	rucks: 8	36.5%	2.7%	10.8%	5.67%
Centerline Dist. to	,	37.0 feet		Main	0		(i K-	- 41		
Centerline Dist. to O	bserver:	37.0 feet		NOISE	Source El Auto			et)		
Barrier Distance to O	bserver:	0.0 feet				. 0.0				
Observer Height (Abo	ve Pad):	5.0 feet			dium Truck eavv Truck			Grade Adj	ustment	0.0
Pad E	levation:	0.0 feet		п	eavy muck	5. 0.0	04	Orade Auj	usunoni.	0.0
Road E	levation:	0.0 feet		Lane	Equivalent	Distanc	e (in fe	eet)		
Road	d Grade:	0.0%			Auto	s: 32.7	'11			
L	eft View:	-90.0 degree	s	Me	dium Truck	s: 32.4	39			
Rig	ght View:	90.0 degree	S	н	eavy Truck	s: 32.4	66			
FHWA Noise Model Ca	alculations	5		1						
VehicleType F	REMEL	Traffic Flow	Distand	e Fii	nite Road	Fresne	el L	Barrier Atte	en Ben	m Atten
Autos:	68.46	-1.50		2.66	-1.20	-	4.56	0.0	00	0.000
Medium Trucks:										
	79.45	-17.12		2.72	-1.20		4.87	0.0		
Heavy Trucks:	79.45 84.25	-17.12 -13.59		2.72 2.71	-1.20 -1.20		4.87 5.61	0.0 0.0		
Heavy Trucks:	84.25	-13.59		2.71	-1.20					
Heavy Trucks: Unmitigated Noise Le VehicleType Leq	84.25 vels (witho Peak Hou	-13.59 Dut Topo and L r Leq Day	arrier at	2.71 tenuatio q Evenin	-1.20 n) g Leq	Night	5.61	0.0	00 <i>CI</i>	0.00
Heavy Trucks: Unmitigated Noise Lee VehicleType Leq Autos:	84.25 vels (without peak Hout 68	-13.59 out Topo and L r Leq Day .4 6	6.5	2.71 tenuatio g Evenin 6	-1.20 n) g Leq 4.8	Night 58.7	5.61	0.0 Ldn 67.3	00 <i>CI</i>	0.00
Heavy Trucks: Unmitigated Noise Le VehicleType Leq Autos: Medium Trucks:	84.25 vels (without Peak Hout 68 68	-13.59	6.5	2.71 tenuatio q Evenin 6 5	-1.20 n) g Leq 4.8 6.0	Night 58.7 54.4	5.61	0.0 Ldn 67.3 62.9	00	0.00 VEL 67.9 63.1
Heavy Trucks: Unmitigated Noise Lei VehicleType Lei Autos: Medium Trucks: Heavy Trucks:	84.25 vels (witho Peak Hou 68 63 72	-13.59 out Topo and L r Leq Day 4 6 8 6 2 7	6.5 62.3 70.7	2.71 tenuatio 7 Evenin 6 5 6	-1.20 n) g Leq 4.8 6.0 1.7	Night 58.7 54.4 63.0	5.61	0.0 Ldn 67.3 62.9 71.3	00	0.00 <i>IEL</i> 67.9 63.7 71.4
Heavy Trucks: Unmitigated Noise Le VehicleType Leq Autos: Medium Trucks:	84.25 vels (without Peak Hout 68 68	-13.59 out Topo and L r Leq Day 4 6 8 6 2 7	6.5	2.71 tenuatio 7 Evenin 6 5 6	-1.20 n) g Leq 4.8 6.0	Night 58.7 54.4	5.61	0.0 Ldn 67.3 62.9	00	0.00 <i>IEL</i> 67.9 63.7 71.4
Heavy Trucks: Unmitigated Noise Lei VehicleType Lei Autos: Medium Trucks: Heavy Trucks:	84.25 vels (without Peak Hout 68 63 72 74	-13.59 but Topo and B r Leq Day 4 66 8 66 2 7 1 7	2.3 2.3 2.6 2.6	2.71 tenuatio g Evenin 6 5 6 6	-1.20 n) g Leq 4.8 6.0 1.7 6.9	Night 58.7 54.4 63.0 64.8	.5.61	0.0 Ldn 67.3 62.9 71.3 73.2	00 C/	0.000
Heavy Trucks: Unmitigated Noise Lee VehicleType Lee Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	84.25 vels (without Peak Hout 68 63 72 74	-13.59 <i>put Topo and B</i> <i>r</i> Leq Day 4 6 8 6 2 7 1 7 <i>ntour (in feet)</i>	26.5 22.3 20.7 2.6	2.71 tenuatio 7 Evenin, 6 5 6 6 6 70 dBA	-1.20 n) g Leq 4.8 6.0 1.7 6.9 65	Night 58.7 54.4 63.0 64.8 dBA	.5.61	0.0 Ldn 67.3 62.9 71.3 73.2 0 dBA	00 C/	0.000 VEL 67.9 63.7 71.4 73.9 dBA
Heavy Trucks: Unmitigated Noise Lee VehicleType Lee Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	84.25 vels (without Peak Hout 68 63 72 74	-13.59 but Topo and t r Leq Day 4 6 8 6 2 7 1 7 ntour (in feet)	2.3 2.3 2.6 2.6	2.71 tenuatio g Evenin 6 5 6 6 6 70 dBA	-1.20 n) g Leq 4.8 6.0 1.7 6.9	Night 58.7 54.4 63.0 64.8	.5.61	0.0 Ldn 67.3 62.9 71.3 73.2	00 C/	67.9 63.7 71.4 73.9

F	HWA-RD	-77-108 HIGH	WAY NO	ISE PREDIO	CTION MO	DDEL (9/12/	(2021)		
Scenario: 20)42+P				Project I	Vame: Maje	stic Gateway		
Road Name: Be	erkshire R	d.			Job Nu	mber: 1392	3		
Road Segment: e/o	o Monitor	St.							
	CIFIC IN	PUT DATA					EL INPUTS	6	
Highway Data				Site Cor	ditions (Hard = 10, 3	Soft = 15)		
Average Daily Traffic	c (Adt):	11,881 vehicle	s			Auto	s: 15		
Peak Hour Perce	entage:	10.00%		Me	edium Tru	cks (2 Axles	s): 15		
Peak Hour V	olume:	1,188 vehicles	5	He	eavy Truci	ks (3+ Axles	s): 15		
Vehicle	· /· · · ·	45 mph		Vehicle	Mix				
Near/Far Lane Di	stance:	36 feet			icleType	Day	Evening	Night	Daily
Site Data					A	utos: 77.5	% 12.9%	9.6%	91.899
Barrier H	Heiaht:	0.0 feet		M	ledium Tru	icks: 84.8	4.9%	10.3%	2.50%
Barrier Type (0-Wall, 1-	-Berm):	0.0			Heavy Tru	icks: 86.5	6% 2.7%	10.8%	5.62%
Centerline Dist. to	Barrier:	37.0 feet		Noise S	ource Ele	vations (in	feet)		
Centerline Dist. to Ob	server:	37.0 feet			Autos				
Barrier Distance to Ob	server:	0.0 feet		Mediu	m Trucks				
Observer Height (Abov	,	5.0 feet			vy Trucks		Grade Adj	ustment:	0.0
Pad Ele		0.0 feet			·				
Road Ele		0.0 feet		Lane Eq		Distance (ii	n teet)		
	Grade:	0.0%			Autos				
	ft View:	-90.0 degree			m Trucks	02.100			
Righ	nt View:	90.0 degree	es.	Hea	vy Trucks	32.466			
FHWA Noise Model Cal	lculations								
VehicleType RE	EMEL	Traffic Flow	Distand	e Finite	Road	Fresnel	Barrier Atte	en Berr	n Atten
Autos:	68.46								
		-1.46		2.66	-1.20	-4.5			
Medium Trucks:	79.45	-17.12		2.72	-1.20	-4.8	7 0.0	00	0.00
							7 0.0	00	0.00
Medium Trucks:	79.45 84.25	-17.12 -13.59		2.72 2.71	-1.20	-4.8	7 0.0	00	0.00
Medium Trucks: Heavy Trucks: Unmitigated Noise Leve	79.45 84.25	-17.12 -13.59 ut Topo and	barrier at	2.72 2.71	-1.20	-4.8 -5.6	7 0.0	00	0.00
Medium Trucks: Heavy Trucks: Unmitigated Noise Leve VehicleType Leq I Autos:	79.45 84.25 els (witho Peak Hour 68.	-17.12 -13.59 ut Topo and Leq Day 5	barrier at Le	2.72 2.71 tenuation) q Evening 64.8	-1.20 -1.20 Leg N	-4.8 -5.6 light	7 0.0 1 0.0 Ldn 67.4	00 00 <i>CN</i>	0.00 0.00 IEL 68.
Medium Trucks: Heavy Trucks: Unmitigated Noise Lev VehicleType Leq I Autos: Medium Trucks:	79.45 84.25 els (witho Peak Hour 68. 63.	-17.12 -13.59 ut Topo and Leq Day 5 8	barrier at Le 66.6 62.3	2.72 2.71 tenuation) q Evening 64.8 56.0	-1.20 -1.20 Leq N	-4.8 -5.6 light 58.7 54.4	7 0.0 1 0.0 <u>Ldn</u> 67.4 62.9	00 00 <i>CN</i>	0.00 0.00 IEL 68. 63.
Medium Trucks: Heavy Trucks: Unmitigated Noise Leve VehicleType Leg I Autos: Medium Trucks: Heavy Trucks:	79.45 84.25 els (witho Peak Hour 68. 63. 72.	-17.12 -13.59 ut Topo and Leq Day 5 8 2	barrier at Le 66.6 62.3 70.7	2.72 2.71 tenuation) q Evening 64.8 56.0 61.7	-1.20 -1.20 Leq N	-4.8 -5.6 light 58.7 54.4 63.0	7 0.0 1 0.0 <u>Ldn</u> 67.4 62.9 71.3	00 00 <i>CN</i>	0.00 0.00 IEL 68. 63. 71.
Medium Trucks: Heavy Trucks: Unmitigated Noise Lev VehicleType Leq I Autos: Medium Trucks:	79.45 84.25 els (witho Peak Hour 68. 63.	-17.12 -13.59 ut Topo and Leq Day 5 8 2	barrier at Le 66.6 62.3	2.72 2.71 tenuation) q Evening 64.8 56.0	-1.20 -1.20 Leq N	-4.8 -5.6 light 58.7 54.4	7 0.0 1 0.0 <u>Ldn</u> 67.4 62.9	00 00 <i>CN</i>	0.00 0.00 IEL 68. 63. 71.
Medium Trucks: Heavy Trucks: Unmitigated Noise Leve VehicleType Leg I Autos: Medium Trucks: Heavy Trucks:	79.45 84.25 els (witho Peak Hour 68. 63. 72. 74.	-17.12 -13.59 ut Topo and Leq Day 5 8 2 1	barrier at Le 66.6 62.3 70.7 72.6	2.72 2.71 tenuation) q Evening 64.8 56.0 61.7	-1.20 -1.20 Leq N	-4.8 -5.6 light 58.7 54.4 63.0	7 0.0 1 0.0 <u>Ldn</u> 67.4 62.9 71.3	00 00 <i>CN</i>	0.00 0.00 IEL 68. 63. 71.
Medium Trucks: Heavy Trucks: Unmitigated Noise Leve VehicleType Leq I Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	79.45 84.25 els (witho Peak Hour 68. 63. 72. 74.	-17.12 -13.59 ut Topo and Leq Day 5 8 2 1	barrier at Le 66.6 62.3 70.7 72.6	2.72 2.71 tenuation) q Evening 64.8 56.0 61.7 66.9 70 dBA	-1.20 -1.20 Leq N	-4.8 -5.6 light 58.7 54.4 63.0 64.8	7 0.0 1 0.0 <u>Ldn</u> 67.4 62.9 71.3	00 00 <i>CN</i>	0.00 0.00 <u>IEL</u> 68. 63. 71. 73.
Medium Trucks: Heavy Trucks: Unmitigated Noise Leve VehicleType Leq I Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	79.45 84.25 els (witho Peak Hour 68. 63. 72. 74.	-17.12 -13.59 ut Topo and Leq Day 5 8 2 1 ntour (in feet)	barrier at Le 66.6 62.3 70.7 72.6	2.72 2.71 tenuation) q Evening 64.8 56.0 61.7 66.9	-1.20 -1.20	-4.8 -5.6 light 58.7 54.4 63.0 64.8	Ldn 67.4 67.4 67.3 71.3 73.2	00 00 CA	68. 63. 71. 73.

FHWA-RD-77-108 HIGHWAY NO	SE PREDICTION MODEL (9/12/2021)
Scenario: E Road Name: Hosking Av. Road Segment: w/o Akers Rd.	Project Name: Majestic Gateway Job Number: 13923
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS
Highway Data	Site Conditions (Hard = 10, Soft = 15)
Average Daily Traffic (Adt): 9,458 vehicles	Autos: 15
Peak Hour Percentage: 10.00%	Medium Trucks (2 Axles): 15
Peak Hour Volume: 946 vehicles	Heavy Trucks (3+ Axles): 15
Vehicle Speed: 50 mph	Vehicle Mix
Near/Far Lane Distance: 52 feet	VehicleType Day Evening Night Daily
Site Data	Autos: 77.5% 12.9% 9.6% 91.81%
Barrier Height: 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 2.52%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 5.67%
Centerline Dist. to Barrier: 55.0 feet	Noise Source Elevations (in feet)
Centerline Dist. to Observer: 55.0 feet	Autos: 0.000
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 2.297
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.004 Grade Adjustment: 0.0
Pad Elevation: 0.0 feet	Heavy Hucks. 8.004 Grade Adjustment. 0.0
Road Elevation: 0.0 feet	Lane Equivalent Distance (in feet)
Road Grade: 0.0%	Autos: 48.724
Left View: -90.0 degrees	Medium Trucks: 48.542
Right View: 90.0 degrees	Heavy Trucks: 48.559
FHWA Noise Model Calculations	
VehicleType REMEL Traffic Flow Distance	
	0.07 -1.20 -4.67 0.000 0.000
	0.09 -1.20 -4.87 0.000 0.000
Heavy Trucks: 85.38 -15.00	0.09 -1.20 -5.38 0.000 0.000
Unmitigated Noise Levels (without Topo and barrier at	
	g Evening Leq Night Ldn CNEL
Autos: 66.2 64.3	62.5 56.4 65.1 65.7
Medium Trucks: 61.4 59.9	53.5 52.0 60.4 60.6
Heavy Trucks: 69.3 67.8	58.8 60.1 68.4 68.5
Vehicle Noise: 71.4 69.9	64.4 62.1 70.5 70.8
Centerline Distance to Noise Contour (in feet)	70 dBA 65 dBA 60 dBA 55 dBA
Ldn:	59 128 276 595
CNEL:	59 128 276 595 62 134 288 621
CNEL.	02 134 288 621

	FHWA-RD	-77-108 HIGH	WAY	NOISE P	REDICTIO	ON MC	DEL (9/12/20	021)		
Scenari	o: E+P				Pr	oject N	lame: I	Majest	ic Gateway	/	
Road Nam	e: Hosking Av.					ob Nu	mber: '	13923			
Road Segmer	nt: w/o Akers R	td.									
	SPECIFIC IN	PUT DATA			-				L INPUT	S	
Highway Data				Si	e Condit	ons (F	lard =	10, So	oft = 15)		
Average Daily	Traffic (Adt):	10,774 vehicle	s					Autos:	15		
Peak Hour	Percentage:	10.00%			Mediu	m Truc	:ks (2 A	(xles)	15		
Peak H	our Volume:	1,077 vehicles			Heavy	Truck	:s (3+ A	(xles)	15		
Ve	hicle Speed:	50 mph		Ve	hicle Mix						
Near/Far La	ne Distance:	52 feet			Vehicle			Dav	Evening	Night	Dailv
Site Data						11.		77.5%	•	9.6%	
Bar	rier Height:	0.0 feet			Medi	ım Tru	cks:	84.8%	4.9%	10.3%	2.219
Barrier Type (0-W		0.0			Hea	vy Tru	cks:	86.5%	2.7%	10.8%	4.989
Centerline Dis	. ,	55.0 feet		-							
Centerline Dist.		55.0 feet		No	ise Sour				eet)		
Barrier Distance		0.0 feet				Autos:		000			
Observer Height (5.0 feet			Medium 1			297			
	d Elevation:	0.0 feet			Heavy 1	rucks:	8.0	004	Grade Ad	ustment:	0.0
	d Elevation:	0.0 feet		La	ne Equiv	alent L	Distand	e (in f	feet)		
F	Road Grade:	0.0%				Autos:	48.	724			
	Left View:	-90.0 degree	s		Medium 1	rucks:	48.	542			
	Right View:	90.0 degree	s		Heavy 1	rucks:	48.	559			
FHWA Noise Mode	l Calculations	i									
VehicleType	REMEL	Traffic Flow	Dist	tance	Finite Ro	ad	Fresn	-	Barrier Att	en Ber	m Atten
Autos:	70.20	-2.30		0.07		1.20		-4.67		000	0.00
Medium Trucks:	81.00	-18.52		0.09		1.20		-4.87		000	0.00
Heavy Trucks:	85.38	-15.00		0.09	-	1.20		-5.38	0.0	000	0.00
Unmitigated Noise											
	Leq Peak Hou			Leq Eve		Leq N	•		Ldn		VEL
Autos:	66.	-	54.9		63.1		57.1		65.		66
Medium Trucks:	61.		59.9		53.5		52.0		60.4		60
Heavy Trucks:	69.		67.8		58.8		60.1		68.4		68
Vehicle Noise:	71.		70.1		64.8		62.2		70.	(71.
Centerline Distanc	e to Noise Co	ntour (in feet)		70 dB		65 dl	24		0 dBA		dBA
			Ldn:	70 d B		oo di		6			
			Lan: IEL:		61 64		132 138		284 297		61: 64

Monday, November 8, 2021

FHWA-	RD-77-108 HIGH	IWAY NO	ISE PR		ODEL (9/	12/2021)			
Scenario: 2024 Road Name: Hosking / Road Segment: w/o Akers					Name: M umber: 13	ajestic Ga 3923	teway		
SITE SPECIFIC	NPUT DATA					ODEL IN			
Highway Data			Site	Conditions	(Hard = 1	0, Soft = 1	15)		
Average Daily Traffic (Adt):	11,185 vehicl	es				utos: 15			
Peak Hour Percentage:	10.00%			Medium Tri		,			
Peak Hour Volume:	, .	s		Heavy True	cks (3+ Ax	(les): 15	5		
Vehicle Speed:	50 mph		Veh	icle Mix					
Near/Far Lane Distance:	52 feet			VehicleType	D	ay Eve	ning Ni	ight	Daily
Site Data					Autos: 7	7.5% 12	.9%	9.6%	91.819
Barrier Height:	0.0 feet			Medium Ti	rucks: 8	4.8% 4	.9% 1	0.3%	2.529
Barrier Type (0-Wall, 1-Berm).				Heavy Ti	rucks: 8	6.5% 2	2.7% 1	0.8%	5.67%
Centerline Dist. to Barrier.			Noi	se Source El	ovetiene	(in fact)			
Centerline Dist. to Observer.	55.0 feet		NOIS	Auto:		. /			
Barrier Distance to Observer.	0.0 feet			Auto: Medium Truck:					
Observer Height (Above Pad).	5.0 feet						le Adjust	ment i	0.0
Pad Elevation:	0.0 feet			Heavy Truck			ic Aujusi	ment.	0.0
Road Elevation:	0.0 feet		Lan	e Equivalent	Distance	(in feet)			
Road Grade:	0.0%			Auto	s: 48.72	24			
Left View:	-90.0 degre	es	N	ledium Truck	s: 48.54	42			
Right View:	90.0 degre	es		Heavy Truck	s: 48.5	59			
FHWA Noise Model Calculatio	ns								
VehicleType REMEL	Traffic Flow	Distan	ce F	inite Road	Fresne	l Barrie	er Atten	Berm	n Atten
Autos: 70.2	0 -2.18		0.07	-1.20	-4	4.67	0.000		0.00
Medium Trucks: 81.0			0.09	-1.20		4.87	0.000		0.00
Heavy Trucks: 85.3	8 -14.27		0.09	-1.20	-4	5.38	0.000		0.00
Unmitigated Noise Levels (wi	hout Topo and	barrier a	ttenuat	ion)				-	
VehicleType Leq Peak H			q Eveni	•	Night	Ldn		CNE	
	6.9	65.0		63.2	57.2		65.8		66.4
	52.1	60.6		54.2	52.7		61.1		61.
	70.0	68.6		59.5	60.8		69.1		69.3
Vehicle Noise:	72.2	70.6		65.1	62.8		71.2		71.
Centerline Distance to Noise	Contour (in fee)						-	
			70 dBA		dBA	60 dB,		55 d	
		Ldn:		67	143		309		665
		NEL:		69	150		322		694

	FHWA-RI	D-77-108 HIGH	WAY NC	ISE PF	REDICTIO	ON MOI	DEL (9/1	12/202	21)		
Scenar	rio: 2024+P				Pr	oject Na	ame: Ma	ajestic	Gateway		
Road Nan	ne: Hosking Av	<i>.</i>			J	lob Nun	nber: 13	923			
Road Segme	nt: w/o Akers I	Rd.									
	SPECIFIC IN	IPUT DATA							INPUT	5	
Highway Data				Sit	e Conditi	ions (H	ard = 10), Sofi	t = 15)		
Average Daily	Traffic (Adt):	12,501 vehicle	es				Au	itos:	15		
Peak Hour	Percentage:	10.00%			Mediu	m Truck	ks (2 Ax	les):	15		
Peak I	lour Volume:	1,250 vehicles	6		Heavy	Trucks	6 (3+ Ax	les):	15		
Ve	ehicle Speed:	50 mph		Vo	nicle Mix						
Near/Far La	ane Distance:	52 feet		vei	Vehicle			ay I	Evening	Night	Daily
Site Data					venicie	Aut		ay 1 7.5%	12.9%	9.6%	
		0.0 feet			Mediu	ım Truc		1.8%	4.9%	10.3%	2.25%
ва Barrier Type (0-V	rrier Height:	0.0 teet 0.0			Hea	vy Truc	:ks: 86	3.5%	2.7%	10.8%	5.07%
	ist, to Barrier:	55.0 feet									
Centerline Dist.		55.0 feet		No	ise Sour				t)		
Barrier Distance		0.0 feet				Autos:	0.00				
Observer Height		5.0 feet		1	Medium T		2.29				
•	ad Elevation:	0.0 feet			Heavy T	rucks:	8.00	4 0	Grade Adj	ustment:	0.0
-	ad Elevation:	0.0 feet		Lai	ne Equiva	alent D	istance	(in fe	et)		
	Road Grade:	0.0%				Autos:	48.72	4	,		
	Left View:	-90.0 degree	24		Medium T	rucks:	48.54	2			
	Right View:	90.0 degree			Heavy T	rucks:	48.55	9			
FHWA Noise Mod	el Calculation	s		_							
VehicleType	REMEL	Traffic Flow	Distan	се	Finite Ro	ad	Fresnel	В	arrier Atte	en Ber	m Atten
Autos:	70.20	-1.66		0.07	-1	1.20	-4	.67	0.0	00	0.00
Medium Trucks:	81.00	-17.80		0.09	-1	1.20	-4	.87	0.0	00	0.00
Heavy Trucks:	85.38	-14.27		0.09	-1	1.20	-5	.38	0.0	00	0.00
Unmitigated Nois											
		Ir Leg Day	Le	eq Ever	ning	Leq Nig		L	_dn		VEL
VehicleType	Leq Peak Hou										66.
Autos:	. 67	.4	65.5		63.7		57.7		66.3		
Autos: Medium Trucks:	67 62	.4 2.1	60.6		54.2		52.7		61.1		
Autos: Medium Trucks: Heavy Trucks:	67 62 70	7.4 2.1 0.0	60.6 68.6		54.2 59.5		52.7 60.8		61.1 69.1		69.3
Autos: Medium Trucks:	67 62 70	7.4 2.1 0.0	60.6		54.2		52.7		61.1		69.
Autos: Medium Trucks: Heavy Trucks:	67 62 70 72	2.4 2.1 0.0 2.3	60.6 68.6 70.8		54.2 59.5 65.5		52.7 60.8 62.9		61.1 69.1 71.4	 	69. 71.
Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	67 62 70 72	2.4 2.1 0.0 2.3 2.3 2.3	60.6 68.6 70.8	70 dB/	54.2 59.5 65.5	65 dB	52.7 60.8 62.9	60	61.1 69.1 71.4 dBA	 	69.3 71.3 dBA
Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	67 62 70 72	.4 2.1 0.0 2.3 ontour (in feet)	60.6 68.6 70.8	70 dB/	54.2 59.5 65.5	65 dB	52.7 60.8 62.9	60	61.1 69.1 71.4	 	61.4 69.3 71.7 dBA 681 712

FHWA-RD-77-108 F	IIGHWAY NOI	SE PREDIC	TION MODE	_ (9/12/2	:021)	
Scenario: 2029 Road Name: Hosking Av. Road Segment: w/o Akers Rd.			Project Nam Job Numbe			
SITE SPECIFIC INPUT DA	TA		NOISI	MODE	EL INPUTS	1
Highway Data		Site Con	ditions (Hard	= 10, S	oft = 15)	
Average Daily Traffic (Adt): 12,521 ve	ehicles			Autos	15	
Peak Hour Percentage: 10.00%		Me	dium Trucks (2 Axles)	: 15	
Peak Hour Volume: 1,252 ve	nicles	He	avy Trucks (3	+ Axles)	: 15	
Vehicle Speed: 50 mp	h	Vehicle I	Mix			
Near/Far Lane Distance: 52 fee	ŧ		icleType	Dav	Evening	Night Daily
Site Data		Ven	Autos		•	9.6% 91.81%
	-4	M	edium Trucks			10.3% 2.52%
	et	1	leavy Trucks			10.8% 5.67%
Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 55.0 fe	ot					
Centerline Dist. to Observer: 55.0 fe		Noise Sc	ource Elevati		eet)	
Barrier Distance to Observer: 0.0 fe			Autos:	0.000		
Observer Height (Above Pad): 5.0 fe			m Trucks:	2.297		
Pad Elevation: 0.0 fe		Heav	y Trucks:	8.004	Grade Adju	istment: 0.0
Road Elevation: 0.0 fe		Lane Eq	uivalent Dista	nce (in	feet)	
Road Grade: 0.0%	01			8.724		
Left View: -90.0 de	arees	Mediu	m Trucks:	8 542		
Right View: 90.0 de	0	Heav	y Trucks:	8.559		
FHWA Noise Model Calculations						
VehicleType REMEL Traffic Fl	ow Distanc	e Finite	Road Fre	snel	Barrier Atte	n Berm Atten
Autos: 70.20 -	1.69	0.07	-1.20	-4.67	0.0	0.000
Medium Trucks: 81.00 -1	7.31	0.09	-1.20	-4.87	0.0	0.000
Heavy Trucks: 85.38 -1	3.78	0.09	-1.20	-5.38	0.0	0.000
Unmitigated Noise Levels (without Topo	and barrier at	tenuation)				
		q Evening	Leq Night		Ldn	CNEL
Autos: 67.4	65.5	63.7	-	7.7	66.3	66.9
		54.7	5	3.2	61.6	61.9
Medium Trucks: 62.6	61.1	• ····	-			
Heavy Trucks: 70.5	69.1	60.0	6	1.3	69.6	
		• ····	6	1.3 3.3	69.6 71.7	
Heavy Trucks: 70.5	69.1 71.1 feet)	60.0 65.6	6	3.3	71.7	72.0
Heavy Trucks: 70.5 Vehicle Noise: 72.7	69.1 71.1 feet)	60.0 65.6 70 dBA	6 6 65 dBA	3.3	71.7 60 dBA	72.0 55 dBA
Heavy Trucks: 70.5 Vehicle Noise: 72.7	69.1 71.1 feet)	60.0 65.6	6 6 65 dBA	3.3	71.7	72.0

	FHWA-RD-77	-108 HIGHWAY	' NOISE	PREDIC	TION M	ODEL (S	9/12/20)21)		
Scenario:								c Gateway	,	
Road Name:	Hosking Av.				Job N	umber: 1	13923			
Road Segment:	w/o Akers Rd.									
	ECIFIC INPU	T DATA						LINPUTS	5	
Highway Data				Site Cond	ditions	(Hard =	10, So	ft = 15)		
Average Daily Tra	ffic (Adt): 13,	837 vehicles				,	Autos:	15		
Peak Hour Pe	rcentage: 10	.00%		Med	dium Tru	ucks (2 A	(xles):	15		
Peak Hou	Volume: 1,3	84 vehicles		Hea	avy Truc	cks (3+ A	(xles)	15		
Vehic	le Speed:	50 mph	F	Vehicle N	lix					
Near/Far Lane	Distance:	52 feet	F		cleTvpe		Dav	Evening	Night	Dailv
Site Data					A	Autos:	77.5%	12.9%	9.6%	92.599
Barrie	r Height:	0.0 feet		Me	dium Ti	ucks:	84.8%	4.9%	10.3%	2.289
Barrier Type (0-Wall,	•	0.0		H	leavy Ti	ucks:	86.5%	2.7%	10.8%	5.139
Centerline Dist. t	,	55.0 feet	F							
Centerline Dist. to 0		55.0 feet	-	Noise So				et)		
Barrier Distance to		0.0 feet			Auto		000			
Observer Height (Ab	ove Pad):	5.0 feet			n Truck		297	Grade Adj	iuntmont	
Pad I	Elevation:	0.0 feet		Heav	y Truck	5. 8.0	004	Grade Auj	usimeni	0.0
Road I	Elevation:	0.0 feet		Lane Equ	iivalent	Distanc	e (in f	ieet)		
Roa	ad Grade: 0	.0%			Autos	s: 48.	724			
1	eft View: -9	0.0 degrees		Mediun	n Truck	s: 48.	542			
Ri	ght View:	0.0 degrees		Heav	y Truck:	s: 48.	559			
FHWA Noise Model C										
			stance	Finite		Fresn		Barrier Atte		m Atten
Autos:	70.20	-1.22	0.0		-1.20		-4.67	0.0		0.00
Medium Trucks:	81.00	-17.31	0.0		-1.20		-4.87		000	0.00
Heavy Trucks:	85.38	-13.78	0.0	9	-1.20		-5.38	0.0	000	0.00
Unmitigated Noise Le				í "						
	q Peak Hour	Leq Day	Leq E	vening	Leq	Night		Ldn		VEL
Autos:	67.8	66.0		64.2		58.1		66.8		67.
Medium Trucks:	62.6	61.1		54.7		53.2		61.6		61
Heavy Trucks:	70.5	69.1		60.0		61.3		69.6		69
Vehicle Noise:	72.8	71.2		65.9		63.4		71.9	9	72.
Centerline Distance t	o Noise Conto	our (in feet)				10.4	-			(8.4
			70	dBA	65	dBA	6	0 dBA		dBA
		Ldn:		73		158		340		73
		CNEL		77		165		355		766

Monday, November 8, 2021

	FHWA-RD	-77-108 HIGH\	NAY NO	DISE	PREDIC	TION MO	ODEL (9)	12/20)21)		
Scenario: 2 Road Name: H Road Segment: N	Hosking Av.						Name: M Imber: 13		c Gateway		
	ECIFIC IN	PUT DATA							L INPUTS	3	
Highway Data				S	ite Con	ditions (Hard = 1	0, So	ft = 15)		
Average Daily Trai	ffic (Adt):	18,135 vehicle	s				A	utos:	15		
Peak Hour Per	centage:	10.00%			Med	dium Tru	cks (2 A)	(les):	15		
Peak Hour	Volume:	1,814 vehicles			Hea	avy Truci	ks (3+ A)	(les):	15		
Vehicle	e Speed:	50 mph		v	ehicle N	Aix					
Near/Far Lane L	Distance:	52 feet		Ľ		cleType	1	av	Evening	Night	Daily
Site Data								7.5%	•	9.6%	
Barrie	· Height:	0.0 feet			Me	edium Tru	ucks: 8	4.8%	4.9%	10.3%	2.52
Barrier Type (0-Wall,		0.0			H	leavy Tru	ucks: 8	6.5%	2.7%	10.8%	5.67
Centerline Dist. to	,	55.0 feet			laiaa Ca	urce Ele	votiona	lin fo	of)		
Centerline Dist. to C	bserver:	55.0 feet		N	oise so	Autos			el)		
Barrier Distance to C	bserver:	0.0 feet			Modium	n Trucks	. 0.01				
Observer Height (Abo	ve Pad):	5.0 feet							Grade Adj	ustment	0.0
Pad E	levation:	0.0 feet			Heav	y Trucks	: 8.00	J4	Grade Auj	usuneni	0.0
Road E	levation:	0.0 feet		L	ane Equ	ivalent	Distance	e (in f	eet)		
Roa	d Grade:	0.0%				Autos	: 48.7	24			
L	eft View:	-90.0 degree	s		Mediur	n Trucks	: 48.5	42			
Rig	ght View:	90.0 degree	s		Heav	y Trucks	48.5	59			
FHWA Noise Model C	alculations	:									
VehicleType F	REMEL	Traffic Flow	Distar	nce	Finite	Road	Fresne	1	Barrier Atte	en Ber	m Atte
Autos:	70.20	-0.08		0.07		-1.20		4.67	0.0	00	0.0
Medium Trucks:	81.00	-15.70		0.09		-1.20		4.87	0.0	00	0.0
Heavy Trucks:	85.38	-12.17		0.09		-1.20	-	5.38	0.0	00	0.0
Unmitigated Noise Le											
	y Peak Hou			eq Ev		Leq N	•		Ldn		NEL
Autos:	69.		57.1		65.3		59.3		67.9		6
Medium Trucks:	64.	- '	62.7		56.3		54.8		63.2		63
Heavy Trucks:	72.		0.7		61.6		62.9		71.2		71
Vehicle Noise:	74.		2.7		67.2		64.9		73.3		73
Centerline Distance to	o Noise Co	ntour (in feet)									
				70 d		65 d		6	0 dBA	55	dBA
			.dn:		92		198		426		91
		CN	EL:		96		206		445		95

	FHWA-RD	-77-108 HIGH	WAY NO	ISE PREDI	CTION M	ODEL (9/	12/2021)		
Road Nam	io: 2042+P e: Hosking Av nt: w/o Akers F					Name: M umber: 13	ajestic Gatewa 3923	iy	
SITE	SPECIFIC IN	PUT DATA			N	OISE M	ODEL INPUT	s	
Highway Data				Site Co.	nditions	(Hard = 1	0, Soft = 15)		
Average Daily	Traffic (Adt):	19,451 vehicle	s			A	utos: 15		
Peak Hour	Percentage:	10.00%		М	edium Tru	ucks (2 Ax	(les): 15		
Peak H	our Volume:	1,945 vehicles		н	eavy Truc	cks (3+ A)	(les): 15		
Ve	hicle Speed:	50 mph		Vehicle	Mise		-		
Near/Far La	ne Distance:	52 feet			hicleType	6	ay Evening	Night	Daily
Site Data				ve					
					ہ Iedium Ti		7.5% 12.9% 4.8% 4.9%		
	rrier Height:	0.0 feet		Λ			4.8% 4.9% 6.5% 2.7%		
Barrier Type (0-W	. ,	0.0			Heavy Ti	UCKS: 8	0.3% 2.7%	10.8%	0 0.29%
Centerline Dis		55.0 feet		Noise S	ource El	evations	(in feet)		
Centerline Dist.		55.0 feet			Autos	s: 0.00	00		
Barrier Distance		0.0 feet		Medi	im Truck	s: 2.29	97		
Observer Height (,	5.0 feet		Hea	vy Truck	s: 8.00)4 Grade A	djustmen	t: 0.0
	ad Elevation:	0.0 feet			· · · ·				
	ad Elevation:	0.0 feet		Lane E		Distance	, ,		
F	Road Grade:	0.0%			Auto				
	Left View:	-90.0 degree			Im Truck				
	Right View:	90.0 degree	S	Hea	vy Truck	s: 48.5	59		
FHWA Noise Mode	el Calculations	5							
VehicleType	REMEL	Traffic Flow	Distan	ce Finite	e Road	Fresne	I Barrier A	ten Be	rm Atten
Autos:	70.20	0.25		0.07	-1.20	-4	4.67 0	.000	0.000
Medium Trucks:	81.00	-15.70		0.09	-1.20	-4	4.87 0	.000	0.000
Heavy Trucks:	85.38	-12.17		0.09	-1.20		5.38 0	.000	0.000
Unmitigated Noise			-	,					
	Leq Peak Hou			q Evening		Night	Ldn	-	NEL
Autos:	69		57.4	65.		59.6	68	-	68.8
Medium Trucks:	64	-	52.7	56.		54.8	63		63.5
Heavy Trucks:	72		70.7	61.		62.9	71		71.4
Vehicle Noise:	74		72.8	67.	5	65.0	73	.4	73.7
Centerline Distanc	e to Noise Co	ntour (in feet)							
			1	70 dBA	65	dBA	60 dBA	1 55	5 dBA
								_	077
			Ldn: IEL:	93 97		201 210	43 45		932 973

FHWA-RD-77-108 HIGHWAY NOI	SE PREDICTION MODEL (9/12/2021)								
Scenario: E Road Name: Hosking Av. Road Segment: w/o Wible Rd.	Project Name: Majestic Gateway Job Number: 13923								
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS								
Highway Data	Site Conditions (Hard = 10, Soft = 15)								
Average Daily Traffic (Adt): 11,286 vehicles	Autos: 15								
Peak Hour Percentage: 10.00%	Medium Trucks (2 Axles): 15								
Peak Hour Volume: 1,129 vehicles	Heavy Trucks (3+ Axles): 15								
Vehicle Speed: 50 mph	Vehicle Mix								
Near/Far Lane Distance: 52 feet	VehicleType Day Evening Night Daily								
Site Data	Autos: 77.5% 12.9% 9.6% 91.81%								
Barrier Height: 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 2.52%								
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 5.67%								
Centerline Dist. to Barrier: 55.0 feet									
Centerline Dist. to Observer: 55.0 feet	Noise Source Elevations (in feet)								
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: 8.004 Grade Adjustment: 0.0								
Road Elevation: 0.0 feet	Lane Equivalent Distance (in feet)								
Road Grade: 0.0%	Autos: 48.724								
Left View: -90.0 degrees	Medium Trucks: 48.542								
Right View: 90.0 degrees	Heavy Trucks: 48.559								
FHWA Noise Model Calculations									
VehicleType REMEL Traffic Flow Distanc	e Finite Road Fresnel Barrier Atten Berm Atten								
Autos: 70.20 -2.14	0.07 -1.20 -4.67 0.000 0.000								
Medium Trucks: 81.00 -17.76	0.09 -1.20 -4.87 0.000 0.000								
Heavy Trucks: 85.38 -14.23	0.09 -1.20 -5.38 0.000 0.000								
Unmitigated Noise Levels (without Topo and barrier at									
	Evening Leq Night Ldn CNEL								
Autos: 66.9 65.0	63.3 57.2 65.8 66.4								
Medium Trucks: 62.1 60.6	54.3 52.7 61.2 61.4								
Heavy Trucks: 70.0 68.6	59.6 60.8 69.2 69.3								
Vehicle Noise: 72.2 70.6	65.2 62.8 71.3 71.6								
Centerline Distance to Noise Contour (in feet)									
	70 dBA 65 dBA 60 dBA 55 dBA								
	67 144 311 669								
Ldn: CNEL:	70 150 324 698								

	FHWA-RD	-77-108 HIGH	WAY	NOISE I	PREDICT	ION M	IODEL (9/12/20	021)				
Scenario Road Name Road Segmen	e: Hosking Av				F		Name: I umber:		ic Gateway	'			
SITE S	SPECIFIC IN	PUT DATA			NOISE MODEL INPUTS								
Highway Data				S	Site Conditions (Hard = 10, Soft = 15)								
Average Daily	Traffic (Adt):	12,930 vehicle	es					Autos:	15				
Peak Hour	Percentage:	10.00%			Medi	ium Tri	ucks (2 A	Axles):	15				
Peak He	our Volume:	1,293 vehicles	5		Heav	vy Tru	cks (3+ A	Axles):	15				
Vel	nicle Speed:	50 mph		v	ehicle Mi	x							
Near/Far Lar	ne Distance:	52 feet		-		leTvpe		Dav	Evening	Night	Dailv		
Site Data							Autos:	77.5%		9.6%	92.85		
Bar	rier Height:	0.0 feet			Med	lium T	rucks:	84.8%	4.9%	10.3%	2.20%		
Barrier Type (0-Wa	•	0.0			He	avy Ti	rucks:	86.5%	2.7%	10.8%	4.95%		
Centerline Dis	. ,	55.0 feet			loise Sou	ree El	overtion	n lin fe	at l				
Centerline Dist. t	o Observer:	55.0 feet		N	ioise sou	Auto		s (<i>In r</i> e 200	eet)				
Barrier Distance t	o Observer:	0.0 feet			Medium			297					
Observer Height ()	Above Pad):	5.0 feet			Heavy			297 D04	Grade Ad	iustmont	0.0		
Pa	d Elevation:	0.0 feet			Tieavy	TTUCK	3. 0.	004	Orade Auj	usunoni	0.0		
Roa	d Elevation:	0.0 feet		L	ane Equi	valent	Distanc	ce (in f	feet)				
F	Road Grade:	0.0%				Auto		724					
	Left View:	-90.0 degree			Medium			542					
	Right View:	90.0 degree	es		Heavy	Truck	s: 48.	559					
FHWA Noise Mode													
VehicleType	REMEL	Traffic Flow	Dist	tance	Finite R		Fresh		Barrier Atte		m Atten		
Autos:	70.20	-1.50		0.07		-1.20		-4.67		000	0.00		
Medium Trucks:	81.00	-17.76 -14.23		0.09		-1.20 -1.20		-4.87		000	0.00		
Heavy Trucks:	85.38			0.09		-1.20		-5.38	0.0	000	0.00		
Unmitigated Noise					,			1					
	Leq Peak Hou			Leq Ev		Leq	Night		Ldn		VEL		
Autos: Medium Trucks:	67 62		65.7 60.6		63.9 54.3		57.8 52.7		66.5 61.2		67. 61		
Heavy Trucks:	62 70		68.6		54.3 59.6		52.7 60.8		69.2	-	69.		
Vehicle Noise:	70	-	70.8		65.6		63.0		71.5		71		
Centerline Distanc	o to Noiso Co	ntour (in foot	1										
Centernite Distanc	e to 110/36 CO	intour (in leet,	,	70 d	BA	65	dBA	6	0 dBA	55	dBA		
			Ldn:		69		148		320		68		
		-	NEL:		72		155		335		72		

Monday, November 8, 2021

FHWA-	RD-77-108 H	IGHWAY	NOISE	PREDIC		ODEL (9)/12/2	021)	_	_		
Scenario: 2024 Road Name: Hosking Road Segment: w/o Wibl				Project Name: Majestic Gateway Job Number: 13923								
SITE SPECIFIC	INPUT DAT	ГА		NOISE MODEL INPUTS								
Highway Data			4	Site Con	ditions	(Hard =	10, Sc	oft = 15)				
Average Daily Traffic (Adt)	13,810 ve	hicles				-	Autos:	15				
Peak Hour Percentage	10.00%			Me	dium Tru	icks (2 A	xles):	15				
Peak Hour Volume	1,381 veh	icles		He	avy Truc	:ks (3+ A	xles):	15				
Vehicle Speed	50 mpl	h		Vehicle I	<i>lix</i>							
Near/Far Lane Distance	52 feet	t	F		cleType		Day	Evening	Night	Daily		
Site Data							77.5%	•	9.6%			
Barrier Height	0.0 fee	of		Me	edium Tr	ucks:	84.8%	4.9%	10.3%	2.52%		
Barrier Type (0-Wall, 1-Berm)				F	leavy Tr	ucks:	86.5%	2.7%	10.8%	5.67%		
Centerline Dist. to Barrier		et	-	Noise So				41				
Centerline Dist. to Observer	55.0 fee	et	Ľ.	NUISE 30	Auto:		000	el)				
Barrier Distance to Observer	0.0 fee	et		Marthur	n Truck:		297					
Observer Height (Above Pad)	5.0 fee	et			n Trucks y Trucks		.97)04	Grade Ad	ustment	. 0.0		
Pad Elevation	0.0 fee	et							usunen.	0.0		
Road Elevation	0.0 fee	et	1	Lane Equ	ıivalent	Distanc	e (in i	feet)				
Road Grade	0.0%				Autos		724					
Left View	-90.0 de	grees		Mediur	n Trucks	s: 48.5	542					
Right View	90.0 de	grees		Heav	y Trucks	s: 48.5	559					
FHWA Noise Model Calculation	ons											
VehicleType REMEL	Traffic Flo	w Di	stance	Finite	Road	Fresn		Barrier Atte	en Ber	m Atten		
Autos: 70.2		.26	0.0		-1.20		-4.67	0.0		0.00		
Medium Trucks: 81.0		5.88	0.0		-1.20		-4.87		000	0.00		
Heavy Trucks: 85.	38 -13	1.36	0.0	9	-1.20		-5.38	0.0	000	0.00		
Unmitigated Noise Levels (wi		and barri	er atten	uation)								
VehicleType Leq Peak H			Leq E	vening	Leq	Night		Ldn		VEL		
	67.8	65.9		64.1		58.1		66.7		67.3		
	63.0	61.5		55.1		53.6		62.1		62.3		
	70.9	69.5		60.4		61.7		70.1		70.3		
Vehicle Noise:	73.1	71.5		66.1		63.7		72.2	2	72.4		
Centerline Distance to Noise	Contour (in f	feet)		1					1			
			70 0	dBA	65 (1BA	6	60 dBA	55	dBA		
		Ldn: CNEL:		77 80		165 172		355 371		765 799		

	FHWA-RI	0-77-108 HIGH	IWAY NO	DISE PRE		IODEL (9/1:	2/2021)		
Road Nam	io: 2024+P ne: Hosking Av nt: w/o Wible F					Name: Maj lumber: 139	estic Gateway 23	,	
	SPECIFIC IN	IPUT DATA					DEL INPUTS	5	
Highway Data				Site 0	Conditions	(Hard = 10,	Soft = 15)		
Average Daily	Traffic (Adt):	15,454 vehicle	es			Aut	os: 15		
Peak Hour	Percentage:	10.00%			Medium Tr	ucks (2 Axle	es): 15		
Peak H	lour Volume:	1,545 vehicle	s		Heavy Tru	cks (3+ Axle	es): 15		
Ve	hicle Speed:	50 mph		Vehic	le Mix				
Near/Far La	ne Distance:	52 feet			/ehicleType	Da	y Evening	Night	Daily
Site Data				-			5% 12.9%		92.689
Bai	rrier Height:	0.0 feet			Medium T	rucks: 84.	8% 4.9%	10.3%	2.25%
Barrier Type (0-W		0.0			Heavy T	rucks: 86.	5% 2.7%	10.8%	5.07%
Centerline Dis	. ,	55.0 feet		Noise	Source E	evations (ii	n foot)		
Centerline Dist.	to Observer:	55.0 feet		110/30	Auto				
Barrier Distance	to Observer:	0.0 feet		140	dium Truck				
Observer Height (Above Pad):	5.0 feet			eavy Truck			iustment	· 0.0
Pá	ad Elevation:	0.0 feet			eavy much	3. 0.004	0/100 / 10	aounoni	. 0.0
Roa	ad Elevation:	0.0 feet		Lane	Equivalen	t Distance (in feet)		
1	Road Grade:	0.0%			Auto	s: 48.724			
	Left View:	-90.0 degree	es	Me	dium Truck	s: 48.542			
	Right View:	90.0 degree	es	H	eavy Truck	s: 48.559)		
FHWA Noise Mode	el Calculation	s							
VehicleType	REMEL	Traffic Flow	Distar	nce Fil	nite Road	Fresnel	Barrier Atte	en Ber	m Atten
Autos:	70.20	-0.73		0.07	-1.20	-4.	67 0.0	000	0.00
Medium Trucks:	81.00	-16.88		0.09	-1.20	-4.	87 0.0	000	0.00
Medium Trucks: Heavy Trucks:	81.00 85.38	-16.88 -13.36		0.09 0.09	-1.20 -1.20	-4. -5.		000 000	
Heavy Trucks: Unmitigated Noise	85.38 E Levels (with	-13.36 out Topo and	barrier a	0.09	-1.20	-5.	38 0.0	000	0.00
Heavy Trucks: Unmitigated Noise VehicleType	85.38 E Levels (with Leg Peak Hou	-13.36 out Topo and Ir Leq Day	barrier a	0.09 Ittenuation of Evenin	-1.20 m) g Leq	-5.	38 0.0	000 Ci	0.00
Heavy Trucks: Unmitigated Noise VehicleType Autos:	85.38 E Levels (with Leq Peak Hou 68	-13.36 out Topo and ir Leq Day 3.3	<i>barrier a</i> / Le 66.4	0.09 attenuation eq Evenin 6	-1.20 m) g Leq 4.7	-5. Night 58.6	38 0.0 Ldn 67.2	000 Ci	0.00 NEL 67.
Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks:	85.38 E Levels (with Leq Peak Hou 68 63	-13.36 out Topo and r Leq Day .3 .0	<i>barrier a</i> / <i>Le</i> 66.4 61.5	0.09 attenuatio eq Evenin 6 5	-1.20 n) g Leq 4.7 5.1	-5. Night 58.6 53.6	38 0.0 Ldn 67.2 62.1	000 Ci	0.00 NEL 67
Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks:	85.38 E Levels (with Leq Peak Hou 68 63 70	-13.36 out Topo and r Leq Day .3 .0 .9	barrier a / Le 66.4 61.5 69.5	0.09 httenuation eq Evenin 6 5 6	-1.20 m) g Leq 4.7 5.1 0.4	-5. Night 58.6 53.6 61.7	38 0.0 <i>Ldn</i> 67.2 62.1 70.1	000 Ci	0.00 NEL 67. 62. 70.
Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks:	85.38 E Levels (with Leq Peak Hou 68 63	-13.36 out Topo and r Leq Day .3 .0 .9	<i>barrier a</i> / <i>Le</i> 66.4 61.5	0.09 httenuation eq Evenin 6 5 6	-1.20 n) g Leq 4.7 5.1	-5. Night 58.6 53.6	38 0.0 Ldn 67.2 62.1	000 Ci	0.00 NEL 67. 62. 70.
Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks:	85.38 Levels (with Leq Peak Hou 68 63 70 73	-13.36 out Topo and ir Leq Day 3.3 .0 .9 .3	barrier a 66.4 61.5 69.5 71.7	0.09 attenuation eq Evenin 6 5 6 6 6	-1.20 n) g Leq 4.7 5.1 0.4 6.4	-5 Night 58.6 53.6 61.7 63.9	38 0.0 Ldn 67.2 62.1 70.1 72.3	000 Ci	0.00 NEL 67. 62. 70. 72.
Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	85.38 Levels (with Leq Peak Hou 68 63 70 73	-13.36 out Topo and ir Leg Day 3.3 0.0 9.9 3.3 ontour (in feet	barrier a 66.4 61.5 69.5 71.7	0.09 attenuation eq Evenin 6 5 6 6 6 70 dBA	-1.20 n) g Leq 4.7 5.1 0.4 6.4 6.4	-5 Night 58.6 53.6 61.7 63.9 dBA	38 0.0 Ldn 67.2 62.1 70.1 72.3 60 dBA	000 CI 2 1 3 55	0.00 NEL 67. 62. 70. 72. dBA
Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	85.38 Levels (with Leq Peak Hou 68 63 70 73	-13.36 out Topo and ir Leq Day .3 .0 .9 .3 .3 .0 .9 .3 .3 .0 .0 .9 .3 .3 .0 .0 .9 .3 .3	barrier a 66.4 61.5 69.5 71.7	0.09 Attenuation eq Evenin 6 5 6 6 6 70 dBA	-1.20 n) g Leq 4.7 5.1 0.4 6.4	-5 Night 58.6 53.6 61.7 63.9	38 0.0 Ldn 67.2 62.1 70.1 72.3	000 CI 2 1 3 55	67. 62. 70. 72.

FHWA-RD-77-108 HIGHWA	Y NOISE	E PREDIC	TION M	ODEL (9	/12/20	21)			
Scenario: 2029 Road Name: Hosking Av. Road Segment: w/o Wible Rd.		Project Name: Majestic Gateway Job Number: 13923							
SITE SPECIFIC INPUT DATA			N	IOISE N	IODE		3		
Highway Data		Site Con	ditions	(Hard =	10, So	ft = 15)			
Average Daily Traffic (Adt): 15,405 vehicles					Autos:	15			
Peak Hour Percentage: 10.00%		Med	dium Tru	ucks (2 A	xles):	15			
Peak Hour Volume: 1,541 vehicles		Hea	avy Truc	cks (3+ A	xles):	15			
Vehicle Speed: 50 mph	ŀ	Vehicle N	<i>liv</i>						
Near/Far Lane Distance: 52 feet	ŀ		cleType		Dav	Evening	Night	Daily	
Site Data		VCIII			77.5%	12.9%	9.6%		
Barrier Height: 0.0 feet		Me	edium Tr	rucks:	84.8%	4.9%	10.3%		
Barrier Type (0-Wall, 1-Berm): 0.0		F	leavy Tr	rucks:	86.5%	2.7%	10.8%		
Centerline Dist. to Barrier: 55.0 feet	-		-						
Centerline Dist. to Observer: 55.0 feet	-	Noise So				et)			
Barrier Distance to Observer: 0.0 feet			Autos						
Observer Height (Above Pad): 5.0 feet			n Trucks			Oursels Add			
Pad Elevation: 0.0 feet		Heav	y Trucks	s: 8.0	104	Grade Adj	ustment	: 0.0	
Road Elevation: 0.0 feet		Lane Equ	ıivalent	Distanc	e (in f	eet)			
Road Grade: 0.0%			Autos	s: 48.7	24				
Left View: -90.0 degrees		Mediur	n Trucks	s: 48.5	642				
Right View: 90.0 degrees		Heav	y Trucks	s: 48.5	59				
FHWA Noise Model Calculations	1								
VehicleType REMEL Traffic Flow D	listance	Finite	Road	Fresn	e/ I	Barrier Atte	en Ber	m Atten	
Autos: 70.20 -0.79	0.0)7	-1.20		4.67	0.0	00	0.000	
Medium Trucks: 81.00 -16.40	0.0)9	-1.20		4.87	0.0	00	0.000	
Heavy Trucks: 85.38 -12.88	0.0)9	-1.20		-5.38	0.0	00	0.000	
Unmitigated Noise Levels (without Topo and bar	rier atter	nuation)							
VehicleType Leq Peak Hour Leq Day		vening	Leq	Night		Ldn		NEL	
Autos: 68.3 66.4		64.6		58.6		67.2		67.8	
Medium Trucks: 63.5 62.0		55.6		54.1		62.5		62.8	
Heavy Trucks: 71.4 70.0		60.9		62.2		70.5		70.7	
Vehicle Noise: 73.6 72.0)	66.5		64.2		72.6	i	72.9	
Centerline Distance to Noise Contour (in feet)									
		dBA	65 (dBA	6	0 dBA	55	dBA	
Ldn		82		177		382		823	
CNEL	:	86		185		399		859	

	FHWA-RD	-77-108 HIGH	WAY	NOISE P	REDIC	TION	IODEL	(9/12/2)	021)				
	: 2029+P				Project Name: Majestic Gateway								
	: Hosking Av.					Job N	lumber:	13923					
Road Segment	: w/o Wible R	:d.											
	PECIFIC IN	PUT DATA			NOISE MODEL INPUTS								
Highway Data				Si	Site Conditions (Hard = 10, Soft = 15)								
Average Daily T	raffic (Adt):	17,049 vehicle	es					Autos:	15				
Peak Hour P	Percentage:	10.00%			Me	dium Tr	ucks (2	Axles):	15				
Peak Ho	ur Volume:	1,705 vehicles	s		He	avy Tru	cks (3+	Axles):	15				
	icle Speed:	50 mph		Ve	hicle I	Nix							
Near/Far Lan	e Distance:	52 feet			Vehi	cleType	9	Day	Evening	Night	Daily		
Site Data							Autos:	77.5%	12.9%	9.6%	92.60%		
Barr	ier Height:	0.0 feet			Me	edium T	rucks:	84.8%	4.9%	10.3%	2.289		
Barrier Type (0-Wa		0.0			ŀ	leavy T	rucks:	86.5%	2.7%	10.8%	5.129		
Centerline Dist		55.0 feet						- 11- 4	41				
Centerline Dist. to	Observer:	55.0 feet		///	oise so		levation		eet)				
Barrier Distance to	Observer:	0.0 feet				Auto n Truck		.000					
Observer Height (A	bove Pad):	5.0 feet				n Truck v Truck		.297 .004	Grade Ad	ustmont	0.0		
Pad	d Elevation:	0.0 feet			neav	y muck	s. o	.004	Graue Auj	usuneni	0.0		
Road	d Elevation:	0.0 feet		Lá	ne Equ	uivalen	t Distan	ice (in i	feet)				
R	oad Grade:	0.0%				Auto	s: 48	.724					
	Left View:	-90.0 degree	es			n Truck		.542					
	Right View:	90.0 degree	es		Heav	y Truck	's: 48	.559					
FHWA Noise Model	Calculations	1											
VehicleType	REMEL	Traffic Flow	Di	stance	Finite		Fres		Barrier Atte		m Atten		
Autos:	70.20	-0.31		0.07		-1.20		-4.67		000	0.00		
Medium Trucks:	81.00	-16.40		0.09		-1.20		-4.87		000	0.00		
Heavy Trucks:	85.38	-12.88		0.09		-1.20		-5.38	0.0	000	0.00		
Unmitigated Noise			barri	er attenu	ation)								
	eq Peak Hou			Leq Eve		Leq	Night		Ldn		VEL		
Autos:	68.		66.9		65.1		59.		67.7		68.		
Medium Trucks:	63.	-	62.0		55.6		54.		62.5		62.		
Heavy Trucks:	71.		70.0		60.9		62.		70.5		70.		
Vehicle Noise:	73.	.7	72.1		66.8		64.	3	72.8	5	73.		
Centerline Distance	to Noise Co	ntour (in feet,)										
			L	70 dE		65	dBA		60 dBA		dBA		
			Ldn:		84		18		391		84		
			NEL:		88		190	1	408		880		

Monday, November 8, 2021

F	HWA-RD	-77-108 HIGH	WAY	NOISE	PREDIC	TION M	ODEL (S	9/12/20	021)				
Scenario: 20 Road Name: Ho Road Segment: w/o	sking Av.	d.			Project Name: Majestic Gateway Job Number: 13923								
SITE SPEC	IFIC IN	PUT DATA							L INPUT	S			
Highway Data					Site Cond	ditions (Hard =	10, Sc	oft = 15)				
Average Daily Traffic	(Adt):	22,103 vehicle	s					Autos:	15				
Peak Hour Perce	entage:	10.00%			Med	dium Tru	cks (2 A	xles):	15				
Peak Hour V	olume:	2,210 vehicles			Hea	avy Truc	ks (3+ A	xles):	15				
Vehicle	Speed:	50 mph		-	Vehicle N	liv							
Near/Far Lane Dis	stance:	52 feet		H		cleType		Day	Evening	Night	Daily		
Site Data					verm			77.5%		9.6%			
Dennieu (In lash to	0.0 feet			Me	dium Tr		84.8%		10.3%			
Barrier H Barrier Type (0-Wall, 1-		0.0 teet 0.0			h	leavy Tr	ucks:	86.5%	2.7%	10.8%			
Centerline Dist. to E		55.0 feet											
Centerline Dist. to Ob		55.0 feet		1	Noise So				eet)				
Barrier Distance to Ob		0.0 feet				Autos		000					
Observer Height (Above		5.0 feet			Mediun	n Trucks	: 2.2	297					
Pad Ele		0.0 feet			Heav	y Trucks	: 8.0	004	Grade Ad	iustment	: 0.0		
Road Ele		0.0 feet			Lane Equ	ivalent	Distanc	e (in i	feet)				
	Grade:	0.0%		F		Autos			,				
	t View:	-90.0 degree	~		Mediun	n Trucks							
	t View:	90.0 degree				y Trucks							
FHWA Noise Model Cal	culations	:											
VehicleType RE	MEL	Traffic Flow	Dist	tance	Finite	Road	Fresn	el	Barrier Att	en Ber	m Atter		
Autos:	70.20	0.78		0.0	7	-1.20		-4.67	0.0	000	0.00		
Medium Trucks:	81.00	-14.84		0.0	9	-1.20		-4.87	0.0	000	0.00		
Heavy Trucks:	85.38	-11.32		0.0	9	-1.20		-5.38	0.0	000	0.00		
Unmitigated Noise Leve													
	Peak Hou			Leq E	vening	Leq I			Ldn		NEL		
Autos:	69.		67.9		66.2		60.1		68.7		69		
Medium Trucks:	65.		53.5		57.2		55.6		64.1		64		
Heavy Trucks:	72.		71.5		62.5		63.7		72.1		72		
Vehicle Noise:	75.		73.6		68.1		65.8		74.2	2	74		
Centerline Distance to I	Voise Co	ntour (in feet)		70	-0.4	65	0.4		0.404		-10.4		
			L	70	dBA	65 a		6	0 dBA		dBA		
			Ldn: IEL:		105		226		486 507		1,04 1,09		
					109		236						

Scenario: 2042+P			Project	Name [,] N	laiest	ic Gateway	,		
Road Name: Hosking Av.		Project Name: Majestic Gateway Job Number: 13923							
Road Segment: w/o Wible Rd.			000 14	innocr. i	0020				
SITE SPECIFIC INPUT DATA			N		ODE		5		
Highway Data		Site Cor	ditions (-		
Average Daily Traffic (Adt): 23,747 vehicle	s			A	utos:	15			
Peak Hour Percentage: 10.00%		Me	edium Tru	cks (2 A	xles):	15			
Peak Hour Volume: 2,375 vehicles		He	avy Truc	ks (3+ A	xles):	15			
Vehicle Speed: 50 mph		Vehicle	Miy						
Near/Far Lane Distance: 52 feet			icleTvpe		Day	Evening	Niaht	Dailv	
Site Data					77.5%	•	9.6%		
Barrier Height: 0.0 feet		м	edium Tr	ucks:	34.8%	4.9%	10.3%	2.35	
Barrier Type (0-Wall, 1-Berm): 0.0			Heavy Tr	ucks:	36.5%	2.7%	10.8%	5.28	
Centerline Dist. to Barrier: 55.0 feet		Noise S	ource Eli	vations	(in fe	pet)			
Centerline Dist. to Observer: 55.0 feet			Autos						
Barrier Distance to Observer: 0.0 feet		Modiu	m Trucks	. 0.0					
Observer Height (Above Pad): 5.0 feet		vv Trucks			Grade Ad	iustment	0.0		
Pad Elevation: 0.0 feet									
Road Elevation: 0.0 feet		Lane Eq	uivalent			feet)			
Road Grade: 0.0%			Autos						
Left View: -90.0 degree			m Trucks						
Right View: 90.0 degree	s	Hea	vy Trucks	48.5	59				
FHWA Noise Model Calculations									
VehicleType REMEL Traffic Flow	Distand		Road	Fresn		Barrier Atte		rm Atter	
Autos: 70.20 1.12		0.07	-1.20		4.67		000	0.00	
Medium Trucks: 81.00 -14.84		0.09	-1.20		4.87		000	0.00	
Heavy Trucks: 85.38 -11.32		0.09	-1.20		5.38	0.0	000	0.0	
Unmitigated Noise Levels (without Topo and I	barrier at	ttenuation)							
VehicleType Leq Peak Hour Leq Day		q Evening	Leq I			Ldn		NEL	
	58.3	66.5		60.5		69.1		69	
	63.5	57.2		55.6		64.1		64	
	71.5	62.5		63.7		72.1		72	
Vehicle Noise: 75.2	73.7	68.3		65.9		74.3	3	74	
Centerline Distance to Noise Contour (in feet)					6	60 dBA	55	dBA	
		70 dBA	65 0		c			_	
	_dn: IEL:	70 dBA 106 111	65 0	229 239	Ľ	494 516		1,06	

Scenario: E Road Name: Hosking Av. Road Segment: e/o Wible Rd.	Project Name: Majestic Gateway Job Number: 13923							
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS							
Highway Data	Site Conditions (Hard = 10, Soft = 15)							
Average Daily Traffic (Adt): 15,627 vehicles	Autos: 15							
Peak Hour Percentage: 10.00%	Medium Trucks (2 Axles): 15							
Peak Hour Volume: 1,563 vehicles	Heavy Trucks (3+ Axles): 15							
Vehicle Speed: 50 mph	Vehicle Mix							
Near/Far Lane Distance: 52 feet	VehicleType Day Evening Night Daily							
Site Data	Autos: 77.5% 12.9% 9.6% 91.81							
Barrier Height: 0.0 feet	Medium Trucks: 84,8% 4,9% 10,3% 2,52							
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 5.67							
Centerline Dist. to Barrier: 55.0 feet								
Centerline Dist. to Observer: 55.0 feet	Noise Source Elevations (in feet)							
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: 8.004 Grade Adjustment: 0.0							
Road Elevation: 0.0 feet	Lane Equivalent Distance (in feet)							
Road Grade: 0.0%	Autos: 48.724							
Left View: -90.0 degrees	Medium Trucks: 48.542							
Right View: 90.0 degrees	Heavy Trucks: 48.559							
FHWA Noise Model Calculations								
VehicleType REMEL Traffic Flow Distan	Finite Road Fresnel Barrier Atten Berm Atte							
Autos: 70.20 -0.73	.07 -1.20 -4.67 0.000 0.0							
Medium Trucks: 81.00 -16.34	.09 -1.20 -4.87 0.000 0.0							
Heavy Trucks: 85.38 -12.82	.09 -1.20 -5.38 0.000 0.0							
Unmitigated Noise Levels (without Topo and barrier a	enuation)							
VehicleType Leq Peak Hour Leq Day Le	Evening Leq Night Ldn CNEL							
Autos: 68.3 66.4	64.7 58.6 67.2 6							
Medium Trucks: 63.5 62.0	55.7 54.1 62.6 62							
Heavy Trucks: 71.4 70.0	61.0 62.2 70.6 70							
Vehicle Noise: 73.6 72.1	66.6 64.2 72.7 73							
Centerline Distance to Noise Contour (in feet)								
	0 dBA 65 dBA 60 dBA 55 dBA							
Ldn:	83 179 386 83							
CNEL:	87 187 403 8							

_		-77-108 HIGH												
Scenario:					Project Name: Majestic Gateway Job Number: 13923									
Road Name:						Job N	lumber:	13923						
Road Segment:	e/o Wible R	d.												
	PECIFIC IN	PUT DATA			NOISE MODEL INPUTS									
Highway Data				S	Site Conditions (Hard = 10, Soft = 15)									
Average Daily Tr	affic (Adt):	17,820 vehicle	es		Autos: 15									
Peak Hour Pe	ercentage:	10.00%			Mee	dium Tr	ucks (2)	Axles):	15					
Peak Hou	ır Volume:	1,782 vehicle	s		Hei	avy Tru	cks (3+)	Axles):	15					
Vehi	cle Speed:	50 mph		V	ehicle N	<i>liv</i>								
Near/Far Lane	Distance:	52 feet				cleTvpe		Dav	Evening	Night	Dailv			
Site Data							Autos:	77.5%		9.6%				
Parri	er Heiaht:	0.0 feet			Me	dium T	rucks:	84.8%	4.9%	10.3%	2.21%			
Barrier Type (0-Wal		0.0			F	leavy T	rucks:	86.5%	2.7%	10.8%	4.97%			
Centerline Dist.	. ,	55.0 feet												
Centerline Dist. to		55.0 feet		N	oise So		levation		eet)					
Barrier Distance to		0.0 feet				Auto		000						
Observer Height (Al		5.0 feet			Mediur			297						
	Elevation:	0.0 feet			Heav	y Truck	s: 8.	004	Grade Ad	iustment	0.0			
	Elevation:	0.0 feet		Li	ane Eau	ivalen	t Distan	ce (in	feet)					
	ad Grade:	0.0%		_		Auto		724						
	Left View:	-90.0 degree	29		Mediur			542						
F	Right View:	90.0 degree			Heav	y Truck	s: 48.	559						
FHWA Noise Model	Calculations	:												
VehicleType	REMEL	Traffic Flow	Di	stance	Finite	Road	Fresr	nel	Barrier Att	en Ber	m Atten			
Autos:	70.20	-0.11		0.07		-1.20		-4.67	0.0	000	0.00			
Medium Trucks:	81.00	-16.34		0.09		-1.20		-4.87	0.0	000	0.00			
Heavy Trucks:	85.38	-12.82		0.09		-1.20		-5.38	0.0	000	0.00			
Unmitigated Noise L	evels (witho	out Topo and	barri	ier attenu	ation)									
VehicleType L	eq Peak Hou	r Leq Day	/	Leg Eve	ening	Leq	Night		Ldn		VEL			
Autos:	69.	0	67.1		65.3		59.3	2	67.9	9	68.			
Medium Trucks:	63.	5	62.0		55.7		54.	1	62.6	6	62.			
Heavy Trucks:	71.		70.0		61.0		62.3		70.6		70.			
Vehicle Noise:	73.	8	72.2		67.0		64.4	4	72.9)	73.			
Centerline Distance	to Noise Co	ntour (in feet)											
				70 dl	BA	65	dBA	6	60 dBA	55	dBA			
			Ldn:		86		184		397		855			
			NEL		89		193		415		895			

Monday, November 8, 2021

FHWA-R	D-77-108 HIGHWAY	Y NOISE	PREDICTION	MODEL (9)/12/20	21)		
Scenario: 2024 Road Name: Hosking A Road Segment: e/o Wible				ect Name: N b Number: 1		c Gateway		
SITE SPECIFIC I	NPUT DATA					L INPUTS	;	
Highway Data		5	Site Conditio	ns (Hard =	10, So	ft = 15)		
Average Daily Traffic (Adt):	18,332 vehicles				Autos:	15		
Peak Hour Percentage:	10.00%			Trucks (2 A		15		
Peak Hour Volume:	1,833 vehicles		Heavy 1	rucks (3+ A	xles):	15		
Vehicle Speed:	50 mph	١	Vehicle Mix					
Near/Far Lane Distance:	52 feet	_	VehicleT	/pe	Day	Evening	Night	Daily
Site Data				Autos:	77.5%	12.9%	9.6%	91.819
Barrier Height:	0.0 feet		Mediun	n Trucks:	84.8%	4.9%	10.3%	2.52
Barrier Type (0-Wall, 1-Berm):	0.0		Heavy	/ Trucks:	86.5%	2.7%	10.8%	5.679
Centerline Dist. to Barrier:	55.0 feet		Voise Source	Flevations	in fe	et)		
Centerline Dist. to Observer:	55.0 feet	-			000			
Barrier Distance to Observer:	0.0 feet		Medium Tru					
Observer Height (Above Pad):	5.0 feet		Heavy Tru			Grade Adju	ustment:	0.0
Pad Elevation:	0.0 feet							
Road Elevation:	0.0 feet	L	ane Equival			eet)		
Road Grade:	0.0%			utos: 48.7				
Left View:	-90.0 degrees		Medium Tru					
Right View:	90.0 degrees		Heavy Tru	icks: 48.5	59			
FHWA Noise Model Calculation								
VehicleType REMEL		istance	Finite Road			Barrier Atte		n Atten
Autos: 70.20		0.07			-4.67	0.0		0.00
Medium Trucks: 81.00		0.09			-4.87	0.0		0.00
Heavy Trucks: 85.3		0.09	-	20	-5.38	0.0	00	0.00
Unmitigated Noise Levels (with				e e Mirché		Ldn	~	IEL
VehicleType Leq Peak Ho Autos: 6	ur Leq Day 9.0 67.1	Leq Ev	65.4	eq Night 59.3		Lan 67.9		IEL 68.
	4.2 62.7		56.4	54.8		63.3		63.
	4.2 02.7 2.1 70.7		50.4 61.7	62.9		71.3		71.
	4.3 72.8		67.3	64.9		73.4		73.
Centerline Distance to Noise C	ontour (in feet)		-					
		70 a	1BA	65 dBA	6	0 dBA	55	dBA
	Ldn:		92	199		429		924

FHWA-RD-	77-108 HIGHWAY	NOISE	PREDIC	TION MO	DDEL (9/	12/20	21)				
Scenario: 2024+P Road Name: Hosking Av. Road Segment: e/o Wible Rd	L		Project Name: Majestic Gateway Job Number: 13923								
SITE SPECIFIC INF	UT DATA		NOISE MODEL INPUTS								
Highway Data		4	Site Con	ditions (l	Hard = 1	0, Sof	ft = 15)				
Average Daily Traffic (Adt): 2	0,525 vehicles				A	utos:	15				
Peak Hour Percentage: 1	0.00%		Me	dium Tru	cks (2 Ax	des):	15				
Peak Hour Volume: 2	2,052 vehicles		He	avy Truck	ks (3+ Ax	(les):	15				
Vehicle Speed:	50 mph		Vehicle I	Mix							
Near/Far Lane Distance:	52 feet	-		icleType	E	av	Evening	Night	Daily		
Site Data						7.5%	12.9%	9.6%			
Barrier Height:	0.0 feet		M	edium Tru	icks: 8	4.8%	4.9%	10.3%	2.25%		
Barrier Type (0-Wall, 1-Berm):	0.0		ŀ	leavy Tru	icks: 8	6.5%	2.7%	10.8%	5.06%		
Centerline Dist. to Barrier:	55.0 feet	H	Naiaa Ca	ource Ele	votione	lin fa	n#1				
Centerline Dist. to Observer:	55.0 feet	-	Noise Sc	Autos			et)				
Barrier Distance to Observer:	0.0 feet		Martin	Autos. m Trucks	0.00						
Observer Height (Above Pad):	5.0 feet			v Trucks.			Grade Adj	ustment	0.0		
Pad Elevation:	0.0 feet		neav	y mucks.	0.00	J4 '	onade Auj	usument	0.0		
Road Elevation:	0.0 feet	1	Lane Eq	uivalent l	Distance	e (in fe	eet)				
Road Grade:	0.0%			Autos.		24					
Left View:	-90.0 degrees			m Trucks.							
Right View:	90.0 degrees		Heav	y Trucks.	48.5	59					
FHWA Noise Model Calculations											
VehicleType REMEL	Traffic Flow Dis	stance	Finite	Road	Fresne	I E	Barrier Atte	en Ber	m Atten		
Autos: 70.20	0.50	0.0		-1.20		4.67	0.0		0.00		
Medium Trucks: 81.00	-15.65	0.0		-1.20		4.87	0.0		0.00		
Heavy Trucks: 85.38	-12.13	0.0	-	-1.20	-	5.38	0.0	00	0.00		
Unmitigated Noise Levels (without											
VehicleType Leq Peak Hour		Leg E	vening	Leq N	•		Ldn		VEL		
Autos: 69.6			65.9		59.8		68.5		69.		
Medium Trucks: 64.2			56.4		54.8 62.9		63.3		63.		
Heavy Trucks: 72.1 Vehicle Noise: 74.5			61.7				71.3		71.		
	-		67.6		65.1		73.5)	73.8		
Centerline Distance to Noise Con	tour (in feet)	70 -	dBA	65 d	DA I	E!) dBA	FF	dBA		
	Ldn:	700	лын 95	05 U	БА 204	00	440	55	ивя 947		
	CNEL:		95		204		440		947 991		
	GNEL.		55		210		400		351		

FHWA-RD-77-108 HIGH	WAY NO	SE PREDIC	TION M	IODEL (9	9/12/20	21)		
Scenario: 2029 Road Name: Hosking Av. Road Segment: e/o Wible Rd.				Name: N lumber: 1		c Gateway		
SITE SPECIFIC INPUT DATA			N	IOISE N	IODEI		3	
Highway Data		Site Con	ditions	(Hard =	10, So	ft = 15)		
Average Daily Traffic (Adt): 20,540 vehicle	s				Autos:	15		
Peak Hour Percentage: 10.00%		Me	dium Tri	ucks (2 A	xles):	15		
Peak Hour Volume: 2,054 vehicles		He	avy Tru	cks (3+ A	xles):	15		
Vehicle Speed: 50 mph		Vehicle	Mix					
Near/Far Lane Distance: 52 feet			icleType		Dav	Evening	Night	Daily
Site Data		VCII			77.5%	12.9%	9.6%	
Barrier Height: 0.0 feet		м	edium Ti	rucks:	84.8%	4.9%	10.3%	2.52%
Barrier Type (0-Wall, 1-Berm): 0.0			Heavy Ti		86.5%		10.8%	5.67%
Centerline Dist. to Barrier: 55.0 feet								
Centerline Dist. to Observer: 55.0 feet		Noise So				et)		
Barrier Distance to Observer: 0.0 feet			Auto					
Observer Height (Above Pad): 5.0 feet			m Truck					
Pad Elevation: 0.0 feet		Heav	/y Truck	s: 8.0	004	Grade Adj	ustment.	0.0
Road Elevation: 0.0 feet		Lane Eq	uivalent	t Distanc	e (in fe	eet)		
Road Grade: 0.0%			Auto	s: 48.7	724			
Left View: -90.0 degree	s	Mediu	m Truck	s: 48.5	542			
Right View: 90.0 degree	s	Heav	/y Truck	s: 48.5	559			
FHWA Noise Model Calculations		1						
VehicleType REMEL Traffic Flow	Distand	e Finite	Road	Fresn	el l	Barrier Atte	en Ber	m Atten
Autos: 70.20 0.46		0.07	-1.20		-4.67	0.0	00	0.000
Medium Trucks: 81.00 -15.16		0.09	-1.20		-4.87	0.0		0.000
Heavy Trucks: 85.38 -11.63		0.09	-1.20		-5.38	0.0	00	0.000
Unmitigated Noise Levels (without Topo and	barrier at	tenuation)						
VehicleType Leq Peak Hour Leq Day		l Evening		Night		Ldn	÷.	VEL
	67.6	65.9		59.8		68.4		69.0
	63.2	56.9		55.3		63.8		64.0
	71.2	62.2		63.4		71.8		71.9
Vehicle Noise: 74.8	73.2	67.8		65.4		73.9)	74.2
Centerline Distance to Noise Contour (in feet)								
		70 dBA	65	dBA	6	0 dBA	55	dBA
	Ldn:	100		215		463		997
CI	VEL:	104		224		483		1,041

	FHWA-RD	9-77-108 HIGH	WAY	NOISE P	REDIC	TION M	ODEL	9/12/2	021)		
Scenario:	2029+P					Project	Name:	Majest	ic Gateway	/	
Road Name:	Hosking Av.					Job N	umber:	13923			
Road Segment:	e/o Wible R	d.									
	PECIFIC IN	PUT DATA							L INPUT	S	
Highway Data				Si	te Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily Tr	affic (Adt):	22,733 vehicle	s					Autos:	15		
Peak Hour Pe	ercentage:	10.00%			Me	dium Tru	ucks (2	Axles):	15		
Peak Hou	ır Volume:	2,273 vehicles	6		Hei	avy Truc	cks (3+	Axles):	15		
Vehic	cle Speed:	50 mph		Ve	hicle N	<i>lix</i>					
Near/Far Lane	Distance:	52 feet		-		cleType		Dav	Evening	Night	Daily
Site Data							Autos:	77.5%		9.6%	
Rarri	er Height:	0.0 feet			Me	edium Ti	ucks:	84.8%	4.9%	10.3%	2.28
Barrier Type (0-Wal		0.0			F	leavy Ti	ucks:	86.5%	2.7%	10.8%	5.129
Centerline Dist.	. ,	55.0 feet						- () *	41		
Centerline Dist. to		55.0 feet		N	oise So	urce El			eet)		
Barrier Distance to	Observer:	0.0 feet				Auto		000			
Observer Height (Al	ove Pad):	5.0 feet				n Truck		297	Crada Ad	iuotmont	
Pad	Elevation:	0.0 feet			Heav	y Truck:	5. 8	004	Grade Ad	usuneni	0.0
Road	Elevation:	0.0 feet		La	ne Equ	ıivalent	Distan	ce (in i	feet)		
Ro	ad Grade:	0.0%				Autos	s: 48	.724			
	Left View:	-90.0 degree	s		Mediur	n Truck	s: 48	.542			
F	Right View:	90.0 degree	es		Heav	y Truck:	s: 48	.559			
FHWA Noise Model	Calculations										
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite		Fres		Barrier Att		m Atten
Autos:	70.20	0.94		0.07		-1.20		-4.67		000	0.00
Medium Trucks:	81.00	-15.16		0.09		-1.20		-4.87		000	0.00
Heavy Trucks:	85.38	-11.63		0.09		-1.20		-5.38	0.0	000	0.00
Unmitigated Noise L			- T		<u> </u>			1			
	eq Peak Hou			Leq Eve		Leq	Night		Ldn		VEL
Autos:	70.		68.1		66.3		60.		68.9		69
Medium Trucks:	64.		63.2		56.9		55.		63.8		64
Heavy Trucks: Vehicle Noise:	72.	-	71.2 73.4		62.2 68.1		63. 65.		71.8		71.
	-				68.1		65.	0	74.0	J	74.
Centerline Distance	to Noise Co	ntour (in feet)) 	70 dE		65	dBA	4	0 dBA	FF	dBA
			Ldn:	70 dE	102	00 (ава 220		о ава 473		ава 1.01
			VEL:		102		220		473		
		CI	VEL.		107		230	1	495		1,066

Monday, November 8, 2021

F	HWA-RD	0-77-108 HIGH	VAY NC	ISE	PREDIC	TION MC	DDEL (9/12/2	021)		
Scenario: 20 Road Name: Ho Road Segment: e/o	sking Av					Project I Job Nu			tic Gateway	/	
	IFIC IN	IPUT DATA							L INPUT	s	
Highway Data				1	Site Cond	ditions (l	Hard =	10, S	oft = 15)		
Average Daily Traffic	(Adt):	29,815 vehicles	6				,	Autos:	15		
Peak Hour Perce	ntage:	10.00%			Med	dium True	cks (2 A	Axles).	15		
Peak Hour Ve	olume:	2,982 vehicles			Hea	avy Truck	(3+ A	(xles)	15		
Vehicle S	Speed:	50 mph			Vehicle N	lix					
Near/Far Lane Dis	tance:	52 feet		F		cleType		Dav	Evening	Night	Daily
Site Data							utos:	77.5%	•	9.6%	
Barrier H	leiaht [.]	0.0 feet			Me	dium Tru	icks:	84.8%	6 4.9%	10.3%	2.52
Barrier Type (0-Wall, 1-		0.0			H	leavy Tru	icks:	86.5%	6 2.7%	10.8%	5.67
Centerline Dist. to E		55.0 feet		H	Noise So	uree Ele	votion	n /im f	a a fi		
Centerline Dist. to Ob	server:	55.0 feet		ť	voise 30	Autos:		300	eel)		
Barrier Distance to Ob	server:	0.0 feet			A da aliana	n Trucks:		JUU 297			
Observer Height (Above	Pad):	5.0 feet				y Trucks:		297	Grade Ad	iustment	0.0
Pad Ele	vation:	0.0 feet								asancia	0.0
Road Ele	vation:	0.0 feet		1	Lane Equ	ivalent l	Distand	e (in	feet)		
Road	Grade:	0.0%				Autos:		724			
Lef	View:	-90.0 degree	6			n Trucks:		542			
Righ	View:	90.0 degree	6		Heav	y Trucks:	48.	559			
FHWA Noise Model Cal	culation	s									
VehicleType RE	MEL	Traffic Flow	Distan	се	Finite	Road	Fresn	el	Barrier Att	en Ber	m Atter
Autos:	70.20	2.08		0.0	7	-1.20		-4.67	0.0	000	0.00
Medium Trucks:	81.00	-13.54		0.0	9	-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	85.38	-10.02		0.0	9	-1.20		-5.38	0.0	000	0.00
Unmitigated Noise Leve	ls (with	out Topo and b	arrier a	tten	uation)						
	Peak Hou			eq Ei	vening	Leq N			Ldn		VEL
Autos:	71		9.2		67.5		61.4		70.0		70
Medium Trucks:	66		4.8		58.5		56.9		65.4		65
Heavy Trucks:	74		2.8		63.8		65.0		73.4		73
Vehicle Noise:	76	.4 7	4.9		69.4		67.1		75.	5	75
Centerline Distance to I	loise Co	ontour (in feet)									
				70 c		65 d		1	60 dBA		dBA
		L	.dn:		128		275		593		1,27
			EL:		133		288		619		1,33

	FHWA-RI	D-77-108 HIGH	IWAY N	IOISE I	PREDIC		IODEL (9/1	12/202	:1)		
Road Nan	rio: 2042+P ne: Hosking Av ent: e/o Wible F						Name: Ma umber: 13		Gateway		
SITE	SPECIFIC IN	IPUT DATA				N	IOISE MO	DDEL	INPUT	5	
Highway Data				S	ite Con	ditions	(Hard = 10), Soft	= 15)		
Average Daily	Traffic (Adt):	32,008 vehicle	es				Au	itos:	15		
Peak Hour	Percentage:	10.00%			Me	dium Tr	ucks (2 Ax	les):	15		
Peak H	lour Volume:	3,201 vehicle	s		He	avy Tru	cks (3+ Ax	les):	15		
Ve	ehicle Speed:	50 mph		v	ehicle l	Niv					
Near/Far La	ane Distance:	52 feet		Ľ		cleType	Di	ay E	Evening	Night	Daily
Site Data					1011			7.5%	12.9%	9.6%	
Ba	rrier Heiaht:	0.0 feet			Me	edium T	rucks: 84	4.8%	4.9%	10.3%	2.359
Barrier Type (0-W		0.0			ŀ	leavy T	rucks: 86	5.5%	2.7%	10.8%	5.289
	ist. to Barrier:	55.0 feet		Δ	loise Sc	urce Fl	evations (in fee	<i>t</i>)		
Centerline Dist.	to Observer:	55.0 feet			0.00 00	Auto			9		
Barrier Distance	to Observer:	0.0 feet			Mediu	n Truck	0.00				
Observer Height	(Above Pad):	5.0 feet				y Truck			Grade Adj	ustment	0.0
	ad Elevation:	0.0 feet						-			
Ro	ad Elevation:	0.0 feet		L	ane Equ		Distance		et)		
	Road Grade:	0.0%				Auto					
	Left View:	-90.0 degre				n Truck					
	Right View:	90.0 degre	es		Heav	y Truck	s: 48.55	9			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresnel	В	arrier Atte	en Ber	m Atten
Autos:		2.41		0.07		-1.20		.67	0.0		0.00
Medium Trucks:				0.09		-1.20		.87	0.0		0.00
Heavy Trucks:	85.38	-10.02		0.09)	-1.20	-5	.38	0.0	00	0.00
Unmitigated Nois											
VehicleType	Leq Peak Hou			Leq Ev		Leq	Night	L	.dn		VEL
Autos:			69.6		67.8		61.8		70.4		71.
Medium Trucks:			64.8		58.5		56.9		65.4		65
Heavy Trucks:			72.8		63.8		65.0		73.4		73
Vehicle Noise:			75.0		69.6		67.1		75.6	•	75.
Centerline Distan	ce to Noise Co	ontour (in feet)	70 /	D 4		-0.4		-10.4		-10.4
				70 d	BA	65	dBA	60	dBA	55	dBA
					400						
			Ldn: NEL:		130 136		280 292		602 630		1,298

FHWA	-RD-77	-108 HIGH	IWAY	NOISE	E PREDIC		IODEL ()/12/20	021)		
Scenario: E Road Name: Hosking Road Segment: w/o S. I							Name: 1 lumber: 1		ic Gateway		
SITE SPECIFIC	INPU	T DATA				ł	IOISE N	IODE	L INPUTS	3	
Highway Data					Site Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily Traffic (Ad	t): 16,	096 vehicle	es				,	Autos:	15		
Peak Hour Percentag	e: 10.	00%			Me	dium Tr	ucks (2 A	xles):	15		
Peak Hour Volum	e: 1,6	10 vehicle	s		He	avy Tru	cks (3+ A	xles):	15		
Vehicle Spee	d:	50 mph		ł	Vehicle I	Mix					
Near/Far Lane Distanc	e:	52 feet		ŀ		icleType		Dav	Evening	Night	Daily
Site Data					Ven			77.5%	•	9.6%	
		0.0 feet			М	edium T		84.8%		10.3%	2.52%
Barrier Heigh		0.0 reet			1	Heavy T		86.5%		10.8%	5.67%
Barrier Type (0-Wall, 1-Bern Centerline Dist. to Barrie		0.0 i5.0 feet									
Centerline Dist. to Observe		5.0 feet			Noise So				eet)		
Barrier Distance to Observe		0.0 feet				Auto		000			
Observer Height (Above Pag		5.0 feet				m Truck		297			
Pad Elevatio	·	0.0 feet			Heav	ry Truck	s: 8.0	004	Grade Adj	ustment	: 0.0
Road Elevatio		0.0 feet		ŀ	Lane Eq	uivalen	t Distand	e (in t	feet)		
Road Grad		0%				Auto			,		
Left Vie		0.0 degree	es		Mediu	m Truck	s: 48.	542			
Right Vie		0.0 degree			Heav	ry Truck	s: 48.	559			
FHWA Noise Model Calculat	ions										
VehicleType REMEL	Tra	affic Flow	Dis	stance	Finite	Road	Fresn	el	Barrier Atte	en Ber	m Atten
Autos: 70	.20	-0.60		0.0)7	-1.20		-4.67	0.0	00	0.000
Medium Trucks: 81	.00	-16.21		0.0)9	-1.20		-4.87	0.0	00	0.000
Heavy Trucks: 85	.38	-12.69		0.0	09	-1.20		-5.38	0.0	00	0.000
Unmitigated Noise Levels (v	vithout	Topo and	barri	er atter	nuation)						
VehicleType Leq Peak		Leq Day		Leq E	vening	Leq	Night		Ldn		VEL
Autos:	68.5		66.6		64.8		58.8		67.4		68.0
Medium Trucks:	63.7		62.2		55.8		54.3		62.7		63.0
Heavy Trucks:	71.6		70.2		61.1		62.4		70.7		70.8
Vehicle Noise:	73.8		72.2		66.7		64.4		72.8	1	73.1
Centerline Distance to Noise	e Conto	ur (in feet)								
			L	70	dBA	65	dBA	6	60 dBA	55	dBA
			Ldn:		85		183		393		848
		Ci	NEL:		88		191		411		885

	FHWA-RI	D-77-108 HIGH	IWAY N	IOISE F	REDIC		IODEL	(9/12/20	021)		
Scenari									ic Gateway	/	
	e: Hosking Av					Job N	lumber:	13923			
Road Segmer	nt: w/o S. H Si										
	SPECIFIC IN	IPUT DATA							L INPUT	5	
Highway Data				Si	te Con	ditions	(Hard :	= 10, So	oft = 15)		
Average Daily	Traffic (Adt):	18,727 vehicl	es					Autos:	15		
Peak Hour	Percentage:	10.00%			Me	dium Tr	ucks (2	Axles):	15		
Peak H	our Volume:	1,873 vehicle	s		He	avy Tru	cks (3+	Axles):	15		
Ve	hicle Speed:	50 mph		V	ehicle I	Mix					
Near/Far La	ne Distance:	52 feet		-		icleType	9	Dav	Evening	Night	Daily
Site Data							Autos:	77.5%	12.9%	9.6%	92.96%
Ra	rier Height:	0.0 feet			М	edium T	rucks:	84.8%	4.9%	10.3%	2.179
Barrier Type (0-W	•	0.0			1	leavy T	rucks:	86.5%	2.7%	10.8%	4.879
Centerline Dis	. ,	55.0 feet									
Centerline Dist.		55.0 feet		N	oise So	ource E			eet)		
Barrier Distance		0.0 feet				Auto		.000			
Observer Height (Above Pad):	5.0 feet				m Truck		.297	0		
Pa	d Elevation:	0.0 feet			Heav	ry Truck	s: 8	.004	Grade Adj	usimeni	0.0
Roa	d Elevation:	0.0 feet		La	ane Eq	uivalen	t Distar	ice (in f	feet)		
F	Road Grade:	0.0%				Auto	s: 48	.724			
	Left View:	-90.0 degre	es		Mediu	m Truck	s: 48	.542			
	Right View:	90.0 degre	es		Heav	y Truck	's: 48	.559			
FHWA Noise Mode	l Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista		Finite	Road	Fres		Barrier Atte		m Atten
Autos:	70.20			0.07		-1.20		-4.67	0.0		0.00
Medium Trucks:	81.00			0.09		-1.20		-4.87		000	0.00
Heavy Trucks:	85.38	-12.69		0.09		-1.20		-5.38	0.0	000	0.00
Unmitigated Noise			barrier	attenu	ation)						
	Leq Peak Hou			Leq Eve		Leq	Night		Ldn		VEL
Autos:	69		67.3		65.5		59		68.1		68.
Medium Trucks:	63		62.2		55.8		54	-	62.7		63.
Heavy Trucks:		.6	70.2		61.1		62		70.7		70.
Vehicle Noise:	74	.0	72.4		67.2		64	.6	73.0)	73.
Centerline Distanc	e to Noise Co	ontour (in feel)					_			
			L	70 dE		65	dBA	-	i0 dBA		dBA
			Ldn:		88		18		407		876
			NEL		92		19		426		917

Monday, November 8, 2021

	D-77-108 HIGH	NAY NO	ISE I	PREDIC	TION M	ODEL (9	/12/2	021)		
Scenario: 2024 Road Name: Hosking A Road Segment: w/o S. H S						Name: N umber: 1		ic Gateway		
SITE SPECIFIC I	NPUT DATA				N	OISE M	ODE	L INPUTS	;	
Highway Data			S	Site Con	ditions	(Hard = 1	10, So	oft = 15)		
Average Daily Traffic (Adt):	20,609 vehicle	s				A	utos:	15		
Peak Hour Percentage:	10.00%			Med	dium Tru	icks (2 A	xles):	15		
Peak Hour Volume:	2,061 vehicles			Hea	avy Truc	:ks (3+ A	xles):	15		
Vehicle Speed:	50 mph		v	/ehicle N	lix					
Near/Far Lane Distance:	52 feet		-		cleType		Day	Evening	Night	Daily
Site Data			+				77.5%	•	9.6%	
Barrier Height:	0.0 feet			Me	dium Tr	ucks: 8	34.8%	4.9%	10.3%	2.52%
Barrier Type (0-Wall, 1-Berm):	0.0			H	leavy Tr	ucks: 8	36.5%	2.7%	10.8%	5.67%
Centerline Dist. to Barrier:	55.0 feet		-							
Centerline Dist. to Observer:	55.0 feet		N	loise So				eet)		
Barrier Distance to Observer:	0.0 feet				Autos	. 0.0				
Observer Height (Above Pad):	5.0 feet				n Trucks			Grade Adju	ictment	0.0
Pad Elevation:	0.0 feet			Heav	y Trucks	5: 8.0	04	Grade Aujo	Journeriu	0.0
Road Elevation:	0.0 feet		L	ane Equ	iivalent	Distanc	e (in	feet)		
Road Grade:	0.0%				Autos	s: 48.7	24			
Left View:	-90.0 degree	s		Mediur	n Trucks	s: 48.5	42			
Right View:	90.0 degree	s		Heav	y Trucks	s: 48.5	59			
FHWA Noise Model Calculatio	ns									
VehicleType REMEL	Traffic Flow	Distand	ce	Finite	Road	Fresne	e/	Barrier Atte	n Ber	m Atten
Autos: 70.2	0.47		0.07	7	-1.20	-	4.67	0.0	00	0.000
Medium Trucks: 81.0	-15.14		0.09	9	-1.20	-	4.87	0.0	00	0.000
Heavy Trucks: 85.3	3 -11.62		0.09	9	-1.20	-	5.38	0.0	00	0.000
Unmitigated Noise Levels (wit										
VehicleType Leq Peak Ho			q Ev	rening	Leq	Night		Ldn		IEL
		67.6		65.9		59.8		68.4		69.
		33.2		56.9		55.3		63.8		64.
	-	71.2		62.2		63.4		71.8		71.9
		3.3		67.8		65.5		73.9		74.2
Centerline Distance to Noise C	Contour (in feet)	-	70 d	IRΔ	65 /	IBA		50 dBA	55	dBA
	,	dn:	, o u	100	001	215		464	55	1.000
		IEL:		100		215		404		1.043
	0.0	-				0				.,

	FHWA-R	0-77-108 HIGH	IWAY N	DISE F	PREDIC	TION M	IODEL (9/	12/20	21)		
Road Nam	io: 2024+P ne: Hosking Av nt: w/o S. H St						Name: M umber: 13		c Gateway		
	SPECIFIC IN	IPUT DATA							INPUTS	5	
Highway Data				S	ite Con	ditions	(Hard = 1	0, So	ft = 15)		
Average Daily	Traffic (Adt):	23,240 vehicl	es				A	utos:	15		
Peak Hour	Percentage:	10.00%			Me	dium Tri	ucks (2 Ax	les):	15		
Peak H	lour Volume:	2,324 vehicle	s		He	avy Tru	cks (3+ Ax	les):	15		
Ve	hicle Speed:	50 mph		v	ehicle l	Mix					
Near/Far La	ne Distance:	52 feet		-		icleType	D	ay	Evening	Night	Daily
Site Data					10/1			7.5%	12.9%		92.74%
Ba	rrier Height:	0.0 feet			Me	edium T	rucks: 8	4.8%	4.9%	10.3%	2.23%
Barrier Type (0-W		0.0			ŀ	leavy T	rucks: 8	6.5%	2.7%	10.8%	5.03%
Centerline Di	. ,	55.0 feet		N	laise Sa	urco El	evations	(in fo	of)		
Centerline Dist.	to Observer:	55.0 feet			0136 00	Auto			cij		
Barrier Distance	to Observer:	0.0 feet			Madiu	m Truck					
Observer Height (Above Pad):	5.0 feet				y Truck			Grade Adj	istment	· 0.0
Pa	ad Elevation:	0.0 feet			neav	y much	3. 0.00	/4	0/000//10/	Journome	. 0.0
Roa	ad Elevation:	0.0 feet		L	ane Equ	uivalent	Distance	(in f	eet)		
1	Road Grade:	0.0%				Auto	s: 48.72	24			
	Left View:	-90.0 degre	es		Mediur	m Truck	s: 48.54	12			
	Right View:	90.0 degre	es		Heav	y Truck	s: 48.55	59			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresne	/ I	Barrier Atte	en Ber	m Atten
Autos:	70.20	1.04		0.07	,	-1.20	-4	4.67	0.0	00	0.00
Medium Trucks:	81.00	-15.14		0.09)	-1.20	-4	1.87	0.0	00	0.00
Heavy Trucks:	85.38	-11.62		0.09)	-1.20	-{	5.38	0.0	00	0.00
Unmitigated Noise	e Levels (with	out Topo and	barrier a	attenu	uation)						
VehicleType	Leq Peak Hou			eq Ev		Leq	Night		Ldn		NEL
Autos:	70		68.2		66.4		60.4		69.0		69.
Medium Trucks:	64		63.2		56.9		55.3		63.8		64.
Heavy Trucks:	72	-	71.2		62.2		63.4		71.8		71.
Vehicle Noise:	75	.0	73.4		68.2		65.6		74.1		74.
Centerline Distant	ce to Noise Co	ontour (in feet)								
	ce to Noise Co	ontour (in feet		70 di		65	dBA	6	0 dBA	55	dBA
	ce to Noise Co) Ldn: NEL:	70 di	BA 103 107	65	dBA 221 231	6	0 dBA 476 498	55	dBA 1,026 1.073

	FHWA-RD	-77-108 HIGH	WAY NO	ISE PREDI		IODEL (9	/12/20	021)		
Scenario: Road Name: Road Segment:	Hosking Av.					Name: N lumber: 1		ic Gateway		
SITE SP	ECIFIC IN	PUT DATA						L INPUTS	5	
Highway Data				Site Co	nditions	(Hard =	10, So	ft = 15)		
Average Daily Tra	affic (Adt):	22,883 vehicle	s				Autos:	15		
Peak Hour Pe	rcentage:	10.00%		M	edium Tr	ucks (2 A	xles):	15		
Peak Hou	r Volume:	2,288 vehicle	3	H	eavy Tru	cks (3+ A	xles):	15		
Vehic	le Speed:	50 mph		Vehicle	Mix					
Near/Far Lane	Distance:	52 feet			hicleType		Dav	Evening	Niaht	Daily
Site Data							77.5%	•	9.6%	91.81%
Barrie	r Heiaht:	0.0 feet		٨	ledium T	rucks:	84.8%	4.9%	10.3%	2.52%
Barrier Type (0-Wall,		0.0			Heavy T	rucks:	86.5%	2.7%	10.8%	5.67%
Centerline Dist.	,	55.0 feet			· · ·					
Centerline Dist. to		55.0 feet		Noise S		evations		et)		
Barrier Distance to	Observer:	0.0 feet			Auto					
Observer Height (Ab	ove Pad):	5.0 feet			Im Truck			Our de Adi		
	Elevation:	0.0 feet		Hea	vy Truck	s: 8.0	104	Grade Adj	ustment.	0.0
Road	Elevation:	0.0 feet		Lane Ec	uivalen	t Distanc	e (in f	eet)		
Roa	ad Grade:	0.0%			Auto	s: 48.7	24			
	Left View:	-90.0 degree	es	Mediu	ım Truck	s: 48.5	642			
R	ight View:	90.0 degree	es	Hea	vy Truck	s: 48.5	59			
FHWA Noise Model (Calculations	;		1						
VehicleType	REMEL	Traffic Flow	Distan	ce Finite	e Road	Fresn	e/	Barrier Atte	n Ber	m Atten
Autos:	70.20	0.93		0.07	-1.20		4.67	0.0		0.000
Medium Trucks:	81.00	-14.69		0.09	-1.20		4.87	0.0		0.000
Heavy Trucks:	85.38	-11.16		0.09	-1.20		-5.38	0.0	00	0.000
Unmitigated Noise L				,						
	q Peak Hou			q Evening		Night		Ldn		VEL
Autos:	70.	-	68.1	66.3	-	60.3		68.9		69.5
Medium Trucks:	65.	-	63.7	57.3	-	55.8		64.3		64.5
Heavy Trucks:	73.		71.7	62.6		63.9		72.2		72.4
		3	73.7	68.2	2	65.9		74.3		74.6
Vehicle Noise:	75.	0								
Vehicle Noise: Centerline Distance							_			10.4
		ntour (in feet		70 dBA		dBA	6	0 dBA	55	dBA
		ntour (in feet,	Ldn:	70 dBA 107 112		dBA 231 241	6	0 dBA 497 519	55	dBA 1,072 1,119

		7-108 HIGHWAY	NUISE	PREDIC						
Scenario:								ic Gateway	'	
Road Name:					Job N	umber:	13923			
Road Segment:	w/o S. H St.									
	ECIFIC INPL	JT DATA						L INPUT	5	
Highway Data				Site Con	ditions	(Hard =	10, So	oft = 15)		
Average Daily Tra	ffic (Adt): 25	,514 vehicles					Autos:	15		
Peak Hour Pe	rcentage: 10	.00%		Mee	dium Tru	ucks (2)	Axles):	15		
Peak Hou	Volume: 2,8	551 vehicles		Hei	avy Truc	cks (3+)	Axles):	15		
Vehic	e Speed:	50 mph	F	Vehicle N	<i>lix</i>					
Near/Far Lane	Distance:	52 feet	F		cleTvpe		Dav	Evening	Night	Dailv
Site Data					A	Autos:	77.5%	•	9.6%	92.669
	r Height:	0.0 feet		Me	edium Ti	ucks:	84.8%	4.9%	10.3%	2.269
Barrier Type (0-Wall,		0.0		F	leavy Ti	ucks:	86.5%	2.7%	10.8%	5.089
Centerline Dist. t	,	55.0 feet	_							
Centerline Dist. to (55.0 feet	-	Noise So				et)		
Barrier Distance to (Observer:	0.0 feet			Auto		000			
Observer Height (Ab	ove Pad):	5.0 feet			n Truck		297	0		
	Elevation:	0.0 feet		Heav	y Truck:	s: 8.	004	Grade Adj	ustment.	0.0
Road I	Elevation:	0.0 feet		Lane Equ	iivalent	Distan	ce (in f	feet)		
Roa	d Grade: 0	.0%			Autos	s: 48.	724			
1	.eft View: -	90.0 degrees		Mediur	n Truck:	s: 48.	542			
Ri	ght View:	90.0 degrees		Heav	y Truck:	s: 48.	559			
FHWA Noise Model C		1								
			stance	Finite		Fresr		Barrier Atte		m Atten
Autos:	70.20	1.44	0.0		-1.20		-4.67		000	0.00
Medium Trucks:	81.00	-14.69	0.0		-1.20		-4.87		000	0.00
Heavy Trucks:	85.38	-11.16	0.0	9	-1.20		-5.38	0.0	000	0.00
Unmitigated Noise Le		· ·		<u> </u>			-			
	q Peak Hour	Leq Day	Leq E	vening	Leq	Night		Ldn		VEL
Autos:	70.5	68.6		66.8		60.		69.4		70.
Medium Trucks:	65.2	63.7		57.3		55.		64.3		64.
Heavy Trucks:	73.1	71.7		62.6		63.9		72.2		72.
Vehicle Noise:	75.4	73.9		68.6		66.	1	74.5)	74.
Centerline Distance t	o Noise Conte	our (in feet)								
		[70	dBA	65	dBA		i0 dBA		dBA
		Ldn:		110		236		509		1,097
		CNEL		115		247		532		1,147

Monday, November 8, 2021

FHWA	-RD-77-'	108 HIGH	WAY	NOISE	E PREDIC	TION MO	ODEL (9/12/2	021)			
Scenario: 2042 Road Name: Hosking Road Segment: w/o S. H						Project I Job Nu			tic Gatewa	ау		
SITE SPECIFIC	INPUT	DATA							L INPU	rs		
Highway Data					Site Con	ditions (Hard =	10, S	oft = 15)			
Average Daily Traffic (Adt	: 32,4	36 vehicle	s					Autos:	15			
Peak Hour Percentage	e: 10.0	0%			Me	dium Tru	cks (2 /	Axles).	15			
Peak Hour Volume	: 3,24	4 vehicles	;		He	avy Truc	ks (3+ ,	Axles).	15			
Vehicle Speed	f: 5	0 mph		ŀ	Vehicle I	Aix						
Near/Far Lane Distance	: 5	2 feet		ŀ		cleType		Dav	Evening	Nigh	t	Daily
Site Data							utos:	77.5%	•	•		91.81
Barrier Heigh	۰ n	.0 feet			Me	edium Tru	ucks:	84.8%	6 4.9%	10.3	%	2.52
Barrier Type (0-Wall, 1-Berm		.0			F	leavy Tru	ucks:	86.5%	6 2.7%	10.8	%	5.67
Centerline Dist. to Barrie		.0 feet		-	N 0-			- (6	41			
Centerline Dist. to Observe	r: 55	.0 feet		-	Noise So				eet)			
Barrier Distance to Observe	r: 0	.0 feet				Autos		000				
Observer Height (Above Pad): 5	0 feet				n Trucks	-	297	Our de A			
Pad Elevation	n: 0	.0 feet			Heav	y Trucks	: 8.	004	Grade A	ujusune	<i>m.</i> c	J.U
Road Elevation	n: 0	.0 feet			Lane Eq	livalent	Distan	ce (in	feet)			
Road Grade	e: 0.0	%				Autos	: 48	724				
Left Viev	/: -90	.0 degree	s		Mediur	n Trucks	: 48	542				
Right Viev	/: 90	.0 degree	s		Heav	y Trucks	: 48	559				
FHWA Noise Model Calculati	ons											
VehicleType REMEL	Traf	fic Flow	Dis	stance	Finite	Road	Fresi	nel	Barrier A	tten E	Berm	Atter
Autos: 70.	20	2.44		0.0)7	-1.20		-4.67	0	.000		0.00
Medium Trucks: 81.	00	-13.17		0.0)9	-1.20		-4.87	0	.000		0.00
Heavy Trucks: 85	38	-9.65		0.0)9	-1.20		-5.38	0	.000		0.00
Unmitigated Noise Levels (w	ithout T	opo and l	barrie	er atter	nuation)							
VehicleType Leq Peak I		Leq Day		Leq E	vening	Leq N			Ldn		CNE	
Autos:	71.5		69.6		67.8		61.		70			71
Medium Trucks:	66.7		65.2		58.8		57.3	-	65			66
Heavy Trucks:	74.6		73.2		64.2		65.4		73			73
Vehicle Noise:	76.8	1	75.2		69.8		67.4	4	75	.9		76
Centerline Distance to Noise	Contou	r (in feet)										
				70	dBA	65 d			60 dBA		55 dl	
			Ldn:		135		291		62	o		1.35
			IEL:		135		291		65	-		1.41

	FHWA-RI	0-77-108 HIGH	WAY NO	DISE P	PREDIC	TION M	IODEL (9/	12/20	021)		
Road Nam	io: 2042+P ne: Hosking Av nt: w/o S. H St						Name: M umber: 13		ic Gateway		
	SPECIFIC IN	IPUT DATA							L INPUTS	5	
Highway Data				Si	ite Con	ditions	(Hard = 1	0, So	oft = 15)		
Average Daily	Traffic (Adt):	35,067 vehicle	es				A	utos:	15		
Peak Hour	Percentage:	10.00%			Mee	dium Tri	ucks (2 Ax	les):	15		
Peak H	lour Volume:	3,507 vehicle	S		Hei	avy Tru	cks (3+ Ax	les):	15		
Ve	hicle Speed:	50 mph		Ve	ehicle N	Nix					
Near/Far La	ne Distance:	52 feet		-		cleType		ay	Evening	Night	Daily
Site Data					1011			7.5%	•		92.43%
Bai	rrier Height:	0.0 feet			Me	dium T	rucks: 8	4.8%	4.9%	10.3%	2.33%
Barrier Type (0-W		0.0			F	leavy Ti	rucks: 8	6.5%	2.7%	10.8%	5.24%
Centerline Dis	. ,	55.0 feet		AL.	oico So	urco El	evations	(in fe	of		
Centerline Dist.	to Observer:	55.0 feet		/44	0136 30	Auto			eu		
Barrier Distance	to Observer:	0.0 feet			Madium	n Truck					
Observer Height (Above Pad):	5.0 feet				y Truck			Grade Adju	ustment	. 0 0
Pa	ad Elevation:	0.0 feet			neav	y muck	5. 0.00	/4	Orade Hajt	Journeine	0.0
Roa	ad Elevation:	0.0 feet		Lá	ane Equ	iivalent	Distance	(in f	feet)		
1	Road Grade:	0.0%				Auto	s: 48.72	24			
	Left View:	-90.0 degree	es		Mediur	n Truck	s: 48.54	12			
	Right View:	90.0 degree	es		Heav	y Truck	s: 48.5	59			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distar	ice	Finite	Road	Fresne	1	Barrier Atte	en Ber	m Atten
Autos:	70.20	2.81		0.07		-1.20	-4	1.67	0.0	00	0.00
Medium Trucks:	81.00	-13.17		0.09		-1.20	-4	1.87	0.0	00	0.00
Heavy Trucks:	85.38	-9.65		0.09		-1.20		5.38	0.0	00	0.00
		out Tono and	barrier a	ttenu	ation)						
Unmitigated Noise	e Levels (with	out ropo una							Ldn	C	NEL
VehicleType	Leq Peak Hou	ir Leq Day		eq Eve		Leq					
VehicleType Autos:	Leq Peak Hou 71	Ir Leq Day	70.0	eq Eve	68.2	Leq	62.2		70.8		
VehicleType Autos: Medium Trucks:	Leq Peak Hou 71 66	ır Leq Day .9 .7	70.0 65.2	eq Eve	68.2 58.8	Leq	62.2 57.3		65.8		66.
VehicleType Autos: Medium Trucks: Heavy Trucks:	Leg Peak Hou 71 66 74	ir Leq Day .9 5.7 .6	70.0 65.2 73.2	eq Eve	68.2 58.8 64.2	Leq	62.2 57.3 65.4		65.8 73.8		66. 73.
VehicleType Autos: Medium Trucks:	Leq Peak Hou 71 66	ir Leq Day .9 5.7 .6	70.0 65.2	eq Eve	68.2 58.8	Leq	62.2 57.3		65.8		66. 73.
VehicleType Autos: Medium Trucks: Heavy Trucks:	Leq Peak Hou 71 66 74 76	<i>Ir Leq Day</i> .9 .7 .6 .9	70.0 65.2 73.2 75.3		68.2 58.8 64.2 70.0		62.2 57.3 65.4 67.5		65.8 73.8 76.0		66. 73. 76.
VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	Leq Peak Hou 71 66 74 76	r Leq Day .9 .7 .6 .9 ontour (in feet	70.0 65.2 73.2 75.3	eq Eve	68.2 58.8 64.2 70.0 BA		62.2 57.3 65.4 67.5 dBA	6	65.8 73.8 76.0		66. 73. 76.
VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	Leq Peak Hou 71 66 74 76	r Leq Day .9 .7 .6 .9 ontour (in feet	70.0 65.2 73.2 75.3		68.2 58.8 64.2 70.0		62.2 57.3 65.4 67.5	6	65.8 73.8 76.0		71.4 66.0 73.9 76.3 <i>dBA</i> 1,375 1.437

F	HWA-RD-	-77-108 HIGH	WAY	NOISE	PREDIC		IODEL (S	9/12/20	021)		
Scenario: E Road Name: Ho Road Segment: e/c							Name: 1 lumber: 1		ic Gateway		
SITE SPEC	IFIC INF	PUT DATA							L INPUTS	3	
Highway Data					Site Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily Traffic	(Adt): 1	14,586 vehicle	s				,	Autos:	15		
Peak Hour Perce	ntage:	10.00%			Me	dium Tr	ucks (2 A	xles):	15		
Peak Hour Ve	olume:	1,459 vehicles	6		He	avy Tru	cks (3+ A	xles):	15		
Vehicle 3	Speed:	50 mph		-	Vehicle I	Mix					
Near/Far Lane Dis	tance:	52 feet		-		icleType		Dav	Evening	Night	Daily
Site Data					10/1			77.5%	•	9.6%	
Barrier H	aight:	0.0 feet			M	edium T		84.8%		10.3%	
Barrier Type (0-Wall, 1-		0.0 1001			1	Heavy T	rucks:	86.5%	2.7%	10.8%	5.67%
Centerline Dist. to E		55.0 feet									
Centerline Dist. to Ob		55.0 feet		-	Noise So				eet)		
Barrier Distance to Ob		0.0 feet				Auto		000			
Observer Height (Above		5.0 feet				m Truck		297			
Pad Ele		0.0 feet			Heav	ry Truck	s: 8.0	004	Grade Adj	ustment	: 0.0
Road Ele	vation:	0.0 feet			Lane Eq	uivalen	t Distanc	e (in t	feet)		
Road	Grade:	0.0%				Auto	s: 48.	724			
Lef	View:	-90.0 degree	s		Mediu	m Truck	s: 48.	542			
Righ	View:	90.0 degree	s		Heav	ry Truck	s: 48.	559			
FHWA Noise Model Cal	culations										
VehicleType RE	MEL	Traffic Flow	Dis	stance	Finite	Road	Fresn	el	Barrier Atte	en Ber	m Atten
Autos:	70.20	-1.03		0.0		-1.20		-4.67	0.0		0.000
Medium Trucks:	81.00	-16.64		0.0		-1.20		-4.87	0.0		0.000
Heavy Trucks:	85.38	-13.12		0.0	9	-1.20		-5.38	0.0	00	0.000
Unmitigated Noise Leve	ls (witho	ut Topo and	barri	er atter	nuation)						
	Peak Hour			Leq E	vening		Night		Ldn		NEL
Autos:	68.0	-	66.1		64.4		58.3		66.9		67.6
Medium Trucks:	63.2	-	61.7		55.4		53.8		62.3		62.5
Heavy Trucks:	71.1		69.7		60.7		61.9		70.3		70.4
Vehicle Noise:	73.3	3	71.8		66.3		64.0		72.4		72.7
Centerline Distance to I	loise Cor	ntour (in feet)								r	
			L	70	dBA	65	dBA	6	60 dBA	55	dBA
			Ldn:		79		171		368		794
		CI	VEL:		83		179		385		829

	FHWA-RD	-77-108 HIGHW	AY NO	DISE P	REDIC	TION M	ODEL (9/12/2	021)		
Scenario:	E+P					Project	Name:	Majest	ic Gateway	/	
Road Name:	Hosking Av.					Job N	umber:	13923			
Road Segment:	e/o S. H St.										
	PECIFIC IN	PUT DATA							L INPUT	S	
Highway Data				Sit	e Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily Tr	affic (Adt):	15,463 vehicles						Autos:	15		
Peak Hour Pe	ercentage:	10.00%			Me	dium Tri	ucks (2	Axles):	15		
Peak Hou	ur Volume:	1,546 vehicles			He	avy Tru	cks (3+ .	Axles):	15		
Vehi	cle Speed:	50 mph		Ve	hicle I	Nix					
Near/Far Lane	Distance:	52 feet				cleType		Dav	Evening	Night	Daily
Site Data							Autos:	77.5%		9.6%	
Rarri	er Height:	0.0 feet			Me	edium T	ucks:	84.8%	4.9%	10.3%	2.389
Barrier Type (0-Wal		0.0			ŀ	leavy T	ucks:	86.5%	2.7%	10.8%	5.359
Centerline Dist.	. ,	55.0 feet				_					
Centerline Dist. to		55.0 feet		NO	ise So	urce El			et)		
Barrier Distance to	Observer:	0.0 feet				Auto		000			
Observer Height (Al		5.0 feet				n Truck		297	Out de Ad		
Pad	Elevation:	0.0 feet			Heav	y Truck	s: 8.	004	Grade Ad	usiment.	0.0
Road	Elevation:	0.0 feet		La	ne Equ	uivalent	Distan	ce (in i	feet)		
Ro	ad Grade:	0.0%				Auto	s: 48	724			
	Left View:	-90.0 degrees			Mediur	n Truck	s: 48	542			
F	Right View:	90.0 degrees			Heav	y Truck	s: 48	559			
FHWA Noise Model	Calculations										
VehicleType	REMEL	Traffic Flow	Distar		Finite		Fresi		Barrier Att		m Atten
Autos:	70.20	-0.75		0.07		-1.20		-4.67		000	0.00
Medium Trucks:	81.00	-16.64		0.09		-1.20		-4.87		000	0.00
Heavy Trucks:	85.38	-13.12		0.09		-1.20		-5.38	0.0	000	0.00
Unmitigated Noise L			-		- <u></u>						
	eq Peak Hou			eq Eve		Leq	Night		Ldn		VEL
Autos:	68.		5.4		64.7		58.		67.		67.
Medium Trucks:	63.		1.7		55.4		53.		62.		62
Heavy Trucks:	71.		9.7		60.7		61.		70.3		70.
Vehicle Noise:	73.	4 7	1.8		66.5		64.	0	72.	ō	72
Centerline Distance	to Noise Co	ntour (in feet)		70 /0			(8.4				(8.4
			. ட	70 dB		65	dBA		i0 dBA		dBA
			in:		80 84		173		373		804
		CNI					181		390		840

Monday, November 8, 2021

FHWA-	RD-77-108 HIGHV	VAY NOIS	SE PREDIC	TION MC	DEL (9/12/	2021)		
Scenario: 2024 Road Name: Hosking Road Segment: e/o S. H					<i>lame:</i> Maje mber: 1392	stic Gateway 3	/	
SITE SPECIFIC	INPUT DATA					EL INPUT	s	
Highway Data			Site Con	ditions (l	Hard = 10, 3	Soft = 15)		
Average Daily Traffic (Adt).	16,958 vehicles	6			Auto	s: 15		
Peak Hour Percentage.	10.00%				cks (2 Axles	,		
Peak Hour Volume:	1,696 vehicles		He	avy Truck	ks (3+ Axles	s): 15		
Vehicle Speed:			Vehicle I	Mix				
Near/Far Lane Distance.	52 feet		Veh	icleType	Day	Evening	Night	Daily
Site Data				A	utos: 77.5	% 12.9%	9.6%	91.81%
Barrier Height	0.0 feet		M	edium Tru	icks: 84.8	% 4.9%	10.3%	2.52%
Barrier Type (0-Wall, 1-Berm)			1	Heavy Tru	icks: 86.5	% 2.7%	10.8%	5.67%
Centerline Dist. to Barrier	55.0 feet		Noise Sc	ource Fle	vations (in	feet)		
Centerline Dist. to Observer	55.0 feet			Autos:		1000		
Barrier Distance to Observer	0.0 feet		Mediu	m Trucks				
Observer Height (Above Pad)	5.0 feet			vy Trucks:		Grade Ad	iustment:	0.0
Pad Elevation	0.0 1001							
Road Elevation	0.0 1001		Lane Eq		Distance (ii	n feet)		
Road Grade	0.070			Autos				
Left View	00.0 009.000			m Trucks:	10.012			
Right View.	90.0 degrees	6	Heav	y Trucks:	48.559			
FHWA Noise Model Calculation								
VehicleType REMEL	Traffic Flow	Distance		Road	Fresnel	Barrier Atte		n Atten
Autos: 70.2			0.07	-1.20	-4.6			0.00
Medium Trucks: 81.0			0.09	-1.20	-4.8		000	0.000
Heavy Trucks: 85.3	-12.47	C	0.09	-1.20	-5.3	8 0.0	000	0.00
Unmitigated Noise Levels (wi			,					
VehicleType Leq Peak H			Evening	Leq N	•	Ldn		IEL
		6.8	65.0		59.0	67.6		68.2
		2.4	56.0		54.5	62.9		63.2
	-	0.4	61.3		62.6	70.9		71.
Vehicle Noise:	74.0 7	2.4	66.9		64.6	73.0	J	73.3
Centerline Distance to Noise	Contour (in feet)							
			0 dBA	65 d		60 dBA		dBA
		dn:	88		189	407		878
	CN	EL:	92		197	425		916

FHWA	RD-77-	108 HIGI	IWAY	NOISE	E PREDIC	TION MO	DEL (S	0/12/20	021)		
Scenario: 2024+P Road Name: Hosking Road Segment: e/o S. H						Project N Job Nui			ic Gatewa	y	
SITE SPECIFIC	INPU	T DATA				NC	ISE N	IODE	L INPUT	s	
Highway Data					Site Con	ditions (H	lard =	10, So	oft = 15)		
Average Daily Traffic (Adt)	: 17,8	35 vehicl	es					Autos:	15		
Peak Hour Percentage	: 10.0	00%			Me	dium Truc	:ks (2 A	xles):	15		
Peak Hour Volume	: 1,78	34 vehicle	s		He	avy Truck	s (3+ A	xles):	15		
Vehicle Speed	: (50 mph			Vehicle I	Aiv					
Near/Far Lane Distance	: (52 feet				cleType		Dav	Evening	Night	Daily
Site Data						Au	tos:	77.5%	12.9%	9.6%	92.21
Barrier Height		0.0 feet			Me	edium Tru	cks:	84.8%	4.9%	10.3%	2.409
Barrier Type (0-Wall, 1-Berm)		0.0			ŀ	leavy Tru	cks:	86.5%	2.7%	10.8%	5.39
Centerline Dist. to Barrier	: 5	5.0 feet			Noise So	urce Elev	vations	: (in fe	et)		
Centerline Dist. to Observer	: 5	5.0 feet				Autos:		000			
Barrier Distance to Observe	:	0.0 feet			Mediu	n Trucks:	0.0	97			
Observer Height (Above Pad)	: :	5.0 feet				y Trucks:		004	Grade Ad	liustment	0.0
Pad Elevation	: (0.0 feet									
Road Elevation	: 1	0.0 feet			Lane Equ				feet)		
Road Grade		0%				Autos:					
Left View	: -9	0.0 degre	es			n Trucks:	48.5	542			
Right View	: 9	0.0 degre	es		Heav	y Trucks:	48.5	559			
FHWA Noise Model Calculati											
VehicleType REMEL		ffic Flow		istance	Finite		Fresn	-	Barrier Att		rm Atten
Autos: 70.		-0.13		0.0		-1.20		-4.67		000	0.00
Medium Trucks: 81.		-15.99		0.0		-1.20		-4.87		000	0.00
Heavy Trucks: 85.		-12.47		0.0		-1.20		-5.38	0.	000	0.00
Unmitigated Noise Levels (w	-	_			,	1.000			Ldn		NEL
VehicleType Leq Peak H Autos:	68.9	Leq Da	y 67.0		Evening 65.3	Leq N	ignt 59.2		Lan 67.		INEL 68.
Medium Trucks:	63.9		62.4		56.0		54.5		62.		63
Heavy Trucks:	71.8		70.4		61.3		62.6		70		71
Vehicle Noise:	74.1		70.4		67.1		64.7		70.	-	73
					07.1		04.7		75.		15
Centerline Distance to Noise	Conto	ur (in fee	<i>t)</i>	70	dBA	65 dF	ЗА	6	0 dBA	55	dBA
			Ldn:			50 01			412		88
					89		191				

FHWA-RD-	77-108 HIGHWAY	NOISE	PREDIC		IODEL (9	/12/20	021)		
Scenario: 2029 Road Name: Hosking Av. Road Segment: e/o S. H St.					Name: N lumber: 1		ic Gateway		
SITE SPECIFIC INF	PUT DATA						L INPUTS	3	
Highway Data			Site Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily Traffic (Adt): 1	9,018 vehicles				A	Autos:	15		
Peak Hour Percentage:	10.00%		Me	dium Tr	ucks (2 A	xles):	15		
Peak Hour Volume:	,902 vehicles		He	avy Tru	cks (3+ A	xles):	15		
Vehicle Speed:	50 mph	-	Vehicle I	Mix					
Near/Far Lane Distance:	52 feet	-		icleType		Day	Evening	Night	Daily
Site Data						77.5%	•	9.6%	
Barrier Height:	0.0 feet		Me	edium T	rucks:	84.8%	4.9%	10.3%	2.52%
Barrier Type (0-Wall, 1-Berm):	0.0		ŀ	Heavy T	rucks:	86.5%	2.7%	10.8%	5.67%
Centerline Dist. to Barrier:	55.0 feet	-	Noise Sc	uree El	lovationa	lin fe	ati		
Centerline Dist. to Observer:	55.0 feet	H	NUISe 30	Auto		00	el)		
Barrier Distance to Observer:	0.0 feet		Madiu	m Truck					
Observer Height (Above Pad):	5.0 feet			vy Truck			Grade Adj	ustment	. 0 0
Pad Elevation:	0.0 feet	L	near	y much	3. 0.0		0/000/10	uoumoni	0.0
Road Elevation:	0.0 feet	4	Lane Eq				feet)		
Road Grade:	0.0%			Auto					
Left View:	-90.0 degrees			m Truck					
Right View:	90.0 degrees		Heav	ry Truck	s: 48.5	59			
FHWA Noise Model Calculations									
		stance	Finite		Fresn		Barrier Atte		m Atten
Autos: 70.20	0.13	0.0		-1.20		4.67	0.0		0.000
Medium Trucks: 81.00	-15.49	0.0	-	-1.20		4.87	0.0		0.000
Heavy Trucks: 85.38	-11.97	0.0	19	-1.20		-5.38	0.0	00	0.000
Unmitigated Noise Levels (without									
VehicleType Leq Peak Hour		Leq E	vening		Night		Ldn		VEL
Autos: 69.2			65.5		59.5		68.1		68.7
Medium Trucks: 64.4			56.5		55.0		63.4		63.7
Heavy Trucks: 72.3 Vehicle Noise: 74.5			61.8		63.1 65.1		71.4		71.6
			67.4		00.1		73.5	,	73.8
Centerline Distance to Noise Cor	ntour (in feet)	70	-/0.4		dBA		0.404		-10.4
	Ldn:	70	dBA 95	65	dBA 204	6	0 dBA 440	55	dBA
	Lan: CNEL:							947 989	
	CNEL.		99		213		459		989

	FHWA-RD	0-77-108 HIGH	WAY	NOISE P	REDICTION	IODEL	(9/12/2	021)		
Road Nam	io: 2029+P e: Hosking Av nt: e/o S. H St.						: Majest : 13923	tic Gateway	/	
SITE	SPECIFIC IN	PUT DATA				NOISE	MODE		s	
Highway Data				Si	te Conditions	(Hard	= 10, So	oft = 15)		
Average Daily	Traffic (Adt):	19,895 vehicle	es				Autos:	15		
Peak Hour	Percentage:	10.00%			Medium Ti	rucks (2	Axles):	15		
Peak H	our Volume:	1,990 vehicles	s		Heavy Tru	icks (3+	Axles).	15		
Ve	hicle Speed:	50 mph		14	hicle Mix					
Near/Far La	ne Distance:	52 feet		Ve	VehicleType	•	Dav	Evening	Night	Daily
Site Data						Autos:	77.5%	•	9.6%	
		0.0.6			Medium 1		84.8%		10.3%	2.419
	rrier Height:	0.0 feet 0.0			Heavy 1				10.8%	5.429
Barrier Type (0-W Centerline Dis		0.0 55.0 feet							10.070	0.12
Centerline Dist.		55.0 feet		No	oise Source E	levatio	ns (in f	eet)		
Barrier Distance		0.0 feet			Auto	os: (0.000			
Observer Height (5.0 feet			Medium Truck	(S: 2	2.297			
	ad Elevation:	0.0 feet			Heavy Truck	(S: 1	3.004	Grade Ad	justment:	0.0
	ad Elevation:	0.0 feet		La	ne Equivalen	t Dista	nce (in	feet)		
	Road Grade:	0.0%			Auto		3.724			
,	Left View:	-90.0 degree	be be		Medium Truck		3.542			
	Right View:	90.0 degree			Heavy Truck	(s: 4	3.559			
FHWA Noise Mode	el Calculations									
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite Road	Fre		Barrier Att		m Atten
Autos:	70.20	0.34		0.07	-1.20		-4.67		000	0.00
Medium Trucks:	81.00	-15.49		0.09	-1.20		-4.87		000	0.00
Heavy Trucks:	85.38	-11.97		0.09	-1.20		-5.38	0.0	000	0.00
Unmitigated Noise			-		,				Т	
VehicleType	Leq Peak Hou			Leq Eve		Night		Ldn		VEL
Autos:	69		67.5		65.7	59		68.3	-	68.
Medium Trucks:	64		62.9		56.5	55		63.4		63.
Heavy Trucks:	72		70.9		61.8	63		71.4		71.
Vehicle Noise:	74	.5	73.0		67.6	65	.2	73.6	j.	73.
Centerline Distand	e to Noise Co	ontour (in feet,)	70 /2		-10.4		0.404		10.4
			L	70 dE		dBA		50 dBA		dBA
			Ldn: NEL:		96	20	-	444		956
		CI	VEL.		100	21	5	464		999

Monday, November 8, 2021

	FHWA-RD	D-77-108 HIGH	WAY NO	ISE I	PREDIC	TION M	ODEL (9	/12/2	021)		
Road Nam	io: 2042 ne: Hosking Av nt: e/o S. H St.						Name: N umber: 1		ic Gateway		
	SPECIFIC IN	IPUT DATA							L INPUTS		
Highway Data				S	ite Cond	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	27,676 vehicle	es				A	utos:	15		
Peak Hour	Percentage:	10.00%			Med	dium Tru	ıcks (2 A	xles):	15		
Peak H	lour Volume:	2,768 vehicles	5		Hea	avy Truc	cks (3+ A	xles):	15		
Ve	hicle Speed:	50 mph		v	ehicle N	lix					
Near/Far La	ne Distance:	52 feet		-		cleType		Day	Evening	Night	Daily
Site Data								77.5%	•	9.6%	91.819
Ba	rrier Heiaht:	0.0 feet			Me	dium Ti	ucks:	34.8%	4.9%	10.3%	2.52%
Barrier Type (0-W		0.0			h	leavy Tr	ucks:	36.5%	2.7%	10.8%	5.67%
Centerline Di	st. to Barrier:	55.0 feet			oiso So	urco El	evations	(in f	nof)		
Centerline Dist.	to Observer:	55.0 feet			0136 00	Autos					
Barrier Distance	to Observer:	0.0 feet			Medium	n Trucks	. 0.0				
Observer Height	(Above Pad):	5.0 feet				y Trucks			Grade Adju	stment:	0.0
P	ad Elevation:	0.0 feet						-			
Ro	ad Elevation:	0.0 feet		L	ane Equ		Distanc		feet)		
	Road Grade:	0.0%				Autos					
	Left View:	-90.0 degree				n Trucks					
	Right View:	90.0 degree	es		Heav	y Trucks	s: 48.5	59			
FHWA Noise Mod	el Calculation	s		_							
VehicleType	REMEL	Traffic Flow	Distan	се	Finite I	Road	Fresne	e/	Barrier Atte	n Berr	n Atten
Autos:	70.20	1.75		0.07		-1.20		4.67	0.00	00	0.00
Medium Trucks:	81.00			0.09		-1.20		4.87	0.00		0.00
Heavy Trucks:	85.38	-10.34		0.09		-1.20		5.38	0.00	00	0.00
Unmitigated Nois											
VehicleType	Leq Peak Hou			q Ev	ening	Leq	Night		Ldn	CN	IEL
Autos:	70		68.9		67.2		61.1		69.7		70.3
Medium Trucks:			64.5		58.2		56.6		65.1		65.3
Heavy Trucks:	73	-	72.5		63.5		64.7		73.1		73.
Vehicle Noise:	-		74.5		69.1		66.7		75.2		75.
Centerline Distan	ce to Noise Co	ontour (in feet)	-								
				70 d		65 (dBA	6	60 dBA	55	dBA
			Ldn: NEL:		122 127		262 274		565 589		1,217

FHWA-RD-77-108 HIGHW/	AY NOISE	PREDIC	TION M	ODEL (9	/12/20	21)		
Scenario: 2042+P Road Name: Hosking Av. Road Segment: e/o S. H St.				Name: N umber: 1		c Gateway		
SITE SPECIFIC INPUT DATA						L INPUTS	;	
Highway Data	4	Site Con	ditions ('Hard = 1	0, So	ft = 15)		
Average Daily Traffic (Adt): 28,553 vehicles				A	utos:	15		
Peak Hour Percentage: 10.00%		Mee	dium Tru	cks (2 A	kles):	15		
Peak Hour Volume: 2,855 vehicles		Hea	avy Truc	ks (3+ A	kles):	15		
Vehicle Speed: 50 mph		Vehicle N	Nix					
Near/Far Lane Distance: 52 feet	H		cleType	[Day	Evening	Night	Daily
Site Data					7.5%	12.9%	9.6%	
Barrier Height: 0.0 feet		Me	edium Tr	ucks: 8	4.8%	4.9%	10.3%	2.44%
Barrier Type (0-Wall, 1-Berm): 0.0		F	leavy Tr	ucks: 8	86.5%	2.7%	10.8%	5.50%
Centerline Dist. to Barrier: 55.0 feet	H	Noise So	urco Ek	wations	(in fo	of		
Centerline Dist. to Observer: 55.0 feet	Ľ	140/36 30	Autos			ei)		
Barrier Distance to Observer: 0.0 feet		Madium	n Trucks	. 0.0				
Observer Height (Above Pad): 5.0 feet			y Trucks			Grade Adju	istment [.]	0.0
Pad Elevation: 0.0 feet					•			0.0
Road Elevation: 0.0 feet	1	Lane Equ				eet)		
Road Grade: 0.0%			Autos		24			
Left View: -90.0 degrees			n Trucks					
Right View: 90.0 degrees		Heav	y Trucks	48.5	59			
FHWA Noise Model Calculations								
VehicleType REMEL Traffic Flow	Distance	Finite	Road	Fresne	e/ 1	Barrier Atte	n Berr	m Atten
Autos: 70.20 1.90	0.0	7	-1.20	-	4.67	0.0	00	0.000
Medium Trucks: 81.00 -13.86	0.0	9	-1.20	-	4.87	0.0	00	0.000
Heavy Trucks: 85.38 -10.34	0.0	9	-1.20	-	5.38	0.0	00	0.000
Unmitigated Noise Levels (without Topo and bar	rrier atten	uation)						
VehicleType Leq Peak Hour Leq Day		vening	Leq I	•		Ldn	CN	VEL
Autos: 71.0 69.		67.3		61.3		69.9		70.5
Medium Trucks: 66.0 64.	-	58.2		56.6		65.1		65.3
Heavy Trucks: 73.9 72.	-	63.5		64.7		73.1		73.2
Vehicle Noise: 76.2 74.	6	69.2		66.8		75.2		75.5
Centerline Distance to Noise Contour (in feet)								
		dBA	65 0		6	0 dBA 568	55	dBA
								1.225
Ldı CNEI		122 128		264 276		506		1,220

Monday, November 8, 2021

APPENDIX 9.1:

CADNAA OPERATIONAL NOISE MODEL INPUTS

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13923 - Majestic Gateway

CadnaA Noise Prediction Model: 13923_02.cna Date: 08.11.21 Analyst: B. Lawson

Calculation Configuration

ParameterValueGeneral(user defined)Country(user defined)Max. Error (dB)0.00Max. Search Radius (#(Unit,LEN))2000.01Min. Dist Src to Rovr0.00Partition0.00Raster Factor0.50Max. Length of Section (#(Unit,LEN))999.99Min. Length of Section (#(Unit,LEN))1.01Min. Length of Section (#(Unit,LEN))1.00Proj. Ine SourcesOnProj. Ine SourcesOnReference Time Day (min)960.00Reference Time Night (min)480.00Daytime Penalty (dB)0.00Recr. Time Penalty (dB)5.00Night-time Penalty (dB)5.00Night-time Penalty (dB)0.00Standard Height (m)0.00Model of TerrainTriangulationReflection2Search Radius Src100.00Max. Distance Source - Revr100.00Min. Distance Source - Reflector1.00Industrial (ISO 9613)Lateral DiffractionSome ObjObst. within Area Src do not shieldOnScreeningIncl. Ground Att. over Barrier Dz with limit (20/25)Barrier Coefficients C1,2,33.0 20.0.0.0Temperature (#(Unit,TEMP))10Tenperature (#(Unit,SPEED))3.0	Configurat	ion
Country(user defined)Max. Error (dB)0.00Max. Search Radius (#(Unit,LEN))2000.01Min. Dist Src to Rovr0.00PartitionRaster FactorRaster Factor0.50Max. Length of Section (#(Unit,LEN))999.99Min. Length of Section (#(Unit,LEN))1.01Min. Length of Section (#(Unit,LEN))1.01Min. Length of Section (%)0.00Proj. Area SourcesOnProj. Area SourcesOnReference Time Day (min)960.00Reference Time Night (min)480.00Daytime Penalty (dB)0.00Recr. Time Penalty (dB)10.00DTMStandard Height (m)Model of TerrainTriangulationReflection1max. Order of Reflection2Search Radius Src100.00Search Radius Rovr1.00Min. Distance Source - Revr1000.0100.00Min. Distance Source - Reflector1.00Industrial (SO 9613)1Lateral Diffractionsome ObjObst. within Area Src do not shieldOnScreeningIncl. Ground Att. over Barrier Dz with limit (20/25)Barrier Coefficients C1,2,33.0 20.0.0Temperature (#(Unit,TEMP))10Tent_Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0		
Country(user defined)Max. Error (dB)0.00Max. Search Radius (#(Unit,LEN))2000.01Min. Dist Src to Rovr0.00PartitionRaster FactorRaster Factor0.50Max. Length of Section (#(Unit,LEN))999.99Min. Length of Section (#(Unit,LEN))1.01Min. Length of Section (#(Unit,LEN))1.01Min. Length of Section (%)0.00Proj. Area SourcesOnProj. Area SourcesOnReference Time Day (min)960.00Reference Time Night (min)480.00Daytime Penalty (dB)0.00Recr. Time Penalty (dB)10.00DTMStandard Height (m)Model of TerrainTriangulationReflection1max. Order of Reflection2Search Radius Src100.00Search Radius Rovr1.00Min. Distance Source - Revr1000.0100.00Min. Distance Source - Reflector1.00Industrial (SO 9613)1Lateral Diffractionsome ObjObst. within Area Src do not shieldOnScreeningIncl. Ground Att. over Barrier Dz with limit (20/25)Barrier Coefficients C1,2,33.0 20.0.0Temperature (#(Unit,TEMP))10Ten. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0	General	
Max. Error (dB)0.00Min. Dist Src to Rovr0.00Partition0.00Raster Factor0.50Max. Length of Section (#(Unit,LEN))999.99Min. Length of Section (#(Unit,LEN))991.99Min. Length of Section (#(Unit,LEN))1.01Min. Length of Section (#(Unit,LEN))0.00Proj. Line SourcesOnProj. Area SourcesOnReference Time Day (min)960.00Reference Time Night (min)480.00Daytime Penalty (dB)0.00Recr. Time Penalty (dB)10.00DTMStandard Height (m)Ondel TerrainTriangulationReflection100.00Model of TerrainTriangulationReflection2Search Radius Src100.00Search Radius Src100.00Min. Distance Source - Revr1000.00 1000.00Min. Distance Source - Reflector1.00Industrial (SD 9613)Lateral DiffractionLateral DiffractionSome ObjObst. within Area Src do not shieldOnScreeningIncl. Ground Att. over BarrierDz with limit (20/25)Barrier Coefficients C1,2,3Barrier Coefficients C1,2,33.0 20.0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0		(user defined)
Max. Search Radius (#(Unit,LEN))2000.01Min. Dist Src to Rcvr0.00Partition0.00Raster Factor0.50Max. Length of Section (#(Unit,LEN))999.99Min. Length of Section (#(Unit,LEN))1.01Min. Length of Section (#(Unit,LEN))1.01Min. Length of Section (#(Unit,LEN))0.00Proj. Line SourcesOnProj. Area SourcesOnRef. Time0.00Reference Time Day (min)480.00Daytime Penalty (dB)0.00Recr. Time Penalty (dB)0.00Recr. Time Penalty (dB)10.00DTM5.00Standard Height (m)0.00Model of TerrainTriangulationReflection2Search Radius Src100.00Max. Distance Source - Rcvr1000.00 1000.00Min. Distance Source - Reflector1.00Industrial (ISO 9613)1Lateral Diffractionsome ObjObst. within Area Src do not shieldOnScreeningIncl. Ground Att. over Barrier Dz with limit (20/25)Barrier Coefficients C1,2,33.0 20.0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0		
Min. Dist Src to Rov0.00Partition0.50Raster Factor0.50Mix. Length of Section (#(Unit,LEN))999.99Min. Length of Section (#(Unit,LEN))1.01Min. Length of Section (%)0.00Proj. Line SourcesOnProj. Area SourcesOnReference Time Day (min)960.00Reference Time Day (min)480.00Daytime Penalty (dB)0.00Recr. Time Penalty (dB)0.00Recr. Time Penalty (dB)0.00Model of TerrainTriangulationReflection2Search Radius Src100.00Max. Distance Source - Revr100.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)1.00Lateral Diffractionsome ObjObst. within Area Src do not shieldOnScreeningIncl. Ground Att. over Barrier Dz with limit (20/25)Barrier Coefficients C1,2,33.0 20.0.0Temperature (#(Unit,TEMP))10reil. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0		2000.01
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rel. Humidity (%) 70 Ground Absorption G 0.50 Wind Speed for Dir. (#(Unit,SPEED)) 3.0		10
Ground Absorption G 0.50 Wind Speed for Dir. (#(Unit,SPEED)) 3.0		70
Wind Speed for Dir. (#(Unit,SPEED)) 3.0		0.50
	Wind Speed for Dir. (#(Unit,SPEED))	3.0
	Roads (RLS-90)	
Strictly acc. to RLS-90	Strictly acc. to RLS-90	
Railways (FTA/FRA)		
Aircraft (???)		
Strictly acc. to AzB	Strictly acc. to AzB	

Receiver Noise Levels

Name	М.	ID		Level Lr		Lir	nit. Valı	ue		Land	l Use	Height		C	oordinates	
			Day	Night	CNEL	Day	Night	CNEL	Туре	Auto	Noise Type			Х	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
RECEIVERS		R1	36.9	36.8	43.4	55.0	50.0	0.0				5.00	а	5731996.16	2787441.42	5.00
RECEIVERS		R2	43.6	43.6	50.2	55.0	50.0	0.0				5.00	а	5733153.76	2789045.50	5.00
RECEIVERS		R3	46.1	46.1	52.7	55.0	50.0	0.0				5.00	а	5734435.07	2787561.81	5.00
RECEIVERS		R4	48.1	48.1	54.8	55.0	50.0	0.0				5.00	а	5734412.20	2787014.76	5.00
RECEIVERS		R5	47.7	47.6	54.3	55.0	50.0	0.0				5.00	а	5734396.83	2786179.70	5.00
RECEIVERS		R6	41.8	41.5	48.2	55.0	50.0	0.0				5.00	а	5734366.01	2785277.27	5.00
RECEIVERS		R7	39.1	39.0	45.6	55.0	50.0	0.0				5.00	а	5733507.83	2783590.60	5.00
RECEIVERS		R8	40.6	40.5	47.2	55.0	50.0	0.0				5.00	а	5732356.49	2784672.85	5.00
RECEIVERS		R9	41.8	41.7	48.4	55.0	50.0	0.0				5.00	а	5732124.93	2786390.59	5.00

Point Source(s)

Name	М.	ID	R	esult. PW	/L		Lw/L	i	Op	erating T	me	К0	Height		Co	oordinates	
			Day	Evening	Night	Туре	Value	norm.	Day	Special	Night				х	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(dB)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE		AC01	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	5733065.06	2785802.98	42.00
POINTSOURCE		AC02	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	5733059.71	2785572.99	42.00
POINTSOURCE		AC03	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	5733382.41	2785234.24	29.00
POINTSOURCE		AC04	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	5733373.50	2785583.69	29.00
POINTSOURCE		AC05	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	5733375.28	2785774.45	29.00
POINTSOURCE		AC06	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	5733585.66	2785781.59	29.00
POINTSOURCE		AC07	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	5733751.47	2785774.45	29.00

Name	M.	ID	R	esult. PW	'L		Lw/L	i	Ope	erating Ti	me	ко	Height		Co	oordinates	
			Day	Evening	Night	Туре	Value	norm.	Day	Special	Night				Х	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(dB)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE		AC08	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	5734013.55	2785769.10	29.00
POINTSOURCE		AC09	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	5734052.78	2786107.85	29.00
POINTSOURCE		AC10	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	5733016.92	2786041.89	54.00
POINTSOURCE		AC11	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	5733591.01	2786047.23	54.00
POINTSOURCE		AC12	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0		g	5733628.45	2787448.58	54.00
POINTSOURCE		AC13	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0		g	5733038.32	2787450.36	54.00
POINTSOURCE		AC14	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0		g	5732651.43	2786847.75	29.00
POINTSOURCE		AC15	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0		g	5732441.05	2786990.38	29.00
POINTSOURCE		AC16	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0		g	5732644.30	2787521.68	29.00
POINTSOURCE		AC17	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0		g	5732387.57	2787534.16	29.00
POINTSOURCE		DT01	84.0	84.0	84.0	Lw	84					0.0		a	5732686.41	2787510.14	3.00
POINTSOURCE		DT02 DT03	84.0 84.0	84.0 84.0	84.0 84.0	Lw	84 84					0.0 0.0		a	5732481.59 5733906.53	2787517.48 2785731.35	3.00 3.00
POINTSOURCE		DT03 DT04	84.0	84.0	84.0	Lw Lw	84 84					0.0		a a	5734095.93	2786034.54	3.00
POINTSOURCE		PARKOO	87.8	87.8	87.8	Lw	87.8					0.0		a	5732810.33	2785454.27	5.00
POINTSOURCE		PARK00 PARK01	87.8	87.8	87.8	Lw	87.8					0.0		a	5732350.91	2787428.65	5.00
POINTSOURCE		PARK01	87.8	87.8	87.8	Lw	87.8					0.0		a	5732870.99	2785391.31	5.00
POINTSOURCE		PARK02	87.8	87.8	87.8	Lw	87.8					0.0		a	5732347.24	2787361.11	5.00
POINTSOURCE		PARK02	87.8	87.8	87.8	Lw	87.8					0.0		a	5732763.35	2785836.61	5.00
POINTSOURCE		PARK03	87.8	87.8	87.8	Lw	87.8					0.0		a	5732346.51	2787298.71	5.00
POINTSOURCE		PARK03	87.8	87.8	87.8	Lw	87.8					0.0		a	5732725.35	2785776.49	5.00
POINTSOURCE		PARK04	87.8	87.8	87.8	Lw	87.8					0.0		a	5732343.57	2787237.78	5.00
POINTSOURCE		PARK04	87.8	87.8	87.8	Lw	87.8					0.0	5.00	a	5732822.90	2785774.79	5.00
POINTSOURCE		PARK05	87.8	87.8	87.8	Lw	87.8					0.0	5.00	a	5732441.21	2787107.84	5.00
POINTSOURCE		PARK05	87.8	87.8	87.8	Lw	87.8					0.0	5.00	а	5732782.63	2785716.94	5.00
POINTSOURCE		PARK06	87.8	87.8	87.8	Lw	87.8					0.0	5.00	а	5732507.28	2787153.35	5.00
POINTSOURCE		PARK06	87.8	87.8	87.8	Lw	87.8					0.0	5.00	а	5732794.54	2785652.28	5.00
POINTSOURCE		PARK07	87.8	87.8	87.8	Lw	87.8					0.0	5.00	а	5732571.89	2787104.90	5.00
POINTSOURCE		PARK07	87.8	87.8	87.8	Lw	87.8					0.0	5.00	a	5732805.32	2785597.26	5.00
POINTSOURCE		PARK08	87.8	87.8	87.8	Lw	87.8					0.0		а	5732573.35	2787242.92	5.00
POINTSOURCE		PARK08	87.8	87.8	87.8	Lw	87.8					0.0	5.00	a	5732824.03	2785551.32	5.00
POINTSOURCE		PARK09	87.8	87.8	87.8	Lw	87.8					0.0		а	5732576.29	2787364.05	5.00
POINTSOURCE		PARK09	87.8	87.8	87.8	Lw	87.8					0.0		a	5732883.59	2785593.29	5.00
POINTSOURCE		PARK10	87.8	87.8	87.8	Lw	87.8					0.0		a	5732510.95	2787303.12	5.00
POINTSOURCE		PARK10	87.8	87.8	87.8	Lw	87.8					0.0		а	5732885.85	2785692.55	5.00
POINTSOURCE		PARK11	87.8	87.8	87.8	Lw	87.8					0.0		a	5732508.75	2787429.39	5.00
POINTSOURCE		PARK11	87.8	87.8	87.8	Lw	87.8					0.0		a	5732884.72	2785783.29	5.00
POINTSOURCE		PARK12 PARK12	87.8	87.8 87.8	87.8	Lw	87.8					0.0		a	5732450.75 5732892.09	2787358.91 2785466.82	5.00 5.00
POINTSOURCE		PARK12 PARK13	87.8	87.8	87.8 87.8	Lw	87.8 87.8					0.0		a	5732445.62	2785466.82	5.00
POINTSOURCE		PARK13 PARK13	87.8 87.8	87.8	87.8	Lw	87.8					0.0		a a	5732933.50	2785448.67	5.00
POINTSOURCE		PARK13 PARK14	87.8	87.8	87.8	LW	87.8					0.0		a	5732687.14	2787411.03	5.00
POINTSOURCE		PARK14 PARK14	87.8	87.8	87.8	Lw	87.8					0.0		a	5732995.32	2785448.10	5.00
POINTSOURCE		PARK15	87.8	87.8	87.8	Lw	87.8					0.0		a	5732687.88	2787349.37	5.00
POINTSOURCE		PARK15	87.8	87.8	87.8	Lw	87.8					0.0		a	5733057.14	2785444.70	5.00
POINTSOURCE		PARK16	87.8	87.8	87.8	Lw	87.8					0.0		a	5732686.41	2787286.23	5.00
POINTSOURCE		PARK16	87.8	87.8	87.8	Lw	87.8					0.0		a	5733053.17	2785373.24	5.00
POINTSOURCE		PARK17	87.8	87.8	87.8	Lw	87.8					0.0	5.00	a	5732681.27	2787228.23	5.00
POINTSOURCE		PARK17	87.8	87.8	87.8	Lw	87.8					0.0	5.00	-	5733097.97	2785451.50	5.00
POINTSOURCE		PARK18	87.8	87.8	87.8	Lw	87.8					0.0	5.00	а	5732681.27	2787169.50	5.00
POINTSOURCE		PARK18	87.8	87.8	87.8	Lw	87.8					0.0	5.00	a	5733104.21	2785361.32	5.00
POINTSOURCE		PARK19	87.8	87.8	87.8	Lw	87.8					0.0	5.00	а	5732938.21	2787447.00	5.00
POINTSOURCE		PARK19	87.8	87.8	87.8	Lw	87.8					0.0	5.00	а	5733184.18	2785454.91	5.00
POINTSOURCE		PARK20	87.8	87.8	87.8	Lw	87.8					0.0	5.00	а	5732631.82	2786740.77	5.00
POINTSOURCE		PARK20	87.8	87.8	87.8	Lw	87.8					0.0	5.00	а	5733181.35	2785355.09	5.00
POINTSOURCE		PARK21	87.8	87.8	87.8	Lw	87.8					0.0	5.00	а	5733851.17	2787453.02	5.00
POINTSOURCE		PARK21	87.8	87.8	87.8	Lw	87.8					0.0	5.00	-	5732958.45	2785340.91	5.00
POINTSOURCE		PARK22	87.8	87.8	87.8	Lw	87.8					0.0	5.00	-	5734003.16	2787437.71	5.00
POINTSOURCE		PARK22	87.8	87.8	87.8	Lw	87.8					0.0	5.00	-	5733046.93	2785307.44	5.00
POINTSOURCE		PARK23	87.8	87.8	87.8	Lw	87.8					0.0	5.00	-	5733937.37	2787395.74	5.00
POINTSOURCE		PARK23	87.8	87.8	87.8	Lw	87.8					0.0	5.00	-	5733195.53	2785245.62	5.00
POINTSOURCE		PARK24	87.8	87.8	87.8	Lw	87.8					0.0	5.00	-	5734002.03	2787369.08	5.00
POINTSOURCE		PARK24	87.8	87.8	87.8	Lw	87.8					0.0	5.00	-		2785405.56	5.00
POINTSOURCE		PARK25	87.8	87.8	87.8	Lw	87.8					0.0		-	5733936.81	2787297.62	5.00
POINTSOURCE		PARK25	87.8	87.8	87.8	Lw	87.8					0.0	5.00	-		2785443.56	5.00
		PARK26 PARK26	87.8 87.8	87.8 87.8	87.8 87.8	Lw Lw	87.8 87.8					0.0	5.00 5.00	-		2787396.87	5.00 5.00
POINTSOURCE		PARK26 PARK27		87.8	87.8 87.8		87.8 87.8					0.0		-	5733289.11 5734063.28	2785369.83	5.00
			87.8	87.8	87.8 87.8	Lw	87.8 87.8					0.0		a		2787293.65	
POINTSOURCE POINTSOURCE		PARK27 PARK28	87.8 87.8	87.8	87.8 87.8	Lw Lw	87.8 87.8					0.0	5.00 5.00	-	5733350.93 5734114.90	2785403.29 2787437.14	5.00 5.00
POINTSOURCE		PARK28	87.8	87.8	87.8	LW	87.8					0.0	5.00	-	5733400.84	2787437.14	5.00
POINTSOURCE		PARK28 PARK29	87.8	87.8	87.8	LW	87.8					0.0	5.00	-	5734114.33	2785444.70	5.00
POINTSOURCE		PARK29 PARK29	87.8	87.8	87.8	Lw	87.8					0.0	5.00	-	5733397.44	2785357.35	5.00
POINTSOURCE		PARK29 PARK30	87.8	87.8	87.8	LW	87.8					0.0	5.00	-	5733935.67	2787197.80	5.00
POINTSOURCE		PARK30 PARK31	87.8	87.8	87.8	Lw	87.8					0.0	5.00	-		2787137.80	5.00
					87.8	Lw	87.8						5.00	-			
POINTSOURCE		PARK32	87.8	87.8	07.0		07.0					0.0	5.00	a	3734030.40	2787071.89	5.00

Name	M.	ID	R	esult. PW	'L		Lw/L	i	Ope	erating Ti	me	ко	Height		C	oordinates	
			Day	Evening	Night	Туре	Value		Day	Special	Night				X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(dB)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE		PARK34	87.8	87.8	87.8	Lw	87.8					0.0	5.00	а	5734062.15	2787194.96	5.00
POINTSOURCE		PARK35	87.8	87.8	87.8	Lw	87.8					0.0	5.00	а	5733881.22	2787119.53	5.00
POINTSOURCE		PARK36	87.8	87.8	87.8	Lw	87.8					0.0	5.00	а	5733933.40	2787080.39	5.00
POINTSOURCE		PARK37	87.8	87.8	87.8	Lw	87.8					0.0	5.00	а	5733878.39	2786990.22	5.00
POINTSOURCE		PARK38	87.8	87.8	87.8	Lw	87.8					0.0	5.00	а	5733927.73	2786951.65	5.00
POINTSOURCE		PARK39	87.8	87.8	87.8	Lw	87.8					0.0	5.00	а	5733930.57	2786806.45	5.00
POINTSOURCE		PARK40	87.8	87.8	87.8	Lw	87.8					0.0	5.00	а	5733995.79	2787000.42	5.00
POINTSOURCE		PARK41	87.8	87.8	87.8	Lw	87.8					0.0	5.00	а	5734059.31	2786948.81	5.00
POINTSOURCE		PARK42	87.8	87.8	87.8	Lw	87.8					0.0	5.00	а	5733994.09	2786872.25	5.00
POINTSOURCE		PARK43	87.8	87.8	87.8	Lw	87.8					0.0	5.00	a	5734109.22	2786868.84	5.00
POINTSOURCE		PARK44	87.8	87.8	87.8 87.8	Lw	87.8					0.0	5.00	a	5733880.09	2786866.01	5.00
POINTSOURCE		PARK45 PARK46	87.8 87.8	87.8 87.8	87.8	Lw Lw	87.8 87.8					0.0	5.00	a a	5734055.91 5734104.12	2786807.02 2786750.87	5.00 5.00
POINTSOURCE		PARK40 PARK47	87.8	87.8	87.8	Lw	87.8					0.0	5.00	a a	5733989.55	2786743.50	5.00
POINTSOURCE		PARK48	87.8	87.8	87.8	LW	87.8					0.0	5.00	a	5733878.39	2786618.16	5.00
POINTSOURCE		PARK40	87.8	87.8	87.8	Lw	87.8					0.0	5.00	a	5733986.15	2786611.92	5.00
POINTSOURCE		PARK50	87.8	87.8	87.8	Lw	87.8					0.0	5.00	a	5734101.28	2786564.28	5.00
POINTSOURCE		PARK51	87.8	87.8	87.8	Lw	87.8					0.0	5.00	a	5733988.42	2786542.16	5.00
POINTSOURCE		PARK52	87.8	87.8	87.8	Lw	87.8					0.0	5.00	a	5733920.36	2786512.10	5.00
POINTSOURCE		PARK53	87.8	87.8	87.8	Lw	87.8					0.0	5.00	a	5733873.85	2786492.81	5.00
POINTSOURCE		PARK54	87.8	87.8	87.8	Lw	87.8					0.0	5.00	a	5734051.37	2786511.53	5.00
POINTSOURCE		PARK55	87.8	87.8	87.8	Lw	87.8					0.0	5.00	a	5733987.85	2786420.78	5.00
POINTSOURCE		PARK56	87.8	87.8	87.8	Lw	87.8					0.0	5.00	a	5734049.67	2786385.05	5.00
POINTSOURCE		PARK57	87.8	87.8	87.8	Lw	87.8					0.0		a	5733918.66	2786334.58	5.00
POINTSOURCE		PARK58	87.8	87.8	87.8	Lw	87.8					0.0	5.00	a	5733982.18	2786288.64	5.00
POINTSOURCE		PARK59	87.8	87.8	87.8	Lw	87.8					0.0	5.00	a	5734097.31	2786309.62	5.00
POINTSOURCE		PARK60	87.8	87.8	87.8	Lw	87.8					0.0	5.00	a	5733869.31	2786375.41	5.00
POINTSOURCE		PARK61	87.8	87.8	87.8	Lw	87.8					0.0	5.00	a	5734092.78	2786440.64	5.00
POINTSOURCE		PARK62	87.8	87.8	87.8	Lw	87.8					0.0	5.00	а	5733954.96	2786136.64	5.00
POINTSOURCE		PARK63	87.8	87.8	87.8	Lw	87.8					0.0	5.00	a	5733953.82	2786078.22	5.00
POINTSOURCE		PARK64	87.8	87.8	87.8	Lw	87.8					0.0	5.00	а	5733955.52	2786014.70	5.00
POINTSOURCE		PARK65	87.8	87.8	87.8	Lw	87.8					0.0	5.00	a	5733895.40	2786108.28	5.00
POINTSOURCE		PARK66	87.8	87.8	87.8	Lw	87.8					0.0	5.00	а	5733893.14	2785988.61	5.00
POINTSOURCE		PARK67	87.8	87.8	87.8	Lw	87.8					0.0	5.00	a	5733892.57	2785900.70	5.00
POINTSOURCE		PARK68	87.8	87.8	87.8	Lw	87.8					0.0	5.00	a	5733982.18	2785915.44	5.00
POINTSOURCE		PARK69	87.8	87.8	87.8	Lw	87.8					0.0	5.00	а	5734034.93	2785913.74	5.00
POINTSOURCE		PARK70	87.8	87.8	87.8	Lw	87.8					0.0	5.00	а	5733923.19	2785825.83	5.00
POINTSOURCE		PARK71	87.8	87.8	87.8	Lw	87.8					0.0	5.00	а	5734014.51	2785824.13	5.00
POINTSOURCE		PARK72	87.8	87.8	87.8	Lw	87.8					0.0	5.00	а	5733740.57	2785834.34	5.00
POINTSOURCE		PARK73	87.8	87.8	87.8	Lw	87.8					0.0	5.00	а	5733684.99	2785872.34	5.00
POINTSOURCE		PARK74	87.8	87.8	87.8	Lw	87.8					0.0	5.00	а	5733596.51	2785838.31	5.00
POINTSOURCE		PARK75	87.8	87.8	87.8	Lw	87.8					0.0	5.00	а	5733517.67	2785870.07	5.00
POINTSOURCE		PARK76	87.8	87.8	87.8	Lw	87.8					0.0	5.00	а	5733402.54	2785841.14	5.00
POINTSOURCE		PARK77	87.8	87.8	87.8	Lw	87.8					0.0	5.00	а	5733735.46	2785701.62	5.00
POINTSOURCE		PARK78	87.8	87.8	87.8	Lw	87.8					0.0	5.00	а	5733543.20	2785705.59	5.00
POINTSOURCE		PARK79	87.8	87.8	87.8	Lw	87.8					0.0	5.00	а	5733320.30	2785838.88	5.00
POINTSOURCE		PARK80	87.8	87.8	87.8	Lw	87.8					0.0	5.00	а	5733235.79	2785838.31	5.00
POINTSOURCE		PARK81	87.8	87.8	87.8	Lw	87.8					0.0			5733276.06		5.00
POINTSOURCE		PARK82	87.8	87.8	87.8	Lw	87.8					0.0			5733371.35		5.00
POINTSOURCE		PARK83	87.8	87.8	87.8	Lw	87.8					0.0			5733358.30	2785706.16	5.00
POINTSOURCE		PARK84	87.8	87.8	87.8	Lw	87.8					0.0			5733356.60	2785652.28	5.00
POINTSOURCE		PARK85	87.8	87.8	87.8	Lw	87.8					0.0			5733243.73	2785708.43	5.00
POINTSOURCE		PARK86	87.8	87.8	87.8	Lw	87.8					0.0	5.00		5733241.47	2785655.68	5.00
POINTSOURCE		PARK87	87.8	87.8	87.8	Lw	87.8					0.0	5.00		5733225.58	2785518.43	5.00
POINTSOURCE		PARK88	87.8	87.8	87.8	Lw	87.8					0.0	5.00		5733302.72	2785518.43	5.00
POINTSOURCE	-	PARK89	87.8	87.8	87.8	Lw	87.8 07.0					0.0	5.00		5733374.75	2785518.43	5.00
POINTSOURCE	-	PARK90	87.8	87.8	87.8	Lw	87.8					0.0	5.00		5733201.20	2785879.14	5.00
POINTSOURCE	-	PARK91	87.8	87.8	87.8	Lw	87.8 07.0					0.0	5.00	-	5733062.24	2785878.01	5.00
POINTSOURCE	-	PARK92	87.8	87.8	87.8	Lw	87.8					0.0	5.00		5732956.18	2785879.71	5.00
POINTSOURCE POINTSOURCE		PARK93 PARK94	87.8 87.8	87.8 87.8	87.8 87.8	Lw Lw	87.8 87.8					0.0	5.00	-	5732813.26 5732719.11	2785884.25 2785887.65	5.00 5.00
	-				87.8		87.8 87.8					0.0			5732607.94		
POINTSOURCE POINTSOURCE	-	PARK95 PARK96	87.8 87.8	87.8 87.8	87.8 87.8	Lw Lw	87.8 87.8					0.0			5732607.94	2785885.38	5.00 5.00
POINTSOURCE		PARK96 PARK97	87.8	87.8	87.8	LW	87.8 87.8					0.0	5.00			2785803.14	5.00
POINTSOURCE	-	PARK97 PARK98	87.8	87.8	87.8	LW	87.8					0.0			5732699.26	2785624.49	5.00
POINTSOURCE	-	PARK98 PARK99	87.8	87.8	87.8	LW	87.8 87.8					0.0	5.00		5732699.26	2785524.49	5.00
POINTSOURCE		TRASH01	89.0	89.0	89.0	LW	87.8 89		150.00	0.00	90.00	0.0		a a	5733344.92	2785353.18	5.00
POINTSOURCE	-	TRASH01	89.0	89.0	89.0	LW	89 89		150.00	0.00	90.00	0.0	5.00		5733108.53	2785884.78	5.00
POINTSOURCE	-	TRASH02	89.0	89.0	89.0	LW	89 89		150.00	0.00	90.00	0.0	5.00	-	5733108.53	2785884.78	5.00
		TRASH03	89.0	89.0	89.0	LW	89 89		150.00	0.00	90.00	0.0	5.00		5733717.12	2785881.85	5.00
PETIMENTATIO	-	TRASH04	89.0	89.0	89.0 89.0	LW	89 89		150.00	0.00	90.00	0.0	5.00		5733560.02	2785876.71	5.00
POINTSOURCE	-	TRASH05	89.0	89.0	89.0	LW	89 89		150.00	0.00	90.00	0.0	5.00		5733560.02	2785877.44	5.00
POINTSOURCE		11/23/100			89.0	LW	89 89		150.00	0.00	90.00	0.0	5.00	-	5734073.91	2785951.59	5.00
POINTSOURCE POINTSOURCE		TRACHOT				LVV	03		10.00	0.00	00.00	U.U	5.00	d	2124013.91	2.102201.29	5.00
POINTSOURCE POINTSOURCE POINTSOURCE		TRASH07	89.0 89.0	89.0 89.0		1.147	80		150.00	0.00	00 00	0.0	5 00	2	5732054 57	2785004 27	5 00
POINTSOURCE POINTSOURCE POINTSOURCE POINTSOURCE		TRASH08	89.0	89.0	89.0	Lw	89 89		150.00	0.00	90.00	0.0	5.00			2785996.37	5.00
POINTSOURCE POINTSOURCE POINTSOURCE						Lw Lw Lw	89 89 89		150.00 150.00 150.00	0.00 0.00 0.00	90.00 90.00 90.00	0.0 0.0 0.0	5.00	а	5732956.57 5732944.09 5732940.05	2785996.37 2785997.10 2787383.82	5.00 5.00 5.00

Name	М.	ID	R	esult. PW	'L		Lw / L	i	Op	erating Ti	me	К0	Height	C	oordinates	
			Day	Evening	Night	Туре	Value	norm.	Day	Special	Night			x	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(dB)	(ft)	(ft)	(ft)	(ft)
POINTSOURCE		TRASH12	89.0	89.0	89.0	Lw	89		150.00	0.00	90.00	0.0	5.00	a 5732709.08	2787459.46	5.00
POINTSOURCE		TRASH13	89.0	89.0	89.0	Lw	89		150.00	0.00	90.00	0.0	5.00	a 5732669.24	2786772.63	5.00
POINTSOURCE		TRASH14	89.0	89.0	89.0	Lw	89		150.00	0.00	90.00	0.0	5.00	a 5732311.30	2787502.68	5.00

Line Source(s)

Name	М.	ID	R	esult. PW	'L	R	esult. PW	Ľ		Lw / L	i	Op	erating Ti	me		Moving	Pt. Src		Height
			Day	Evening	Night	Day	Evening	Night	Туре	Value	norm.	Day	Special	Night		Number		Speed	
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	Day	Evening	Night	(mph)	(ft)
LINESOURCE		TRUCK01	91.6	91.6	91.6	62.3	62.3	62.3	Lw	91.6									8
LINESOURCE		TRUCK02	91.6	91.6	91.6	78.4	78.4	78.4	Lw	91.6									8
LINESOURCE		TRUCK03	91.6	91.6	91.6	75.9	75.9	75.9	Lw	91.6									8
LINESOURCE		TRUCK04	91.6	91.6	91.6	73.6	73.6	73.6	Lw	91.6									8
LINESOURCE		TRUCK05	91.6	91.6	91.6	66.6	66.6	66.6	Lw	91.6									8

Name	ŀ	lei	ght		Coordinat	es	
	Begin		End	х	У	z	Ground
	(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
LINESOURCE	8.00	а		5732776.19	2787609.33	8.00	0.00
				5732738.79	2785972.35	8.00	0.00
				5733715.81	2785954.52	8.00	0.00
				5733747.90	2786004.44	8.00	0.00
				5733749.92	2786094.90	8.00	0.00
LINESOURCE	8.00	а		5732863.59	2785970.08	8.00	0.00
				5732866.58	2786037.96	8.00	0.00
LINESOURCE	8.00	а		5732772.03	2787427.16	8.00	0.00
				5732893.90	2787421.83	8.00	0.00
LINESOURCE	8.00	а		5733767.54	2787359.61	8.00	0.00
				5733776.83	2787567.74	8.00	0.00
LINESOURCE	8.00	а		5733774.13	2787507.28	8.00	0.00
				5732881.42	2787528.81	8.00	0.00
				5732893.90	2787421.83	8.00	0.00
	_			5732890.20	2787374.89	8.00	0.00

Area Source(s)

	-	- (-)													
Name	М.	ID	R	esult. PW	'L	Re	esult. PW	L''		Lw/L	i	Op	erating Ti	me	Height
			Day	Evening	Night	Day	Evening	Night	Туре	Value	norm.	Day	Special	Night	(ft)
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	
AREASOURCE		DOCK01	111.5	111.5	111.5	67.8	67.8	67.8	Lw	111.5					8
AREASOURCE		DOCK02	111.5	111.5	111.5	67.9	67.9	67.9	Lw	111.5					8

Name	ŀ	lei	ght		Coordinat	es	
	Begin		End	х	У	z	Ground
	(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
AREASOURCE	8.00	а		5732993.77	2787373.82	8.00	0.00
				5732965.81	2786009.33	8.00	0.00
				5732828.98	2786048.81	8.00	0.00
				5732778.55	2786052.76	8.00	0.00
				5732801.29	2787375.81	8.00	0.00
AREASOURCE	8.00	а		5733658.63	2787359.11	8.00	0.00
				5733850.43	2787359.99	8.00	0.00
				5733831.65	2786093.30	8.00	0.00
				5733634.05	2786097.16	8.00	0.00

Barrier(s)

Name	М.	ID	Abso	rption	Z-Ext.	Canti	ilever	F	leig	ght			Coordinat	es	
			left	right		horz.	vert.	Begin		End		х	У	z	Ground
					(ft)	(ft)	(ft)	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
BARRIEREXISTING		0						12.00	а			5731998.98	2787471.04	12.00	0.00
												5732065.60	2787116.05	12.00	0.00
												5732149.17	2786354.77	12.00	0.00
BARRIEREXISTING		0						6.00	а			5734344.93	2785039.98	6.00	0.00
												5734411.31	2787566.43	6.00	0.00
BARRIEREXISTING		0						6.00	а		Τ	5731824.83	2784925.73	6.00	0.00
												5731924.29	2784918.32	6.00	0.00
												5731991.96	2784908.55	6.00	0.00
												5732043.76	2784899.04	6.00	0.00
												5732105.51	2784880.71	6.00	0.00
												5732152.79	2784859.73	6.00	0.00
												5732199.98	2784832.98	6.00	0.00
												5732242.81	2784804.85	6.00	0.00
											T	5732289.88	2784770.89	6.00	0.00
												5732336.71	2784722.49	6.00	0.00
												5732369.22	2784681.26	6.00	0.00
											1	5732416.83	2784608.24	6.00	0.00

Name	М.	ID	Abso	rption	Z-Ext.	Canti	ilever	H	lei	ght		Coordinat	es	
			left	right		horz.	vert.	Begin		End	x	У	z	Ground
					(ft)	(ft)	(ft)	(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
											5732501.76	2784399.90	6.00	0.00
											5732584.19	2784134.93	6.00	0.00
											5732647.39	2783857.66	6.00	0.00
BARRIERTEMP		0						8.00	а		5733851.52	2787361.56	8.00	0.00
											5733826.74	2786094.10	8.00	0.00
											5733859.78	2786095.28	8.00	0.00
											5733853.88	2785921.80	8.00	0.00
BARRIERTEMP		0						8.00	а		5733853.88	2785921.80	8.00	0.00
											5732652.50	2785941.86	8.00	0.00
BARRIERTEMP		0						8.00	а		5732800.02	2787378.09	8.00	0.00
											5732790.58	2786960.32	8.00	0.00
BARRIERTEMP		0						8.00	а		5732789.40	2786896.59	8.00	0.00
											5732774.06	2786049.25	8.00	0.00

Building(s)

Name	М.	ID	RB	Residents	Absorption	Height	:		Coordinat	es	
						Begin		х	У	z	Ground
						(ft)		(ft)	(ft)	(ft)	(ft)
BUILDING		MAJOR_1	x	0		24.00	а	5732403.35	2787024.88	24.00	0.00
								5732687.73	2787017.86	24.00	0.00
								5732682.08	2786817.55	24.00	0.00
								5732397.75	2786826.94	24.00	0.00
BUILDING		SHOPS_1	x	0		24.00	а	5732353.25	2787563.25	24.00	0.00
								5732472.64	2787558.93	24.00	0.00
								5732471.63	2787497.65	24.00	0.00
								5732352.29	2787504.32	24.00	0.00
BUILDING		PAD_1	x	0		24.00	а	5732615.56	2787552.65	24.00	0.00
								5732676.06	2787551.66	24.00	0.00
								5732673.57	2787495.90	24.00	0.00
								5732614.63	2787496.09	24.00	0.00
BUILDING		BUILDING_1	x	0		49.00	а	5732996.33	2787498.62	49.00	0.00
		_	+					5733661.14	2787487.71	49.00	0.00
								5733631.96	2785990.05	49.00	0.00
	-		+					5732965.58	2785997.94	49.00	0.00
BUILDING	-	BUILDING_D1	x	0		24.00	a	5734027.27	2786137.96	24.00	0.00
	-		†^	l ů			Ē	5734083.82	2786137.03	24.00	0.00
			+					5734080.48	2786027.02	24.00	0.00
	-		+				Η	5734020.90	2786029.53	24.00	0.00
BUILDING		BUILDING C	x	0		37.00	a	5732915.64	2785837.02	37.00	0.00
DOILDING		bolebind_e	Ê			37.00	u	5733103.39	2785833.94	37.00	0.00
			+					5733101.50	2785766.45	37.00	0.00
			+					5733052.60	2785765.70	37.00	0.00
			+					5733051.94	2785725.36	37.00	0.00
			-					5733072.10	2785724.25	37.00	0.00
			+					5733072.10	2785647.45	37.00	0.00
			+					5733049.88	2785647.01	37.00	0.00
			+					5733049.23	2785607.45	37.00	0.00
			+								0.00
			-					5733099.60	2785603.52	37.00	
			-					5733097.75	2785537.58	37.00	0.00
			-	0		24.00		5732910.78	2785541.43	37.00	0.00
BUILDING		BUILDING_R3	x	0		24.00	a	5733195.41	2785813.80	24.00	0.00
			+					5733417.28	2785809.38	24.00	0.00
			-					5733416.97	2785743.42	24.00	0.00
			-					5733234.67	2785747.19	24.00	0.00
			-					5733235.58	2785755.71	24.00	0.00
								5733195.26	2785757.93	24.00	0.00
BUILDING		BUILDING_R2	x	0		24.00	а	5733482.47	2785809.86	24.00	0.00
			-					5733619.78	2785806.83	24.00	0.00
								5733619.60	2785748.63	24.00	0.00
			-					5733585.48	2785749.97	24.00	0.00
			-					5733583.78	2785740.69	24.00	0.00
								5733501.54	2785742.04	24.00	0.00
								5733481.70	2785762.54	24.00	0.00
BUILDING		BUILDING_R1	x	0		24.00	а	5733653.92	2785806.27	24.00	0.00
								5733782.71	2785804.16	24.00	0.00
								5733781.93	2785756.83	24.00	0.00
								5733761.44	2785737.77	24.00	0.00
								5733686.95	2785738.22	24.00	0.00
								5733688.68	2785749.05	24.00	0.00
								5733652.23	2785750.43	24.00	0.00
BUILDING		BUILDING_D2	x	0		24.00	а	5733917.62	2785797.29	24.00	0.00
								5734049.53	2785795.90	24.00	0.00
								5734048.64	2785741.59	24.00	0.00
								5733916.75	2785743.75	24.00	0.00
BUILDING		BUILDING R4	x	0		24.00	a	5733189.74	2785610.57	24.00	0.00
-	-		1	-				5733230.87	2785610.67	24.00	0.00

Name	М.	ID	RB	Residents	Absorption	Height			Coordinat	es	
						Begin		х	У	z	Ground
						(ft)		(ft)	(ft)	(ft)	(ft)
								5733231.04	2785620.76	24.00	0.00
								5733414.91	2785617.74	24.00	0.00
								5733412.22	2785548.72	24.00	0.00
								5733190.36	2785553.91	24.00	0.00
BUILDING		BUILDING_R5R6	x	0		24.00	а	5733240.85	2785272.93	24.00	0.00
								5733416.96	2785270.04	24.00	0.00
								5733417.03	2785180.02	24.00	0.00
								5733334.82	2785182.92	24.00	0.00
								5733335.24	2785208.52	24.00	0.00
								5733238.28	2785210.89	24.00	0.00

APPENDIX 10.1:

CADNAA CONSTRUCTION NOISE MODEL INPUTS

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13923 - Majestic Gateway

CadnaA Noise Prediction Model: 13923_06_Construction.cna Date: 03.05.22 Analyst: B. Lawson

Calculation Configuration

ParameterValueGeneral	Configurat	tion
Max. Error (dB)0.00Max. Search Radius (#(Unit,LEN))2000.01Min. Dist Src to Rcvr0.00PartitionRaster Factor0.50Max. Length of Section (#(Unit,LEN))999.99Min. Length of Section (#(Unit,LEN))1.01Min. Length of Section (%)0.00Proj. Line SourcesOnProj. Area SourcesOnReference Time Day (min)960.00Reference Time Night (min)480.00Daytime Penalty (dB)0.00Night-time Penalty (dB)10.00DTM0.00Standard Height (m)0.00Model of TerrainTriangulationReflection2Search Radius Src100.00Sach Radius Src100.00Min. Distance Source - Reflector1.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)Incl. Ground Att. over BarrierDaytimi Coefficients C1,2,33.0 20.0.0Searrier Coefficients C1,2,33.0 20.0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (RLS-90)Stricity acc. to RLS-90Railways (FTA/FRA)Aircraft (???)	Parameter	Value
Max. Search Radius (#(Unit,LEN))2000.01Min. Dist Src to Rcvr0.00PartitionRaster FactorRaster Factor0.50Max. Length of Section (#(Unit,LEN))999.99Min. Length of Section (#(Unit,LEN))1.01Min. Length of Section (%)0.00Proj. Line SourcesOnProj. Area SourcesOnReference Time Day (min)960.00Reference Time Night (min)480.00Daytime Penalty (dB)0.00Reference Time Night (Min)0.00Night-time Penalty (dB)10.00DTMDaytime Penalty (dB)Standard Height (m)0.00Model of TerrainTriangulationReflection2Search Radius Src100.00Saurce Source - Revr1000.00Min. Distance Source - Reflector1.00Min. Distance Source - Reflector1.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)Incl. Ground Att. over BarrierDarrier Coefficients C1,2,33.0 20.0.0SereningIncl. Ground Att. over BarrierDarrier Coefficients C1,2,33.0 20.0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (RLS-90)Railways (FTA/FRA)Aircraft (???)Incl. Ground Att. Over Barrier	General	
Min. Dist Src to Rovr0.00Partition0.50Raster Factor0.50Max. Length of Section (#(Unit,LEN))1.01Min. Length of Section (#(Unit,LEN))1.01Min. Length of Section (%)0.00Proj. Line SourcesOnProj. Line SourcesOnReference Time Day (min)960.00Reference Time Night (min)480.00Daytime Penalty (dB)0.00Night-time Penalty (dB)0.00DTM0.00DTM0.00Standard Height (m)0.00Model of TerrainTriangulationReflection2Search Radius Src100.00Min. Distance Source - Revr100.00Min. Distance Source - Reflector1.00Industrial (ISO 9613)1.00Lateral Diffractionsome ObjObst. within Area Src do not shieldOnScreeningIncl. Ground Att. over Barrier Dz with limit (20/25)Barrier Coefficients C1,2,33.0 20.0 0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (RLS-90)Strictly ac. to RLS-90Railways (FTA/FRA)Aircraft (???)	Max. Error (dB)	0.00
PartitionImage: constraint of a section (#(Unit,LEN))Raster Factor0.50Max. Length of Section (#(Unit,LEN))1.01Min. Length of Section (%)0.00Proj. Line SourcesOnProj. Area SourcesOnReference Time Day (min)960.00Reference Time Night (min)480.00Daytime Penalty (dB)0.00Retr. Time Penalty (dB)5.00Night-time Penalty (dB)10.00DTMStandard Height (m)Standard Height (m)0.00Model of TerrainTriangulationReflection2Search Radius Src100.00Max. Distance Source - Revr1000.00Min. Distance Source - Reflector1.00Industrial (ISO 9613)1.00Lateral Diffractionsome ObjObst. within Area Src do not shieldOnScreeningIncl. Ground Att. over BarrierDz with limit (20/25)Darrier Coefficients C1,2,3Barrier Coefficients C1,2,33.0 20.0 0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (RLS-90)Strictly ac. to RLS-90Strictly ac. to RLS-90Railways (FTA/FRA)Aircraft (???)Image: Strictly ac. to RLS-90	Max. Search Radius (#(Unit,LEN))	2000.01
Raster Factor0.50Max. Length of Section (#(Unit,LEN))999.99Min. Length of Section (%)0.00Proj. Line SourcesOnProj. Area SourcesOnReference Time Day (min)960.00Reference Time Night (min)480.00Daytime Penalty (dB)0.00Ref. Time10.00Ref. Time Penalty (dB)0.00Ref. Time Penalty (dB)0.00Refrerence Time Penalty (dB)0.00Standard Height (m)0.00Model of TerrainTriangulationReflection2Search Radius Src100.00Min. Distance Source - Rcvr1000.00Min. Distance Source - Reflector1.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)Some ObjLateral DiffractionDz with limit (20/25)Barrier Coefficients C1,2,33.0 20.0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (RLS-90)Strictly ac. to RLS-90Strictly ac. to RLS-90Railways (FTA/FRA)Aircraft (???)Aircraft (???)	Min. Dist Src to Rcvr	0.00
Max. Length of Section (#(Unit,LEN))999.99Min. Length of Section (%)0.00Proj. Line SourcesOnProj. Line SourcesOnRef. TimeReference Time Day (min)Reference Time Night (min)480.00Daytime Penalty (dB)0.00Reterence Time Penalty (dB)0.00Reterence Time Penalty (dB)0.00Reterence Time Penalty (dB)0.00Reterence Time Penalty (dB)0.00Model of TerrainTriangulationReflection2Standard Height (m)0.00Model of Terrain100.00Max. Order of Reflection2Search Radius Src100.00Min. Distance Source - Revr1000.00 1000.00Min. Distance Source - Reflector1.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)Incl. Ground Att. over BarrierLateral Diffractionsome ObjObst. within Area Src do not shieldOnScreeningDz with limit (20/25)Barrier Coefficients C1,2,33.0 20.0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Railways (FTA/FRA)Aircraft (???)	Partition	
Min. Length of Section (#(Unit,LEN))1.01Min. Length of Section (%)0.00Proj. Line SourcesOnProj. Area SourcesOnRef. TimeReference Time Day (min)Reference Time Night (min)480.00Daytime Penalty (dB)0.00Reterence Time Penalty (dB)5.00Night-time Penalty (dB)10.00DTMStandard Height (m)Ondolf TerrainTriangulationReflection2Search Radius Src100.00Max. Order of Reflection2Search Radius Src100.00Min. Distance Source - Revr1.00 1.00Min. Distance Source - Reflector1.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)Incl. Ground Att. over BarrierLateral DiffractionSome ObjObst. within Area Src do not shieldOnScreeningIncl. Ground Att. over BarrierDz with limit (20/25)Darrier Coefficients C1,2,3Barrier Coefficients C1,2,33.0 20.0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Railways (FTA/FRA)Aircraft (???)	Raster Factor	0.50
Min. Length of Section (%)0.00Proj. Line SourcesOnProj. Area SourcesOnRef. TimeReference Time Day (min)960.00Reference Time Night (min)480.00Daytime Penalty (dB)0.00Recr. Time Penalty (dB)10.00DTMStandard Height (m)0.00Model of TerrainTriangulationReflection2Search Radius Src100.00Max. Order of Reflection2Search Radius Src100.00Min. Distance Source - Revr1000.00Min. Distance Source - Reflector1.00Industrial (ISO 9613)Incl. Ground Att. over BarrierLateral DiffractionSome ObjObst. within Area Src do not shieldOnScreeningIncl. Ground Att. over BarrierDarrier Coefficients C1,2,33.0 20.0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (RLS-90)Stricity acc. to RLS-90Railways (FTA/FRA)Aircraft (???)	Max. Length of Section (#(Unit,LEN))	999.99
Proj. Line SourcesOnProj. Area SourcesOnRef. TimeImage: SourcesReference Time Day (min)960.00Reference Time Day (min)960.00Reference Time Night (min)480.00Daytime Penalty (dB)0.00Recr. Time Penalty (dB)5.00Night-time Penalty (dB)10.00DTMImage: Source S	Min. Length of Section (#(Unit,LEN))	1.01
Proj. Area SourcesOnRef. Time	Min. Length of Section (%)	0.00
Ref. Time960.00Reference Time Day (min)960.00Reference Time Night (min)480.00Daytime Penalty (dB)0.00Recr. Time Penalty (dB)5.00Night-time Penalty (dB)10.00DTMStandard Height (m)0.00Model of TerrainTriangulationReflection2Search Radius Src100.00Max. Distance Source - Revr1000.00 1000.00Min. Distance Source - Reflector1.00 1.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)Incl. Ground Att. over Barrier Dz with limit (20/25)Barrier Coefficients C1,2,33.0 20.0 0.0Temperature (#(Unit, TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (RLS-90)Strictly ac. to RLS-90Railways (FTA/FRA)Aircraft (???)	Proj. Line Sources	On
Reference Time Day (min)960.00Reference Time Night (min)480.00Daytime Penalty (dB)0.00Recr. Time Penalty (dB)10.00Night-time Penalty (dB)10.00DTMStandard Height (m)Standard Height (m)0.00Model of TerrainTriangulationReflection2Search Radius Src100.00Max. Distance Source - Rcvr1000.00Min. Distance Source - Rcvr1000.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)Some ObjLateral DiffractionSome ObjScreeningIncl. Ground Att. over Barrier Dz with limit (20/25)Barrier Coefficients C1,2,33.0 20.0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (RLS-90)Strictly acc. to RLS-90Railways (FTA/FRA)Aircraft (???)	Proj. Area Sources	On
Reference Time Night (min)480.00Daytime Penalty (dB)0.00Recr. Time Penalty (dB)5.00Night-time Penalty (dB)10.00DTMDTM0.00Model of TerrainTriangulationReflection2Search Radius Src100.00Max. Order of Reflection2Search Radius Rcvr100.00Max. Distance Source - Rcvr1000.00 1000.00Min. Distance Source - Reflector1.00Industrial (ISO 9613)Lateral DiffractionLateral Diffractionsome ObjObst. within Area Src do not shieldOnScreeningDz with limit (20/25)Barrier Coefficients C1,2,33.0 20.0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (RLS-90)Stricity acc. to RLS-90Railways (FTA/FRA)Aircraft (???)	Ref. Time	
Daytime Penalty (dB)0.00Recr. Time Penalty (dB)5.00Night-time Penalty (dB)10.00DTM0.00Standard Height (m)0.00Model of TerrainTriangulationReflection2Search Radius Src100.00Search Radius Src100.00Max. Order of Reflection2Search Radius Src100.00Max. Distance Source - Rcvr1000.00 1000.00Min. Distance Source - Reflector1.00 1.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)1Lateral Diffractionsome ObjObst. within Area Src do not shieldOnScreeningIncl. Ground Att. over BarrierDz with limit (20/25)Barrier Coefficients C1,2,3Barrier Coefficients C1,2,33.0 20.0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (RLS-90)Stricity acc. to RLS-90Railways (FTA/FRA)Aircraft (???)	Reference Time Day (min)	960.00
Recr. Time Penalty (dB)5.00Night-time Penalty (dB)10.00DTM	Reference Time Night (min)	480.00
Night-time Penalty (dB)10.00DTMStandard Height (m)0.00Model of TerrainTriangulationReflection2Search Radius Src100.00Search Radius Rcvr1000.00Max. Distance Source - Rcvr1000.00Min. Distance Source - Reflector1.00 1.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)Italeral DiffractionScreeningIncl. Ground Att. over BarrierDatrie Coefficients C1,2,33.0 20.0 0.0Temperature (#(Unit, TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#Unit,SPEED))3.0Roads (RLS-90)Strictly acc. to RLS-90Railways (FTA/FRA)Aircraft (???)	Daytime Penalty (dB)	0.00
DTM0.00Standard Height (m)0.00Model of TerrainTriangulationReflection2max. Order of Reflection2Search Radius Src100.00Max. Distance Source - Revr1000.00Min. Distance Source - Reflector1.00 1.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)Lateral DiffractionScreeningIncl. Ground Att. over Barrier Dz with limit (20/25)Barrier Coefficients C1,2,33.0 20.0 0.0Temperature (#(Unit, TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#Unit,SPEED))3.0Roads (RLS-90)Strictly acc. to RLS-90Railways (FTA/FRA)Aircraft (???)	Recr. Time Penalty (dB)	5.00
Standard Height (m)0.00Model of TerrainTriangulationReflectionTriangulationReflection2Search Radius Src100.00Search Radius Src1000.00Max. Distance Source - Rcvr1000.00 1000.00Min. Distance Source - Reflector1.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)Incl. Ground Att. over BarrierDobt. within Area Src do not shieldOnScreeningIncl. Ground Att. over BarrierDz with limit (20/25)Darrier Coefficients C1,2,3Barrier Coefficients C1,2,33.0 20.0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (RLS-90)Strictly acc. to RLS-90Railways (FTA/FRA)Aircraft (???)	Night-time Penalty (dB)	10.00
Model of Terrain Triangulation Reflection 2 max. Order of Reflection 2 Search Radius Src 100.00 Search Radius Rovr 1000.00 Max. Distance Source - Rcvr 1000.00 1000.00 Min. Distance Source - Reflector 1.00 Min. Distance Source - Reflector 0.10 Industrial (ISO 9613) 2 Lateral Diffraction some Obj Obst. within Area Src do not shield On Screening Incl. Ground Att. over Barrier Dz with limit (20/25) Barrier Coefficients C1,2,3 Barrier Coefficients C1,2,3 3.0 20.0.0 Temperature (#(Unit, TEMP)) 10 rel. Humidity (%) 70 Ground Absorption G 0.50 Wind Speed for Dir. (#(Unit,SPEED)) 3.0 Roads (RLS-90) Strictly acc. to RLS-90 Railways (FTA/FRA) Aircraft (???)	DTM	
Reflection 2 max. Order of Reflection 2 Search Radius Src 100.00 Search Radius Rcvr 1000.00 Max. Distance Source - Rcvr 1000.00 1000.00 Min. Distance Source - Reflector 1.00 1.00 Min. Distance Source - Reflector 0.10 Industrial (ISO 9613) 100 Lateral Diffraction some Obj Obst. within Area Src do not shield On Screening Incl. Ground Att. over Barrier Dz Dz with limit (20/25) Barrier Coefficients C1,2,3 3.0 20.0 0 Temperature (#(Unit,TEMP)) 10 rel. Humidity (%) 70 Ground Absorption G 0.50 Wind Speed for Dir. (#(Unit,SPEED)) 3.0 Roads (RLS-90) Stricity acc. to RL5-90 Railways (FTA/FRA) Aircraft (???)	Standard Height (m)	0.00
max. Order of Reflection2Search Radius Src100.00Search Radius Rcvr100.00Max. Distance Source - Rcvr1000.00 1000.00Min. Distance Rvr - Reflector1.00 1.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)Industrial (ISO 9613)Lateral Diffractionsome ObjObst. within Area Src do not shieldOnScreeningIncl. Ground Att. over Barrier Dz with limit (20/25)Barrier Coefficients C1,2,33.0 20.0 0.0Temperature (#(Unit, TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (RLS-90)Strictly acc. to RLS-90Railways (FTA/FRA)Aircraft (???)	Model of Terrain	Triangulation
Search Radius Src100.00Search Radius Rcvr100.00Max. Distance Source - Rcvr1000.00 1000.00Min. Distance Source - Reflector1.00 1.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)Industrial (ISO 9613)Lateral Diffractionsome ObjObst. within Area Src do not shieldOnScreeningIncl. Ground Att. over BarrierDz with limit (20/25)DzBarrier Coefficients C1,2,33.0 20.0 0.0Temperature (#(Unit, TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (RLS-90)Strictly acc. to RLS-90Railways (FTA/FRA)Aircraft (???)	Reflection	
Search Radius Rcvr100.00Max. Distance Source - Rcvr1000.00 1000.00Min. Distance Source - Reflector1.00 1.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)Industrial (ISO 9613)Lateral Diffractionsome ObjObst. within Area Src do not shieldOnScreeningIncl. Ground Att. over BarrierDzDz with limit (20/25)Barrier Coefficients C1,2,33.0 20.0 0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (RLS-90)Strictly acc. to RLS-90Railways (FTA/FRA)Aircraft (???)	max. Order of Reflection	2
Max. Distance Source - Rcvr 1000.00 1000.00 Min. Distance Rvcr - Reflector 1.00 1.00 Min. Distance Source - Reflector 0.10 Industrial (ISO 9613) Industrial (ISO 9613) Lateral Diffraction some Obj Obst. within Area Src do not shield On Screening Incl. Ground Att. over Barrier Dz with limit (20/25) Dz with limit (20/25) Barrier Coefficients C1,2,3 3.0 20.0 0.0 Temperature (#(Unit,TEMP)) 10 rel. Humidity (%) 70 Ground Absorption G 0.50 Wind Speed for Dir. (#(Unit,SPEED)) 3.0 Roads (RLS-90) Strictly acc. to RLS-90 Railways (FTA/FRA) Aircraft (???)	Search Radius Src	100.00
Min. Distance Rvcr - Reflector 1.00 1.00 Min. Distance Source - Reflector 0.10 Industrial (ISO 9613) some Obj Lateral Diffraction some Obj Obst. within Area Src do not shield On Screening Incl. Ground Att. over Barrier Dz with limit (20/25) Dz with limit (20/25) Barrier Coefficients C1,2,3 3.0 20.0.0 Temperature (#(Unit,TEMP)) 10 rel. Humidity (%) 70 Ground Absorption G 0.50 Wind Speed for Dir. (#(Unit,SPEED)) 3.0 Stricity acc. to RLS-90 Strictly acc. to RLS-90 Railways (FTA/FRA) Aircraft (???)	Search Radius Rcvr	100.00
Min. Distance Source - Reflector 0.10 Industrial (ISO 9613) some Obj Lateral Diffraction some Obj Obst. within Area Src do not shield On Screening Incl. Ground Att. over Barrier Dz with limit (20/25) Barrier Coefficients C1,2,3 3.0 20.0 0.0 Temperature (#(Unit,TEMP)) 10 rel. Humidity (%) 70 Ground Absorption G 0.50 Wind Speed for Dir. (#(Unit,SPEED)) 3.0 Roads (RLS-90) Stricity acc. to RLS-90 Railways (FTA/FRA) Aircraft (???)	Max. Distance Source - Rcvr	1000.00 1000.00
Industrial (ISO 9613) some Obj Lateral Diffraction some Obj Obst. within Area Src do not shield On Screening Incl. Ground Att. over Barrier Dz with limit (20/25) Barrier Coefficients C1,2,3 3.0 20.0 0.0 Temperature (#(Unit,TEMP)) 10 rel. Humidity (%) 70 Ground Absorption G 0.50 Wind Speed for Dir. (#(Unit,SPEED)) 3.0 Roads (RLS-90) Strictly acc. to RLS-90 Railways (FTA/FRA) Aircraft (???)	Min. Distance Rvcr - Reflector	1.00 1.00
Lateral Diffraction some Obj Obst. within Area Src do not shield On Screening Incl. Ground Att. over Barrier Dz with limit (20/25) Barrier Coefficients C1,2,3 3.0 20.0 0.0 Temperature (#(Unit,TEMP)) 10 rel. Humidity (%) 70 Ground Absorption G 0.50 Wind Speed for Dir. (#(Unit,SPEED)) 3.0 Roads (RLS-90) Strictly acc. to RLS-90 Railways (FTA/FRA) Aircraft (???)	Min. Distance Source - Reflector	0.10
Obst. within Area Src do not shield On Screening Incl. Ground Att. over Barrier Dz with limit (20/25) Barrier Coefficients C1,2,3 3.0 20.0 0.0 Temperature (#(Unit,TEMP)) 10 rel. Humidity (%) 70 Ground Absorption G 0.50 Wind Speed for Dir. (#(Unit,SPEED)) 3.0 Roads (RLS-90) Strictly acc. to RLS-90 Railways (FTA/FRA) Aircraft (???)	Industrial (ISO 9613)	
Screening Incl. Ground Att. over Barrier Dz with limit (20/25) Barrier Coefficients C1,2,3 3.0 20.0 0.0 Temperature (#(Unit,TEMP)) 10 rel. Humidity (%) 70 Ground Absorption G 0.50 Wind Speed for Dir. (#(Unit,SPEED)) 3.0 Roads (RLS-90) Strictly acc. to RLS-90 Railways (FTA/FRA) Aircraft (???)	Lateral Diffraction	some Obj
Dz with limit (20/25) Barrier Coefficients C1,2,3 3.0 20.0 0.0 Temperature (#(Unit,TEMP)) 10 rel. Humidity (%) 70 Ground Absorption G 0.50 Wind Speed for Dir. (#(Unit,SPEED)) 3.0 Roads (RLS-90) Strictly acc. to RLS-90 Railways (FTA/FRA) Aircraft (???)	Obst. within Area Src do not shield	On
Barrier Coefficients C1,2,3 3.0 20.0 0.0 Temperature (#(Unit,TEMP)) 10 rel. Humidity (%) 70 Ground Absorption G 0.50 Wind Speed for Dir. (#(Unit,SPEED)) 3.0 Roads (RLS-90) Strictly acc. to RLS-90 Railways (FTA/FRA) Aircraft (???)	Screening	Incl. Ground Att. over Barrier
Temperature (#(Unit,TEMP)) 10 rel. Humidity (%) 70 Ground Absorption G 0.50 Wind Speed for Dir. (#(Unit,SPEED)) 3.0 Roads (RLS-90) Strictly acc. to RLS-90 Railways (FTA/FRA) Aircraft (???)		Dz with limit (20/25)
rel. Humidity (%) 70 Ground Absorption G 0.50 Wind Speed for Dir. (#(Unit,SPEED)) 3.0 Roads (RLS-90) Strictly acc. to RLS-90 Railways (FTA/FRA) Aircraft (???)	Barrier Coefficients C1,2,3	3.0 20.0 0.0
Ground Absorption G 0.50 Wind Speed for Dir. (#(Unit,SPEED)) 3.0 Roads (RLS-90) Strictly acc. to RLS-90 Railways (FTA/FRA) Aircraft (???)	Temperature (#(Unit,TEMP))	10
Wind Speed for Dir. (#(Unit,SPEED)) 3.0 Roads (RLS-90)	rel. Humidity (%)	70
Roads (RLS-90) Strictly acc. to RLS-90 Railways (FTA/FRA) Aircraft (???)	Ground Absorption G	0.50
Strictly acc. to RLS-90 Railways (FTA/FRA) Aircraft (???)	Wind Speed for Dir. (#(Unit,SPEED))	3.0
Railways (FTA/FRA) Aircraft (???)	Roads (RLS-90)	
Aircraft (???)	Strictly acc. to RLS-90	
	Railways (FTA/FRA)	
Strictly acc. to AzB	Aircraft (???)	
	Strictly acc. to AzB	

Receiver Noise Levels

Name	М.	ID		Level Lr		Lir	nit. Valı	ue		Land	Use	Height		C	oordinates	
			Day	Night	CNEL	Day	Night	CNEL	Туре	Auto	Noise Type			Х	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
RECEIVERS		R1	60.3	60.3	67.0	55.0	50.0	0.0				5.00	а	5731996.16	2787441.42	5.00
RECEIVERS		R2	65.4	65.4	72.0	55.0	50.0	0.0				5.00	а	5733153.76	2789045.50	5.00
RECEIVERS		R3	67.2	67.2	73.8	55.0	50.0	0.0				5.00	а	5734435.07	2787561.81	5.00
RECEIVERS		R4	68.7	68.7	75.3	55.0	50.0	0.0				5.00	а	5734412.20	2787014.76	5.00
RECEIVERS		R5	68.9	68.9	75.6	55.0	50.0	0.0				5.00	а	5734396.83	2786179.70	5.00
RECEIVERS		R6	67.9	67.9	74.6	55.0	50.0	0.0				5.00	а	5734366.01	2785277.27	5.00
RECEIVERS		R7	64.3	64.3	71.0	55.0	50.0	0.0				5.00	а	5733507.83	2783590.60	5.00
RECEIVERS		R8	62.9	62.9	69.5	55.0	50.0	0.0				5.00	а	5732356.49	2784672.85	5.00
RECEIVERS		R9	64.0	64.0	70.7	55.0	50.0	0.0				5.00	а	5732124.93	2786390.59	5.00

Area Source(s)

Name	М.	ID	R	esult. PW	Ľ	Re	esult. PW	L"		Lw/L	i	Operating Time			Height
			Day	Day Evening Night			Evening	Night	Туре	Value	norm.	Day	Special	Night	(ft)
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	
CONSTRUCTION		0	135.0 135.0 135.0			79.0	79.0	79.0	Lw"	79					8

Name	ł	lei	ght		Coordinates						
	Begin		End		х	У	z	Ground			
	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)			
CONSTRUCTION	8.00 a				5732377.97	2787651.04	8.00	0.00			
					5734236.91	2787600.28	8.00	0.00			
					5734186.21	2785632.38	8.00	0.00			

Name	He	ight		Coordinates							
	Begin	End	x	У	z	Ground					
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)					
			5734173.25	2785005.09	8.00	0.00					
			5733725.44	2785018.62	8.00	0.00					
			5733442.23	2785135.48	8.00	0.00					
			5733043.01	2785245.05	8.00	0.00					
			5732788.47	2785427.66	8.00	0.00					
			5732664.60	2785613.65	8.00	0.00					
			5732344.15	2786711.59	8.00	0.00					
			5732266.53	2787137.80	8.00	0.00					
			5732251.79	2787136.20	8.00	0.00					
			5732175.22	2787514.56	8.00	0.00					
			5732377.49	2787621.62	8.00	0.00					

Barrier(s)

Name	М.	ID	Abso	rption	Z-Ext.	Canti	ilever	F	leig	ght		Coordinat	es	
			left	right		horz.	vert.	Begin		End	x	У	z	Ground
					(ft)	(ft)	(ft)	(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
BARRIEREXISTING		0						12.00	а		5731998.98	2787471.04	12.00	0.00
											5732065.60	2787116.05	12.00	0.00
											5732149.17	2786354.77	12.00	0.00
BARRIEREXISTING		0						6.00	а		5734344.93	2785039.98	6.00	0.00
											5734411.31	2787566.43	6.00	0.00
BARRIEREXISTING		0						6.00	а		5731824.83	2784925.73	6.00	0.00
											5731924.29	2784918.32	6.00	0.00
											5731991.96	2784908.55	6.00	0.00
											5732043.76	2784899.04	6.00	0.00
											5732105.51	2784880.71	6.00	0.00
											5732152.79	2784859.73	6.00	0.00
											5732199.98	2784832.98	6.00	0.00
											5732242.81	2784804.85	6.00	0.00
											5732289.88	2784770.89	6.00	0.00
											5732336.71	2784722.49	6.00	0.00
											5732369.22	2784681.26	6.00	0.00
											5732416.83	2784608.24	6.00	0.00
											5732501.76	2784399.90	6.00	0.00
											5732584.19	2784134.93	6.00	0.00
											5732647.39	2783857.66	6.00	0.00

APPENDIX 10.2:

CADNAA NIGHTTIME CONCRETE POUR NOISE MODEL INPUTS



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13923-09 Noise Study



13923 - Majestic Gateway

CadnaA Noise Prediction Model: 13923_06_ConcretePour.cna Date: 03.05.22 Analyst: B. Lawson

Calculation Configuration

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

Receiver Noise Levels

Name	М.	ID		Level Lr		Lir	nit. Valı	ue		Land	Use	Height		C	oordinates	
			Day	Night	CNEL	Day	Night	CNEL	Туре	Auto	Noise Type			Х	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
RECEIVERS		R1	49.0	49.0	55.7	55.0	50.0	0.0				5.00	а	5731996.16	2787441.42	5.00
RECEIVERS		R2	54.1	54.1	60.7	55.0	50.0	0.0				5.00	а	5733153.76	2789045.50	5.00
RECEIVERS		R3	55.9	55.9	62.5	55.0	50.0	0.0				5.00	а	5734435.07	2787561.81	5.00
RECEIVERS		R4	57.4	57.4	64.0	55.0	50.0	0.0				5.00	а	5734412.20	2787014.76	5.00
RECEIVERS		R5	57.6	57.6	64.3	55.0	50.0	0.0				5.00	а	5734396.83	2786179.70	5.00
RECEIVERS		R6	56.6	56.6	63.3	55.0	50.0	0.0				5.00	а	5734366.01	2785277.27	5.00
RECEIVERS		R7	53.0	53.0	59.7	55.0	50.0	0.0				5.00	а	5733507.83	2783590.60	5.00
RECEIVERS		R8	51.6	51.6	58.2	55.0	50.0	0.0				5.00	а	5732356.49	2784672.85	5.00
RECEIVERS		R9	52.7	52.7	59.4	55.0	50.0	0.0				5.00	а	5732124.93	2786390.59	5.00

Area Source(s)

Name	М.	ID	R	esult. PW	Ľ	Re	esult. PW	L''	Lw / Li			Op	Height		
			Day	Evening	Night	Day	Evening	Night	Туре	Value	norm.	Day	Special	Night	(ft)
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	
CONCRETE_POUR		0	123.7 123.7 123.7			67.7	67.7	67.7	Lw"	67.7					8

Name	ŀ	lei	ght	Coordinates							
	Begin		End	х	У	z	Ground				
	(ft)		(ft)	(ft)	(ft)	(ft)	(ft)				
CONCRETE_POUR	8.00	а		5732377.97	2787651.04	8.00	0.00				
				5734236.91	2787600.28	8.00	0.00				
				5734186.21	2785632.38	8.00	0.00				

Name	Hei	ght		Coordinat	es	
	Begin	End	x	У	z	Ground
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
			5734173.25	2785005.09	8.00	0.00
			5733725.44	2785018.62	8.00	0.00
			5733442.23	2785135.48	8.00	0.00
			5733043.01	2785245.05	8.00	0.00
			5732788.47	2785427.66	8.00	0.00
			5732664.60	2785613.65	8.00	0.00
			5732344.15	2786711.59	8.00	0.00
			5732266.53	2787137.80	8.00	0.00
			5732251.79	2787136.20	8.00	0.00
			5732175.22	2787514.56	8.00	0.00
			5732377.49	2787621.62	8.00	0.00

Barrier(s)

Name	М.	ID	Abso	rption	Z-Ext.	Canti	ilever	H	leig	ght		Coordinat	es	
			left	right		horz.	vert.	Begin		End	x	У	z	Ground
					(ft)	(ft)	(ft)	(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
BARRIEREXISTING		0						12.00	а		5731998.98	2787471.04	12.00	0.00
											5732065.60	2787116.05	12.00	0.00
											5732149.17	2786354.77	12.00	0.00
BARRIEREXISTING		0						6.00	а		5734344.93	2785039.98	6.00	0.00
											5734411.31	2787566.43	6.00	0.00
BARRIEREXISTING		0						6.00	а		5731824.83	2784925.73	6.00	0.00
											5731924.29	2784918.32	6.00	0.00
											5731991.96	2784908.55	6.00	0.00
											5732043.76	2784899.04	6.00	0.00
											5732105.51	2784880.71	6.00	0.00
											5732152.79	2784859.73	6.00	0.00
											5732199.98	2784832.98	6.00	0.00
											5732242.81	2784804.85	6.00	0.00
											5732289.88	2784770.89	6.00	0.00
											5732336.71	2784722.49	6.00	0.00
											5732369.22	2784681.26	6.00	0.00
											5732416.83	2784608.24	6.00	0.00
											5732501.76	2784399.90	6.00	0.00
											5732584.19	2784134.93	6.00	0.00
											5732647.39	2783857.66	6.00	0.00