Appendix 4.9

Noise



The Homestead

NOISE IMPACT ANALYSIS
CITY OF EASTVALE

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LIST OF ABBREVIATED TERMS

(1) Reference

ADT Average Daily Traffic

ANSI American National Standards Institute

Calveno California Vehicle Noise

CEQA California Environmental Quality Act
CNEL Community Noise Equivalent Level

dBA A-weighted decibels

EPA Environmental Protection Agency
FHWA Federal Highway Administration
FTA Federal Transit Administration

Hz Hertz

INCE Institute of Noise Control Engineering

 $\begin{array}{lll} L_{eq} & & \text{Equivalent continuous (average) sound level} \\ L_{max} & & \text{Maximum level measured over the time interval} \\ L_{min} & & \text{Minimum level measured over the time interval} \end{array}$

mph Miles per hour

OPR Office of Planning and Research

PPV Peak particle velocity
Project The Homestead

REMEL Reference Energy Mean Emission Level

RMS Root-mean-square VdB Vibration Decibels



EXECUTIVE SUMMARY

Urban Crossroads, Inc. has prepared this noise study to determine the potential noise impacts and the necessary noise mitigation measures, if any, for the proposed The Homestead development ("Project"). The Project site is located west of Archibald Avenue and on either side of Limonite Avenue, in the City of Eastvale. The proposed Project consists of 541,756 square feet of warehousing use and 507,631 square feet of high-cube fulfillment center use. At the time this noise analysis was prepared, the future tenants of the proposed Project were unknown, and therefore, this noise study includes a conservative analysis of the proposed Project uses. This study has been prepared to satisfy applicable City of Eastvale, and adjacent City of Ontario, standards and thresholds of significance based on guidance provided by Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (1)

OFF-SITE TRAFFIC NOISE ANALYSIS

Traffic generated by the operation of the Project will influence the traffic noise levels in surrounding off-site areas. To quantify the off-site traffic noise increases on the surrounding off-site areas, the changes in traffic noise levels on 15 study-area roadway segments were calculated based on the change in the average daily traffic (ADT) volumes. The traffic noise levels provided in this analysis are based on the traffic forecasts found in *The Homestead Traffic Impact Analysis* prepared by Urban Crossroads, Inc. (2) To assess the off-site noise level impacts associated with the proposed Project, noise contour boundaries were developed for Existing, Opening Year 2021, Interim Year 2023, and Horizon Year 2040 conditions.

The analysis shows that the unmitigated Project-related traffic noise level increases under all with Project traffic scenarios are considered *less than significant* impacts at land uses adjacent to the study area roadway segments.

OPERATIONAL NOISE ANALYSIS

Using reference noise levels to represent the expected noise sources from The Homestead site, this analysis estimates the Project-related stationary-source noise levels at nearby sensitive receiver locations. The typical activities associated with the proposed The Homestead are anticipated to include idling trucks, delivery truck activities, backup alarms, as well as loading and unloading of dry goods, roof-top air conditioning units, and parking lot vehicle movements. The operational noise analysis shows that the Project-related stationary-source noise levels at the nearby receiver locations will satisfy the City of Eastvale and City of Ontario exterior noise level standards. The analysis includes the barrier attenuation provided by the existing 6-foot high noise barriers in the Project study area and the Project buildings themselves.

Further, this analysis demonstrates that the unmitigated Project operational noise levels will not contribute a long-term operational noise level impact to the existing ambient noise environment at any of the sensitive receiver locations. Therefore, the operational noise level impacts associated with the proposed 24-hour seven days per week Project activities, such as the idling trucks, delivery truck activities, backup alarms, as well as loading and unloading of dry goods,



roof-top air conditioning units, and parking lot vehicle movements, are considered *less than significant*.

CONSTRUCTION NOISE ANALYSIS

Using sample reference noise levels to represent the planned construction activities of The Homestead site, this analysis estimates the Project-related construction noise levels at nearby sensitive receiver locations. The Project-related short-term construction noise levels are expected to approach 54.2 dBA L_{eq} . Since the City of Eastvale and Ontario General Plans and Municipal Codes do not identify specific construction noise level thresholds, a threshold is identified based on the National Institute for Occupational Safety and Health (NIOSH) limits for construction noise. The results of the analysis show that the Project-related short-term construction noise levels will satisfy the 85 dBA L_{eq} threshold identified by NIOSH at all receiver locations.

Further, the Project construction noise levels were combined with the existing ambient noise levels measurements at the off-site receiver locations to assess the temporary noise level increases due to Project construction. A temporary noise level increase of 12 dBA L_{eq} is considered a potentially significant impact based on the Caltrans substantial noise level increase criteria which is used to assess the Project-construction noise level increases. (4) The analysis shows that the Project will contribute unmitigated, worst-case construction noise level increases ranging from 0.1 to 0.2 dBA L_{eq} at the nearby receiver locations during the daytime construction hours, and therefore, are considered a *less than significant* noise impact.

The construction noise analysis presents a conservative approach with the highest noise-level-producing equipment for each stage of Project construction operating at the closest point from primary construction activity to the nearby sensitive receiver locations. This scenario is unlikely to occur during typical construction activities and likely overstates the construction noise levels which will be experienced at each receiver location.

CONSTRUCTION VIBRATION ANALYSIS

At distances ranging from 258 to 1,442 feet from Project construction activity, construction vibration velocity levels are expected to approach 0.003 in/sec PPV. Based on the City of Eastvale Municipal Code vibration level standard of 0.0787 in/sec PPV, the proposed Project construction activities will satisfy the vibration standard at all receiver locations during Project construction. Therefore, the Project-related vibration impacts will be *less than significant* during the construction activities at the Project site.

Further, the Project-related construction vibration levels do not represent levels capable of causing building damage to nearby residential homes. The FTA identifies construction vibration levels capable of building damage ranging from 0.12 to 0.5 in/sec PPV. (4) The peak Project-construction vibration levels are shown to approach 0.003 in/sec PPV and will remain below the FTA vibration levels for building damage at the residential homes near the Project site. Further, the impacts at the site of the closest sensitive receivers are unlikely to be sustained during the



entire construction period but will occur rather only during the times that heavy construction equipment is operating adjacent to the Project site perimeter.

TABLE ES-1: SUMMARY OF SIGNIFICANCE FINDINGS

Analusia	Report	Significano	ce Findings
Analysis	Section	Unmitigated	Mitigated
Off-Site Traffic Noise Levels	7	Less Than Significant	n/a
Operational Noise Level Compliance	0	Less Than Significant	n/a
Operational Noise Level Increases (Permanent)	9	Less Than Significant	n/a
Construction Noise Level Compliance		Less Than Significant	n/a
Construction Noise Level Increases (Temporary)	10	Less Than Significant	n/a
Construction Vibration Levels		Less Than Significant	n/a



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1 INTRODUCTION

This noise analysis has been completed to determine the noise impacts associated with the development of the proposed The Homestead ("Project"). This noise study briefly describes the proposed Project, provides information regarding noise fundamentals, describes the local regulatory setting, provides the study methods and procedures for traffic noise analysis, and evaluates the future exterior noise environment. In addition, this study includes an analysis of the potential Project-related long-term operational and short-term construction noise impacts.

1.1 SITE LOCATION

The proposed The Homestead site is located west of Archibald Avenue and on either side of Limonite Avenue, in the City of Eastvale, as shown on Exhibit 1-A. Chino Airport is located less than one mile west of the Project site.

1.2 PROJECT DESCRIPTION

The proposed Project consists of 541,756 square feet of warehousing use and 507,631 square feet of high-cube fulfillment center use, as shown on Exhibit 1-B. At the time this noise analysis was prepared, the future tenants of the proposed Project were unknown. The on-site Project-related noise sources are expected to include: idling trucks, delivery truck activities, backup alarms, as well as loading and unloading of dry goods, roof-top air conditioning units, and parking lot vehicle movements. This noise analysis is intended to describe noise level impacts associated with the expected typical operational activities at the Project site. To present a conservative approach, this report assumes the Project will operate 24-hour seven days per week.

Per *The Homestead Traffic Impact Analysis* prepared by Urban Crossroads, Inc. the Project is expected to generate a total of approximately 2,102 trip-ends per day (actual vehicles) and includes 408 truck trip-ends per day. (2) This noise study relies on the actual Project trips (as opposed to the passenger car equivalents) to accurately account for the effect of individual truck trips on the study area roadway network.

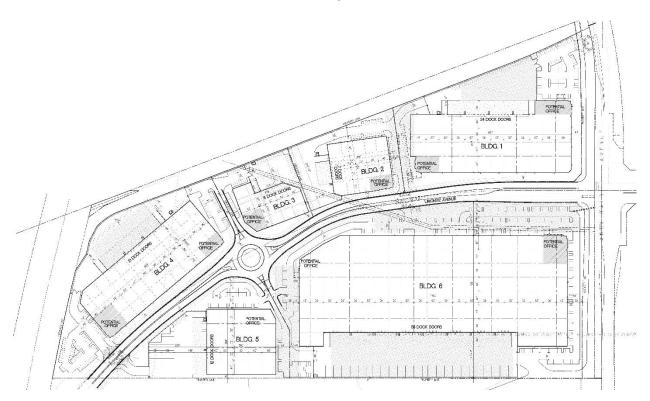


EXHIBIT 1-A: LOCATION MAP





EXHIBIT 1-B: SITE PLAN





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2 FUNDAMENTALS

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

EXHIBIT 2-A: TYPICAL NOISE LEVELS

COMMON OUTDOOR ACTIVITIES	COMMON INDOOR ACTIVITIES	A - WEIGHTED SOUND LEVEL dBA	SUBJECTIVE LOUDNESS	EFFECTS OF NOISE
THRESHOLD OF PAIN		140		
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	VERY NOISY	
DIESEL TRUCK AT 15m (50 ft), at 80 km/hr (50 mph)	FOOD BLENDER AT 1m (3 ft)	80	LOUD	
NOISY URBAN AREA, DAYTIME	VACUUM CLEANER AT 3m (10 ft)	70		SPEECH INTERFERENCE
HEAVY TRAFFIC AT 90m (300 ft)	NORMAL SPEECH AT 1m (3 ft)	60		HATERPERENCE
QUIET URBAN DAYTIME	LARGE BUSINESS OFFICE	50		SLEEP
QUIET URBAN NIGHTTIME	THEATER, LARGE CONFERENCE ROOM (BACKGROUND)	40		DISTURBANCE
QUIET SUBURBAN NIGHTTIME	LIBRARY	30		
QUIET RURAL NIGHTTIME	BEDROOM AT NIGHT, CONCERT HALL (BACKGROUND)	20	FAINT	
	BROADCAST/RECORDING STUDIO	10	VERY FAINT	NO EFFECT
LOWEST THRESHOLD OF HUMAN HEARING	LOWEST THRESHOLD OF HUMAN HEARING	0	VERT FAINT	

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

2.1 RANGE OF NOISE

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



at approximately 100 feet, which can cause serious discomfort. (5) Another important aspect of noise is the duration of the sound and the way it is described and distributed in time.

2.2 Noise Descriptors

Environmental noise descriptors are generally based on averages, rather than instantaneous, noise levels. The most commonly used figure is the equivalent level (L_{eq}). Equivalent sound levels are not measured directly but are calculated from sound pressure levels typically measured in Aweighted 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 sound appears louder. CNEL does not represent the actual sound level heard at any time, but rather represents the total sound exposure. The City of Eastvale 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. (4)

2.3.2 GROUND ABSORPTION

The propagation path of noise from a highway to a receptor 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 receptor, 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 receptor such as soft dirt, grass, or scattered bushes and trees), an excess ground attenuation value of 1.5 dB per doubling of distance is normally assumed. When added to the cylindrical spreading, the excess ground attenuation results in an overall drop-off rate of 4.5 dB per doubling of distance from a line source. (6)

2.3.3 ATMOSPHERIC EFFECTS

Receptors located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels. Sound levels can be increased at large distances (e.g., more than 500 feet) due to atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity, and turbulence can also have significant effects. (4)

2.3.4 SHIELDING

A large object or barrier in the path between a noise source and a receptor can substantially attenuate noise levels at the receptor. 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 FHWA does not consider the planting of vegetation to be a noise abatement measure. (6)

2.4 Noise Control

Noise control is the process of obtaining an acceptable noise environment for an observation point or receptor by controlling the noise source, transmission path, receptor, or all three. This concept is known as the source-path-receptor 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 receptor. Noise barriers, however, do have limitations. For a noise barrier to work, it must be high enough and long enough to block the path of the noise source. (6)



2.6 LAND USE COMPATIBILITY WITH NOISE

Some land uses are more tolerant of noise than others. For example, schools, hospitals, churches, and residences are more sensitive to noise intrusion than are commercial or industrial developments and related activities. As ambient noise levels affect the perceived amenity or livability of a development, so too can the mismanagement of noise impacts impair the economic health and growth potential of a community by reducing the area's desirability as a place to live, shop and work. For this reason, land use compatibility with the noise environment is an important consideration in the planning and design process. The FHWA encourages State and Local government to regulate land development in such a way that noise-sensitive land uses are either prohibited from being located adjacent to a highway, or that the developments are planned, designed, and constructed in such a way that noise impacts are minimized. (7)

2.7 COMMUNITY RESPONSE TO NOISE

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

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

Approximately ten percent of the population has a very low tolerance for noise and will object to any noise not of their making. Consequently, even in the quietest environment, some complaints will occur. Another twenty-five percent of the population will not complain even in very severe noise environments. Thus, a variety of reactions can be expected from people exposed to any given noise environment. (8) Surveys have shown that about ten percent of the people exposed to traffic noise of 60 dBA will report being highly annoyed with the noise, and each increase of one dBA is associated with approximately two percent more people being highly annoyed. When traffic noise exceeds 60 dBA or aircraft noise exceeds 55 dBA, people may begin to complain. (8) Despite this variability in behavior on an individual level, the population can be expected to exhibit the following responses to changes in noise levels as shown on Exhibit 2-B. An increase or decrease of 1 dBA cannot be perceived except in carefully controlled laboratory experiments, a change of 3 dBA are considered *barely perceptible*, and changes of 5 dBA are considered *readily perceptible*. (6)



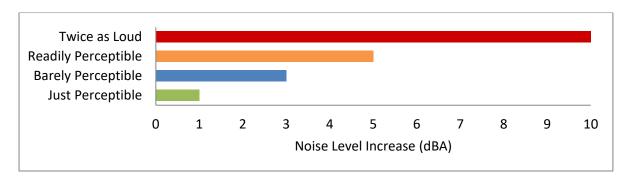


EXHIBIT 2-B: NOISE LEVEL INCREASE PERCEPTION

2.8 EXPOSURE TO HIGH NOISE LEVELS

The Occupational Safety and Health Administration (OSHA) sets legal limits on noise exposure in the workplace. The permissible exposure limit (PEL) for a worker over an eight-hour day is 90 dBA. The OSHA standard uses a 5 dBA exchange rate. This means that when the noise level is increased by 5 dBA, the amount of time a person can be exposed to a certain noise level to receive the same dose is cut in half. The National Institute for Occupational Safety and Health (NIOSH) has recommended that all worker exposures to noise should be controlled below a level equivalent to 85 dBA for eight hours to minimize occupational noise induced hearing loss. NIOSH also recommends a 3 dBA exchange rate so that every increase by 3 dBA doubles the amount of the noise and halves the recommended amount of exposure time. (9)

OSHA has implemented requirements to protect all workers in general industry (e.g. the manufacturing and the service sectors) for employers to implement a Hearing Conservation Program where workers are exposed to a time weighted average noise level of 85 dBA or higher over an eight-hour work shift. Hearing Conservation Programs require employers to measure noise levels, provide free annual hearing exams and free hearing protection, provide training, and conduct evaluations of the adequacy of the hearing protectors in use unless changes to tools, equipment and schedules are made so that they are less noisy and worker exposure to noise is less than the 85 dBA. This noise study does not evaluate the noise exposure of workers within a project or construction site based on CEQA requirements, and instead, evaluates Project-related operational and construction noise levels at the nearby sensitive receiver locations in the Project study area.

2.9 VIBRATION

Per the Federal Transit Administration (FTA) *Transit Noise Impact and Vibration Assessment* (3), 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), 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.



Velocity Typical Sources Level* (50 ft from source) Human/Structural Response 100 Threshold, minor cosmetic damage Blasting from construction projects fragile buildings Bulldozers and other heavy tracked construction equipment Difficulty with tasks such as 90 reading a VDT screen Commuter rail, upper range 80 Residential annoyance, infrequent Rapid transit, upper range events (e.g. commuter rail) Commuter rail, typical Residential annoyance, frequent Bus or truck over bump events (e.g. rapid transit) Rapid transit, typical Limit for vibration sensitive equipment. Approx. threshold for Bus or truck, typical human perception of vibration 60 Typical background vibration 50

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 Impact and Vibration Assessment.



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3 REGULATORY SETTING

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

3.1 STATE OF CALIFORNIA NOISE REQUIREMENTS

The State of California regulates freeway noise, sets standards for sound transmission, provides occupational noise control criteria, identifies noise standards, and provides guidance for local land use compatibility. State law requires that each county and city adopt a General Plan that includes a Noise Element which is to be prepared per guidelines adopted by the Governor's Office of Planning and Research (OPR). (12) The purpose of the Noise Element is to *limit the exposure* of the community to excessive noise levels.

3.2 STATE OF CALIFORNIA GREEN BUILDING STANDARDS CODE

The State of California's Green Building Standards Code contains mandatory measures for non-residential building construction in Section 5.507 on Environmental Comfort. (13) These noise standards are applied to new construction in California for controlling interior noise levels resulting from exterior noise sources. The regulations specify that acoustical studies must be prepared when non-residential structures are developed in areas where the exterior noise levels exceed 65 dBA CNEL, such as within a noise contour of an airport, freeway, railroad, and other areas where noise contours are not readily available. If the development falls within an airport or freeway 65 dBA CNEL noise contour, the combined sound transmission class (STC) rating of the wall and roof-ceiling assemblies must be at least 50. For those developments in areas where noise contours are not readily available and the noise level exceeds 65 dBA L_{eq} for any hour of operation, a wall and roof-ceiling combined STC rating of 45, and exterior windows with a minimum STC rating of 40 are required (Section 5.507.4.1).

3.3 CITY OF EASTVALE GENERAL PLAN NOISE ELEMENT

The City of Eastvale has adopted a Noise Element of the General Plan to control and abate environmental noise, and to protect the citizens of City of Eastvale from excessive exposure to noise. (15) The Noise Element specifies the maximum allowable exterior noise levels for new developments impacted by transportation and stationary noise sources. To protect the City of Eastvale residents from excessive noise, the Noise Element contains the following four goals:

N-1 Prevent and mitigate the adverse impacts of excessive noise exposure on the residents, employees, visitors and noise-sensitive uses of Eastvale.



- N-2 Locate noise-tolerant land uses within areas irrevocably committed to land uses that are noise-producing, such as transportation corridors.
- N-3 Ensure that noise sensitive uses do not encroach into areas needed by noise generating uses.
- N-4 Locate noise sources away from existing noise sensitive land uses unless appropriate noise control measures are provided.

3.3.1 Transportation Noise & Land Use Compatibility

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

Table N-3 *Noise Compatibility by Land Use Designation* in the City of Eastvale General Plan provides guidelines to evaluate the acceptability of the transportation related noise level impacts. Residential land use in the Project study area, is considered *completely compatible* with exterior noise levels below 60 dBA CNEL and *tentatively compatible* with noise levels between 60 to 70 dBA CNEL. Non-residential, or non-noise-sensitive use, is considered *completely compatible* with exterior noise levels less than 70 dBA CNEL, and *tentatively compatible* with exterior noise levels approaching 75 dBA CNEL. (15)

EXHIBIT 3-A: NOISE COMPATIBILITY BY LAND USE DESIGNATION

Land Use Designations	Completely Compatible	Tentatively Compatible	Normally Incompatible	Completely Incompatible
All Residential (Single- and Multi-Family)	Less than 60 dBA	60-70 dBA	70-75 dBA	Greater than 75 dBA
All Non-Residential (Commercial, Industrial & Institutional)	Less than 70 dBA	70-75 dBA	Greater than 75 dBA	(2)
Public Parks (Lands on which public parks are located or planned)	Less than 65 dBA	65-70 dBA	70-75 dBA	Greater than 75 dBA

⁽¹⁾ All noise levels shown in this table are designated CNEL.

Source: City of Eastvale General Plan Noise Element, Table N-3.



⁽²⁾ To be determined as part of the project review process.

The City of Eastvale residential exterior noise level criteria for transportation noise sources is generally consistent with the adjacent jurisdictional guidelines of the City of Ontario, as indicated in The Ontario Plan Safety Section on Noise Hazards (Table LU-7), which identifies exterior noise levels ranging from 60 to 70 dBA CNEL as acceptable for residential uses. However, the City of Chino General Plan Noise Element does not identify specific exterior transportation noise level standards. As such, this noise study relies on the City of Eastvale residential exterior noise level criteria for transportation noise sources when evaluating Project-related off-site traffic noise level increases at noise-sensitive land uses. (16) (16) In addition, the guidelines of the City of Ontario, as indicated in The Ontario Plan Safety Section on Noise Hazards (Table LU-7), also identify 70 dBA CNEL as *normally acceptable* for industrial or non-noise-sensitive uses.

3.3.2 STATIONARY-SOURCE NOISE LEVEL STANDARDS

The City of Eastvale General Plan Noise Element identifies exterior noise limits to control operational noise impacts associated with the development of the proposed The Homestead Project. Table N-4 of the Noise Element provides the City's standards for maximum exterior non-transportation noise levels to which land designated for residential land uses may be exposed for any 30-minute period on any day. (15) For the purposes of this analysis, the noise generated by the idling trucks, delivery truck activities, backup alarms, as well as loading and unloading of dry goods, roof-top air conditioning units, and parking lot vehicle movements of the proposed Project will be evaluated based on the City's stationary source standards at the nearby residential land uses.

Table N-4 of the Noise Element (shown on Exhibit 3-B below) requires an exterior noise level standard for the nearby noise-sensitive single-family residential land uses of 60 dBA L_{eq} between the daytime hours of 7:00 a.m. and 10:00 p.m., and 50 dBA L_{eq} between the nighttime hours of 10:00 p.m. to 7:00 a.m. (15)

EXHIBIT 3-B: EXTERIOR NOISE LEVEL STANDARDS FOR NON-TRANSPORTATION NOISE

Land Use Type	Time Period	Maximum Noise Level (dBA)
Single-Family Homes and Duplexes	10 p.m. to 7 a.m.	50
Single-rannily nomes and Duplexes	7 a.m. to 10 p.m. 60	
Multiple Decidential 2 or Mare Units Der Duilding (Tripley 1)	10 p.m. to 7 a.m.	55
Multiple Residential 3 or More Units Per Building (Triplex +)	7 a.m. to 10 p.m.	60

Source: City of Eastvale General Plan Noise Element, Table N-4.



3.3.3 CITY OF ONTARIO OPERATIONAL NOISE STANDARDS

Although the Project site is located within the City of Eastvale, sensitive receivers are also located in the City of Ontario. Therefore, to accurately describe the potential operational noise levels, this analysis presents the appropriate operational noise standards for each of the noise-sensitive receivers located within the City of Ontario. The City of Ontario Municipal Code, Title 5, Chapter 29 noise standards are included in Appendix 3.2 for those sensitive receiver locations within the City of Ontario. Section 5-29.04(a) identifies the acceptable daytime and nighttime ambient exterior noise standards for each land use type. For residential land uses (Noise Zone I), exterior noise levels may not exceed 65 dBA L_{eq} during the daytime hours (7:00 a.m. to 10:00 p.m.) and may not exceed 45 dBA L_{eq} during the nighttime hours (10:00 p.m. to 7:00 a.m.). These standards shall apply for a cumulative period of 15 minutes in any hour, as well as plus 20 dBA for any period of time. The operational noise level limits at off-site land uses in the City of Ontario are identified on Table 3-1 and provided in Appendix 3.2.

Exterior Noise Levels (dBA)³ Land Time City Use **Period** (Energy Avg.) (15 mins) (Anytime) Daytime 60 Eastvale1 Residential Nighttime 50 Daytime 65 65 85 Ontario² Residential 45 45 Nighttime 65

TABLE 3-1: OPERATIONAL NOISE STANDARDS

3.3.4 VIBRATION LEVEL STANDARDS

The City of Eastvale General Plan Noise Element, Policy N-3, identifies a vibration level standard for sensitive land uses of 0.0787 inches per second peak particle velocity (PPV). Since the City of Ontario does not identify specific vibration level standards, the City of Eastvale vibration standards are used to assess potential impacts from Project construction equipment. Therefore, for the purposes of this analysis, the vibration level shall not exceed 0.0787 in/sec PPV at the nearby sensitive receiver locations during Project construction activities capable of generating vibration levels. The construction vibration standards are provided on Table 3-2.



¹ Source: City of Eastvale General Plan Noise Element, Table N-4.

² Source: Section 5-29.04 of the City of Ontario Municipal Code (Appendix 3.2).

 $^{^3}$ L_{eq} represents a steady state sound level containing the same total energy as a time varying signal over a given sample period. The percent noise level is the level exceeded "n" percent of the time during the measurement period. L₂₅ is the noise level exceeded 25% of the time.

[&]quot;Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.; "E. Avg." = logarithmic (energy) average

TABLE 3-2: VIBRATION LEVEL STANDARDS

City	Peak Particle Velocity (PPV) Standard (in/sec)	
Eastvale ¹	0.0787	
Ontario	n/a	

¹ Source: City of Eastvale General Plan Noise Element, Policy N-3.

3.4 CONSTRUCTION NOISE STANDARDS

The City of Eastvale has set restrictions to control noise impacts associated with the construction of the proposed Project. According to the City of Eastvale Municipal Code Section 8.52.020, construction activities are limited to the hours of 6:00 a.m. to 6:00 p.m. June through September, and 7:00 a.m. to 6:00 p.m. October through May. (19) While the City of Eastvale establishes limits to the hours during which construction activity may take place, neither the City of Eastvale or adjacent City of Ontario General Plan or Municipal Code establish numeric maximum acceptable construction source noise levels at potentially affected receivers, which would allow for a quantified determination of what CEQA constitutes a *substantial temporary or periodic noise increase*.

To evaluate whether the Project will generate potentially significant temporary construction noise levels at off-site sensitive receiver locations, a construction-related noise level threshold is adopted from the Criteria for Recommended Standard: Occupational Noise Exposure prepared by the National Institute for Occupational Safety and Health (NIOSH). (20) A division of the U.S. Department of Health and Human Services, NIOSH identifies a noise level threshold based on the duration of exposure to the source. The construction related noise level threshold starts at 85 dBA for more than eight hours per day, and for every 3 dBA increase, the exposure time is cut in half. This results in noise level thresholds of 88 dBA for more than four hours per day, 92 dBA for more than one hour per day, 96 dBA for more than 30 minutes per day, and up to 100 dBA for more than 15 minutes per day. (20) For the purposes of this analysis, the lowest, more conservative construction noise level threshold of 85 dBA Leq is used as an acceptable threshold for construction noise at the nearby sensitive receiver locations. Since this construction-related noise level threshold represents the energy average of the noise source over a given time period, they are expressed as Leq noise levels. Therefore, the noise level threshold of 85 dBA Leq over a period of eight hours or more is used to evaluate the potential Project-related construction noise level impacts at the nearby sensitive receiver locations. The construction noise standards are shown on Table 3-3.



[&]quot;n/a" = The City of Ontario does not identify specific vibration level standards.

TABLE 3-3: CONSTRUCTION NOISE STANDARDS

City	Permitted Hours of Construction Activity	Construction Noise Level Threshold (dBA L _{eq}) ²	
Eastvale ¹	6:00 a.m. to 6:00 p.m. June through September, and 7:00 a.m. to 6:00 p.m. October through May	85	

¹ Source: Section 8.52.020 of the City of Eastvale Municipal Code (Appendix 3.1).

3.5 CHINO AIRPORT OVERLAY ZONE

The City of Chino Municipal Code, Section 20.09.050, includes the *airport overlay district* noise compatibility standards for land uses located within the noise level contours of Chino Airport. Table 20.09-2 establishes the *Community Noise Compatibility Standards* for land uses depending on the exterior noise environment due to Chino Airport aircraft overflight noise levels. The Project is located outside of the 65 dBA CNEL noise level contour of Chino Airport which, according to Table 20.09-2 of the Municipal Code, is considered *normally acceptable* for the Project land uses. Per the Municipal Code land use compatibility standards, the *specified land use is satisfactory*, and no noise mitigation is required. (21)

This is consistent with the *Chino Airport Master Plan*, (22) prepared by the County of San Bernardino, identifies noise compatibility policies based on the *Chino Airport Comprehensive Land Use Plan* (ACLUP). (23) The ACLUP indicates that exterior noise levels below 65 dBA CNEL at commercial and industrial uses, such as the Project, are considered *normally acceptable*. (23)



² Source: NIOSH, Criteria for Recommended Standard: Occupational Noise Exposure, June 1998.

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?

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

4.1 CEQA GUIDELINES NOT FURTHER ANALYZED

Based on the Chino Airport noise level contours previously discussed in Section 3.5, the Project use represents *normally satisfactory* land use. The Project site is also not located in the vicinity of a private airstrip. As such, the Project site would not be exposed to excessive noise levels from airport operations, and therefore, impacts are considered *less than significant*, and no further noise analysis is conducted in relation to Guideline C.

4.2 Noise-Sensitive Receivers

Noise level increases resulting from the Project are evaluated based on the Appendix G CEQA Guidelines described above at the closest sensitive receiver locations. Under CEQA, consideration must be given to the magnitude of the increase, the existing ambient noise levels, and the location of noise-sensitive receivers to determine if a noise increase represents a significant adverse environmental impact. This approach recognizes that there is no single noise increase that renders the noise impact significant. (19)

Unfortunately, there is no completely satisfactory way to measure the subjective effects of noise or of the corresponding human reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance and differing individual experiences with noise. Thus, an important way of determining a person's subjective reaction to a new noise is the comparison of it to the existing environment to which one has adapted—the so-called *ambient* environment.

In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will typically be judged. The Federal Interagency Committee on Noise



(FICON) (20) 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. (19) For example, if the ambient noise environment is quiet (<60 dBA) and the new noise source greatly increases the noise levels, an impact may occur if the noise criteria may be exceeded. Therefore, for this analysis, FICON identifies a readily perceptible 5 dBA or greater project-related noise level increase is considered a significant impact when the noise criteria for a given land use is exceeded. Per the FICON, in areas where the without project noise levels range from 60 to 65 dBA, a 3 dBA barely perceptible noise level increase appears to be appropriate for most people. When the without project noise levels already exceed 65 dBA, any increase in community noise louder than 1.5 dBA or greater is considered a significant impact if the noise criteria for a given land use is exceeded, since it likely contributes to an existing noise exposure exceedance. Table 4-1 below provides a summary of the potential noise impact significance criteria, based on guidance from FICON.

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

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

Federal Interagency Committee on Noise (FICON), 1992.

4.3 Non-Noise-Sensitive Receivers

The *completely compatible* exterior noise level for non-noise-sensitive land use, such as commercial and industrial uses, is 70 dBA CNEL, as previously described in Section 3.3.1. Noise levels greater than 70 dBA CNEL are considered *tentatively compatible* per the *Land Use Designation* criteria of the General Plan. (15)

This is consistent with the adjacent jurisdictional guidelines of the City of Ontario, as indicated in The Ontario Plan Safety Section on Noise Hazards (Table LU-7), which also identifies 70 dBA CNEL as *normally acceptable* for industrial uses. (16)

To determine if Project-related traffic noise level increases are significant at off-site non-noise-sensitive land uses, a *readily perceptible* 5 dBA and *barely perceptible* 3 dBA criteria are used. When the without Project noise levels at the non-noise-sensitive land uses are below the *normally acceptable* 70 dBA CNEL compatibility criteria, a *readily perceptible* 5 dBA or greater



noise level increase is considered a significant impact. When the without Project noise levels are greater than the *normally acceptable* 70 dBA CNEL land use compatibility criteria, a *barely perceptible* 3 dBA or greater noise level increase is considered a significant impact since the noise level criteria is already exceeded. The noise level increases used to determine significant impacts for non-noise-sensitive land uses is generally consistent with the FICON noise level increase thresholds for noise-sensitive land uses but instead rely on the 70 dBA CNEL exterior noise level criteria of the City of Eastvale General Plan Noise Element.

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 4-2 shows the significance criteria summary matrix.

OFF-SITE TRAFFIC NOISE

- When the noise levels at existing and future noise-sensitive land uses (e.g. residential, etc.):
 - are less than 60 dBA CNEL and the Project creates a readily perceptible 5 dBA CNEL or greater Project-related noise level increase; or
 - range from 60 to 65 dBA CNEL and the Project creates a barely perceptible 3 dBA CNEL or greater Project-related noise level increase; or
 - o already exceed 65 dBA CNEL, and the Project creates a community noise level increase of greater than 1.5 dBA CNEL (FICON, 1992).
- When the noise levels at existing and future non-noise-sensitive land uses (e.g. industrial, etc.):
 - are less than the City of Eastvale General Plan Noise Element 70 dBA CNEL criteria and the Project creates a *readily perceptible* 5 dBA CNEL or greater Project-related noise level increase; or
 - are greater than the City of Eastvale General Plan Noise Element 70 dBA CNEL criteria and the Project creates a *barely perceptible* 3 dBA CNEL or greater Project-related noise level increase.

OPERATIONAL NOISE

- If Project-related operational (stationary-source) noise levels exceed the exterior daytime or nighttime noise level standards for sensitive residential land uses in either the City of Eastvale or Ontario as outlined on Table 3-1; or
- If the existing ambient noise levels at the nearby noise-sensitive receivers near the Project site:
 - o are less than 60 dBA L_{eq} and the Project creates a *readily perceptible* 5 dBA L_{eq} or greater Project-related noise level increase; or
 - o range from 60 to 65 dBA L_{eq} and the Project creates a *barely perceptible* 3 dBA L_{eq} or greater Project-related noise level increase; or
 - \circ already exceed 65 dBA L_{eq}, and the Project creates a community noise level increase of greater than 1.5 dBA L_{eq} (FICON, 1992).



CONSTRUCTION NOISE AND VIBRATION

- If Project-related construction activities:
 - generate noise levels which exceed the 85 dBA L_{eq} acceptable noise level threshold at the nearby sensitive receiver locations (NIOSH, Criteria for Recommended Standard: Occupational Noise Exposure); or
 - generate temporary Project construction-related noise level increases which exceed the 12 dBA L_{eq} substantial noise level increase threshold at noise-sensitive receiver locations (Caltrans, Traffic Noise Analysis Protocol).
- If short-term Project generated construction vibration levels exceed the City of Eastvale acceptable vibration standard of 0.0787 in/sec PPV at sensitive receiver locations (City of Eastvale General Plan, Policy N-3).

TABLE 4-2: SIGNIFICANCE CRITERIA SUMMARY

Amalouia	Receiving	Condition (a)	Significan	ce Criteria	
Analysis	Land Use	Condition(s)	Daytime	Nighttime	
		if ambient is < 60 dBA CNEL	≥ 5 dBA CNEL Project increase		
Off-Site	Noise- Sensitive	if ambient is 60 - 65 dBA CNEL	≥ 3 dBA CNEL Project increase		
Traffic	Schsiere	if ambient is > 65 dBA CNEL	≥ 1.5 dBA CNEL	Project increase	
Noise ¹	Non-Noise-	if ambient is < 70 dBA CNEL	≥ 5 dBA CNEL F	oject increase	
	Sensitive ²	if ambient is > 70 dBA CNEL	≥ 3 dBA CNEL Project increase		
		Exterior Noise Level Standards ³	See Ta	le 3-1.	
Operational		if ambient is $< 60 \text{ dBA L}_{eq}^{1}$	≥ 5 dBA L _{eq} Project increase		
Noise		if ambient is 60 - 65 dBA L _{eq} 1	≥ 3 dBA L _{eq} Pr	oject increase	
	Noise- Sensitive	if ambient is > 65 dBA L _{eq} ¹	≥ 1.5 dBA L _{eq} P	roject increase	
Construction	uction	Noise Level Threshold ⁴	85 dBA L _{eq}	n/a	
Noise &		Noise Level Increase ⁵	12 dBA L _{eq}	n/a	
Vibration		Vibration Level Threshold ⁶	0.0787 PPV	n/a	

¹ Source: FICON, 1992.



² Sources: City of Eastvale and Ontario General Plan Noise Element land use compatibility criteria for non-noise-sensitive uses (e.g., commercial, industrial). The City of Chino does not identify specific land use compatibility criteria for the purpose of this analysis.

³ Source: City of Eastvale General Plan Noise Element, Table N-4 and Section 5-29.04 of the City of Ontario Municipal Code.

⁴ Source: NIOSH, Criteria for Recommended Standard: Occupational Noise Exposure, June 1998.

⁵ Source: Caltrans Traffic Noise Analysis Protocol, May 2011.

⁶ Source: City of Eastvale General Plan Noise Element, Policy N-3.

[&]quot;Daytime" = 7:00 a.m. - 10:00 p.m.; "Nighttime" = 10:00 p.m. - 7:00 a.m.; "n/a" = No nighttime construction activity is permitted and therefore, no nighttime construction noise level threshold is identified; "PPV" = Peak particle velocity.

5 EXISTING NOISE LEVEL MEASUREMENTS

To assess the existing noise level environment, 24-hour noise level measurements were taken at six 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 Tuesday, July 30, 2019. Appendix 5.1 includes study area photos.

5.1 Measurement Procedure and Criteria

To describe the existing noise environment, the hourly noise levels were measured during typical weekday conditions over a 24-hour period. By collecting individual hourly noise level measurements, it is possible to describe the daytime and nighttime hourly noise levels and calculate the 24-hour CNEL. The long-term noise readings were recorded using Piccolo Type 2 integrating sound level meter and dataloggers. The Piccolo sound level meters were calibrated using a Larson-Davis calibrator, Model CAL 150. All noise meters were programmed in "slow" mode to record noise levels in "A" weighted form. The sound level meters and microphones were equipped with a windscreen during all measurements. All noise level measurement equipment satisfies the American National Standards Institute (ANSI) standard specifications for sound level meters ANSI S1.4-2014/IEC 61672-1:2013. (21)

5.2 Noise Measurement Locations

The long-term noise level measurements were positioned as close to the nearest sensitive receiver locations as possible to assess the existing ambient hourly noise levels surrounding the Project site. Both Caltrans and the FTA recognize that it is not reasonable to collect noise level measurements that can fully represent every part of a private yard, patio, deck, or balcony normally used for human activity when estimating impacts for new development projects. This is demonstrated in the Caltrans general site location guidelines which indicate that, sites must be free of noise contamination by sources other than sources of interest. Avoid sites located near sources such as barking dogs, lawnmowers, pool pumps, and air conditioners unless it is the express intent of the analyst to measure these sources. (4) Further, FTA guidance states, 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. (3)

Based on recommendations of Caltrans and the FTA, it is not necessary to collect measurements at each individual building or residence, because each receiver measurement represents a group of buildings that share acoustical equivalence. (3) In other words, the area represented by the receiver shares similar shielding, terrain, and geometric relationship to the reference noise source. Receivers represent a location of noise sensitive areas and are used to estimate the future noise level impacts. Collecting reference ambient noise level measurements at the nearby sensitive receiver locations allows for a comparison of the before and after Project noise levels



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

5.3 Noise Measurement Results

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

- Location L1 represents the noise levels northeast of the Project site on Remington Avenue near existing residential homes. The noise level measurements collected show an overall 24hour exterior noise level of 72.6 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 67.4 dBA L_{eq} with an average nighttime noise level of 65.6 dBA L_{eq}.
- Location L2 represents the noise levels east of the Project site in a vacant lot on Limonite Avenue. The noise level measurements collected show an overall 24-hour exterior noise level of 69.0 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 64.5 dBA L_{eq} with an average nighttime noise level of 61.9 dBA L_{eq}.
- Location L3 represents the noise levels south of the Project site near existing residential homes. The 24-hour CNEL indicates that the overall exterior noise level is 69.2 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 62.8 dBA L_{eq} with an average nighttime noise level of 62.4 dBA L_{eq}.
- Location L4 represents the noise levels southwest of the Project site near existing industrial
 uses. The noise level measurements collected show an overall 24-hour exterior noise level of
 59.5 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 57.6
 dBA L_{eq} with an average nighttime noise level of 50.9 dBA L_{eq}.
- Location L5 represents the noise levels west of the Project site near existing industrial uses.
 The 24-hour CNEL indicates that the overall exterior noise level is 64.9 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 61.3 dBA L_{eq} with an average nighttime noise level of 57.7 dBA L_{eq}.
- Location L6 represents the noise levels north of the Project site near existing agricultural uses.
 The noise level measurements collected show an overall 24-hour exterior noise level of 64.2 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 57.2 dBA L_{eq} with an average nighttime noise level of 57.8 dBA L_{eq}.

Table 5-1 provides the (energy average) noise levels used to describe the daytime and nighttime ambient conditions. These daytime and nighttime energy average noise levels represent the average of all hourly noise levels observed during these time periods expressed as a single number. Appendix 5.2 provides summary worksheets of the noise levels for each hour as well as the minimum, maximum, L₁, L₂, L₅, L₈, L₂₅, L₅₀, L₉₀, L₉₅, and L₉₉ percentile noise levels observed during the daytime and nighttime periods.



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

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

Location ¹	Description	Energy Average Noise Level (dBA L _{eq}) ²		CNEL
		Daytime	Nighttime	
L1	Located northeast of the Project site on Remington Avenue near existing residential homes.	67.4	65.6	72.6
L2	Located east of the Project site in a vacant lot on Limonite Avenue.	64.5	61.9	69.0
L3	Located south of the Project site near existing residential homes.	62.8	62.4	69.2
L4	Located southwest of the Project site near existing industrial uses.	57.6	50.9	59.5
L5	Located west of the Project site near existing industrial uses.	61.3	57.7	64.9
L6	Located north of the Project site near existing agricultural uses.	57.2	57.8	64.2

 $^{^{\}rm 1}\,\mbox{See}$ Exhibit 5-A for the noise level measurement locations.



² The long-term 24-hour measurement worksheets are included in Appendix 5.2.

[&]quot;Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

LIMONITE AVE SITE SCHLEISM AN RD Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus OS, USDA, USGS, Aero GRID, IGN, and the GIS User Community Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA,

EXHIBIT 5-A: NOISE MEASUREMENT LOCATIONS

LEGEND:

Noise Measurement Locations



6 METHODS AND PROCEDURES

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

6.1 FHWA TRAFFIC NOISE PREDICTION MODEL

The 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. (22) 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. (23) 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. (24)

This methodology is consistent with the County of Riverside Office of Industrial Hygiene Requirements for Determining and Mitigating Traffic Noise Impacts to Residential Structures, which specifically requires the FHWA RD-77-108 model to be used in analysis within the County's jurisdiction. (25)

6.2 OFF-SITE TRAFFIC NOISE PREDICTION MODEL INPUTS

Table 6-1 presents the roadway parameters used to assess the Project's off-site transportation noise impacts. Table 6-1 identifies the 15 study area roadway segments, the distance from the centerline to adjacent land use based on the functional roadway classifications per the City of Eastvale General Plan Circulation Element, and the posted vehicle speeds. The ADT volumes used in this study are presented on Table 6-2 and were obtained from *The Homestead Traffic Impact Analysis*. (2)



TABLE 6-1: OFF-SITE ROADWAY PARAMETERS

ID	Roadway	Segment	Adjacent Planned (Existing) Land Use ¹	Distance from Centerline to Nearest Adjacent Land Use (Feet) ²	Posted Vehicle Speed (mph)
1	Archibald Av.	n/o Chino Av.	Residential	74'	55
2	Archibald Av.	s/o Chino Av.	Residential	74'	55
3	Archibald Av.	s/o Schaefer Av.	Residential	74'	55
4	Archibald Av.	s/o Ontario Ranch Rd.	Residential	74'	55
5	Archibald Av.	s/o Eucalyptus Av.	Residential	74'	55
6	Archibald Av.	s/o Merrill Av.	Residential	74'	55
7	Archibald Av.	s/o Limonite Av.	Residential	76'	50
8	Archibald Av.	s/o 65th St.	Residential	76'	50
9	Kimball Av.	w/o Hellman Av.	Residential	49'	50
10	Limonite Av.	e/o Hellman Av.	Industrial (Agr.)	76'	50
11	Limonite Av.	e/o Archibald Av.	Commercial/Res.	76'	50
12	Limonite Av.	e/o Harrison Av.	Residential	76'	50
13	Limonite Av.	e/o Sumner Av.	Residential	76'	50
14	Limonite Av.	e/o Scholar Wy.	Residential	76'	50
15	Limonite Av.	e/o Hamner Av.	Commercial	76'	45

¹ Sources: The Ontario Plan Exhibit LU-01, City of Chino General Plan Land Use Element Figure LU-2, and the City of Eastvale Land Use Map.



² Distance to adjacent land use is based upon the right-of-way distances for each functional roadway classification provided in the General Plan Circulation Elements.

[&]quot;Agr." = Agricultural use

TABLE 6-2: AVERAGE DAILY TRAFFIC VOLUMES

		Average Daily Traffic Volumes ¹							
ID	Roadway Segment	Existing		Opening Year 2021		Interim Year 2023		Horizon Year 2040	
		Without Project	With Project	Without Project	With Project	Without Project	With Project	Without Project	With Project
1	Archibald Av. n/o Chino Av.	27,047	27,339	29,960	30,252	32,221	32,513	37,874	38,166
2	Archibald Av. s/o Chino Av.	24,341	24,650	27,248	27,557	29,473	29,782	35,133	35,442
3	Archibald Av. s/o Schaefer Av.	22,707	23,033	25,560	25,886	27,730	28,056	33,464	33,790
4	Archibald Av. s/o Ontario Ranch Rd.	25,905	26,349	28,619	29,063	30,734	31,178	40,669	41,113
5	Archibald Av. s/o Eucalyptus Av.	25,103	25,564	27,793	28,254	29,882	30,343	40,418	40,879
6	Archibald Av. s/o Merrill Av.	26,707	27,338	29,249	29,880	31,258	31,889	43,131	43,762
7	Archibald Av. s/o Limonite Av.	25,787	26,151	27,861	28,225	33,476	33,840	44,433	44,797
8	Archibald Av. s/o 65th St.	29,454	29,691	31,647	31,884	33,456	33,693	36,343	36,580
9	Kimball Av. w/o Hellman Av.	14,116	14,499	15,022	15,405	15,792	16,175	26,819	27,202
10	Limonite Av. e/o Hellman Av.	n/a	469	466	934	777	1,245	33,972	34,440
11	Limonite Av. e/o Archibald Av.	17,476	18,158	19,833	20,515	21,611	22,293	54,064	54,746
12	Limonite Av. e/o Harrison Av.	19,514	20,162	21,923	22,571	23,759	24,407	55,789	56,437
13	Limonite Av. e/o Sumner Av.	21,010	21,624	23,434	24,048	25,299	25,913	44,429	45,043
14	Limonite Av. e/o Scholar Wy.	24,015	24,578	26,756	27,319	28,867	29,430	43,258	43,821
15	Limonite Av. e/o Hamner Av.	26,762	27,223	29,589	30,050	31,789	32,250	65,190	65,651

¹ Source: The Homestead Traffic Impact Analysis, Urban Crossroads, Inc.

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

Table 6-3 provides the time of day (daytime, evening, and nighttime) vehicle splits. The daily Project truck trip-ends were assigned to the individual off-site study area roadway segments based on the Project truck trip distribution percentages documented in the *Traffic Impact Analysis*. Using the Project truck trips in combination with the Project trip distribution, Urban Crossroads, Inc. calculated the number of additional Project truck trips and vehicle mix percentages for each of the study area roadway segments. Table 6-4 shows the traffic flow by vehicle type (vehicle mix) used for all without Project traffic scenarios, and Tables 6-5 to 6-8 show the vehicle mixes used for the with Project traffic scenarios.



[&]quot;n/a" = Roadway segment does not have an ADT volume because it does not exist under the given scenario.

TABLE 6-3: TIME OF DAY VEHICLE SPLITS

Vahiala Tuna		Time of Day Splits ¹		Total of Time of
Vehicle Type	Daytime	Evening	Nighttime	Day Splits
Autos	74.08%	10.30%	15.62%	100.00%
Medium Trucks	69.04%	7.12%	23.85%	100.00%
Heavy Trucks	82.11%	3.95%	13.95%	100.00%

¹ Based on existing 24-hour classification counts by vehicle type taken on 5/23/2019 at Archibald Avenue between Providence Way and Limonite Avenue (The Homestead Traffic Impact Analysis, Urban Crossroads, Inc.). Vehicle mix percentage values rounded to the nearest 100th.

TABLE 6-4: WITHOUT PROJECT CONDITIONS VEHICLE MIX

Classification		Total % Traffic Flow ¹		Total
Classification	Autos	Medium Trucks	Heavy Trucks	Total
All Segments	89.65%	7.02%	3.33%	100.00%

¹ Based on existing 24-hour classification counts by vehicle type taken on 5/23/2019 at Archibald Avenue between Providence Way and Limonite Avenue (The Homestead Traffic Impact Analysis, Urban Crossroads, Inc.). Vehicle mix percentage values rounded to the nearest 100th

TABLE 6-5: EXISTING WITH PROJECT CONDITIONS VEHICLE MIX

				With P	roject¹	
ID	Roadway	Segment	Autos	Medium Trucks	Heavy Trucks	Total ²
1	Archibald Av.	n/o Chino Av.	89.19%	7.12%	3.69%	100.00%
2	Archibald Av.	s/o Chino Av.	89.15%	7.13%	3.73%	100.00%
3	Archibald Av.	s/o Schaefer Av.	89.12%	7.13%	3.75%	100.00%
4	Archibald Av.	s/o Ontario Ranch Rd.	89.23%	7.08%	3.68%	100.00%
5	Archibald Av.	s/o Eucalyptus Av.	89.23%	7.08%	3.69%	100.00%
6	Archibald Av.	s/o Merrill Av.	89.32%	7.03%	3.65%	100.00%
7	Archibald Av.	s/o Limonite Av.	89.57%	6.99%	3.44%	100.00%
8	Archibald Av.	s/o 65th St.	89.73%	6.96%	3.30%	100.00%
9	Kimball Av.	w/o Hellman Av.	89.39%	7.00%	3.61%	100.00%
10	Limonite Av.	e/o Hellman Av.	83.35%	5.13%	11.52%	100.00%
11	Limonite Av.	e/o Archibald Av.	89.18%	7.02%	3.80%	100.00%
12	Limonite Av.	e/o Harrison Av.	89.21%	7.03%	3.76%	100.00%
13	Limonite Av.	e/o Sumner Av.	89.22%	7.04%	3.73%	100.00%
14	Limonite Av.	e/o Scholar Wy.	89.25%	7.05%	3.69%	100.00%
15	Limonite Av.	e/o Hamner Av.	89.25%	7.08%	3.67%	100.00%

¹ Source: The Homestead Traffic Impact Analysis, Urban Crossroads, Inc.



[&]quot;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.

[&]quot;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.

² Total of vehicle mix percentage values rounded to the nearest one-hundredth.

TABLE 6-6: OPENING YEAR WITH PROJECT CONDITIONS VEHICLE MIX

				With P	roject ¹	
ID	Roadway	Segment	Autos	Medium Trucks	Heavy Trucks	Total ²
1	Archibald Av.	n/o Chino Av.	89.23%	7.11%	3.65%	100.00%
2	Archibald Av.	s/o Chino Av.	89.20%	7.12%	3.68%	100.00%
3	Archibald Av.	s/o Schaefer Av.	89.18%	7.12%	3.71%	100.00%
4	Archibald Av.	s/o Ontario Ranch Rd.	89.27%	7.08%	3.65%	100.00%
5	Archibald Av.	s/o Eucalyptus Av.	89.27%	7.08%	3.66%	100.00%
6	Archibald Av.	s/o Merrill Av.	89.35%	7.03%	3.62%	100.00%
7	Archibald Av.	s/o Limonite Av.	89.57%	6.99%	3.43%	100.00%
8	Archibald Av.	s/o 65th St.	89.73%	6.97%	3.31%	100.00%
9	Kimball Av.	w/o Hellman Av.	89.40%	7.00%	3.60%	100.00%
10	Limonite Av.	e/o Hellman Av.	86.49%	6.07%	7.44%	100.00%
11	Limonite Av.	e/o Archibald Av.	89.23%	7.02%	3.75%	100.00%
12	Limonite Av.	e/o Harrison Av.	89.26%	7.03%	3.71%	100.00%
13	Limonite Av.	e/o Sumner Av.	89.27%	7.04%	3.69%	100.00%
14	Limonite Av.	e/o Scholar Wy.	89.29%	7.05%	3.66%	100.00%
15	Limonite Av.	e/o Hamner Av.	89.29%	7.07%	3.64%	100.00%

¹ Source: The Homestead Traffic Impact Analysis, Urban Crossroads, Inc.

TABLE 6-7: INTERIM YEAR WITH PROJECT CONDITIONS VEHICLE MIX

				With P	roject¹	
ID	Roadway	Segment	Autos	Medium Trucks	Heavy Trucks	Total ²
1	Archibald Av.	n/o Chino Av.	89.26%	7.10%	3.63%	100.00%
2	Archibald Av.	s/o Chino Av.	89.23%	7.11%	3.66%	100.00%
3	Archibald Av.	s/o Schaefer Av.	89.21%	7.11%	3.68%	100.00%
4	Archibald Av.	s/o Ontario Ranch Rd.	89.30%	7.07%	3.63%	100.00%
5	Archibald Av.	s/o Eucalyptus Av.	89.29%	7.07%	3.64%	100.00%
6	Archibald Av.	s/o Merrill Av.	89.37%	7.03%	3.60%	100.00%
7	Archibald Av.	s/o Limonite Av.	89.59%	7.00%	3.42%	100.00%
8	Archibald Av.	s/o 65th St.	89.72%	6.97%	3.31%	100.00%
9	Kimball Av.	w/o Hellman Av.	89.41%	7.00%	3.58%	100.00%
10	Limonite Av.	e/o Hellman Av.	87.28%	6.31%	6.42%	100.00%
11	Limonite Av.	e/o Archibald Av.	89.27%	7.02%	3.71%	100.00%
12	Limonite Av.	e/o Harrison Av.	89.29%	7.03%	3.68%	100.00%
13	Limonite Av.	e/o Sumner Av.	89.29%	7.04%	3.67%	100.00%
14	Limonite Av.	e/o Scholar Wy.	89.32%	7.05%	3.63%	100.00%
15	Limonite Av.	e/o Hamner Av.	89.31%	7.07%	3.62%	100.00%

¹ Source: The Homestead Traffic Impact Analysis, Urban Crossroads, Inc.



² Total of vehicle mix percentage values rounded to the nearest one-hundredth.

 $^{^{\}rm 2}\,\text{Total}$ of vehicle mix percentage values rounded to the nearest one-hundredth.

TABLE 6-8: HORIZON YEAR WITH PROJECT CONDITIONS VEHICLE MIX

				With P	roject¹	
ID	Roadway	Segment	Autos	Medium Trucks	Heavy Trucks	Total ²
1	Archibald Av.	n/o Chino Av.	89.32%	7.09%	3.59%	100.00%
2	Archibald Av.	s/o Chino Av.	89.30%	7.09%	3.61%	100.00%
3	Archibald Av.	s/o Schaefer Av.	89.29%	7.09%	3.62%	100.00%
4	Archibald Av.	s/o Ontario Ranch Rd.	89.38%	7.06%	3.56%	100.00%
5	Archibald Av.	s/o Eucalyptus Av.	89.39%	7.06%	3.56%	100.00%
6	Archibald Av.	s/o Merrill Av.	89.44%	7.03%	3.53%	100.00%
7	Archibald Av.	s/o Limonite Av.	89.60%	7.00%	3.39%	100.00%
8	Archibald Av.	s/o 65th St.	89.72%	6.97%	3.31%	100.00%
9	Kimball Av.	w/o Hellman Av.	89.51%	7.01%	3.48%	100.00%
10	Limonite Av.	e/o Hellman Av.	89.56%	6.99%	3.44%	100.00%
11	Limonite Av.	e/o Archibald Av.	89.49%	7.02%	3.49%	100.00%
12	Limonite Av.	e/o Harrison Av.	89.49%	7.02%	3.48%	100.00%
13	Limonite Av.	e/o Sumner Av.	89.44%	7.03%	3.52%	100.00%
14	Limonite Av.	e/o Scholar Wy.	89.43%	7.04%	3.53%	100.00%
15	Limonite Av.	e/o Hamner Av.	89.49%	7.04%	3.47%	100.00%

¹ Source: The Homestead Traffic Impact Analysis, Urban Crossroads, Inc.

6.3 VIBRATION ASSESSMENT

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

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



² Total of vehicle mix percentage values rounded to the nearest one-hundredth.

TABLE 6-9: VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

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

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment, September 2018.



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7 OFF-SITE TRANSPORTATION NOISE IMPACTS

To assess the off-site transportation CNEL noise level impacts associated with the proposed Project, noise contours were developed based on *The Homestead Traffic Impact Analysis*. (2) Noise contour boundaries represent the equal levels of noise exposure and are measured in CNEL from the center of the roadway. Noise contours were developed for the following traffic scenarios:

- <u>Existing Conditions Without / With Project</u>: This scenario refers to the existing present-day noise conditions without and with the proposed Project.
- Opening Year 2021 Without / With the Project: This scenario refers to Opening Year noise conditions without and with the proposed Project. This scenario includes all cumulative projects identified in the Traffic Impact Analysis.
- <u>Interim Year 2023 Without / With the Project</u>: This scenario refers to Interim Year noise conditions without and with the proposed Project. This scenario includes all cumulative projects identified in the Traffic Impact Analysis.
- Horizon Year 2040 Without / With the Project: This scenario refers to Horizon Year noise conditions without and with the proposed Project. This scenario includes all cumulative projects identified in the Traffic Impact Analysis.

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 through 7-8 present a summary of the exterior traffic noise levels, without barrier attenuation, for the 15 study area roadway segments analyzed from the without Project to the with Project conditions in each of the analysis timeframes. Appendix 7.1 includes a summary of the traffic noise level contours for each of the traffic scenarios.



TABLE 7-1: EXISTING WITHOUT PROJECT CONDITIONS NOISE CONTOURS

			Adjacent	CNEL at Nearest		nce to Co enterline	
ID	Road	Segment	Planned (Existing) Land Use ¹	Adjacent Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Archibald Av.	n/o Chino Av.	Residential	76.0	185	399	860
2	Archibald Av.	s/o Chino Av.	Residential	75.5	173	372	802
3	Archibald Av.	s/o Schaefer Av.	Residential	75.2	165	355	766
4	Archibald Av.	s/o Ontario Ranch Rd.	Residential	75.8	180	388	836
5	Archibald Av.	s/o Eucalyptus Av.	Residential	75.7	176	380	819
6	Archibald Av.	s/o Merrill Av.	Residential	75.9	184	396	853
7	Archibald Av.	s/o Limonite Av.	Residential	74.0	141	305	656
8	Archibald Av.	s/o 65th St.	Residential	74.6	154	333	717
9	Kimball Av.	w/o Hellman Av.	Residential	74.3	95	204	440
10	Limonite Av.	e/o Hellman Av.	Industrial (Agr.)	n/a	RW	RW	RW
11	Limonite Av.	e/o Archibald Av.	Commercial/Res.	72.4	109	235	506
12	Limonite Av.	e/o Harrison Av.	Residential	72.8	117	253	545
13	Limonite Av.	e/o Sumner Av.	Residential	73.2	123	266	572
14	Limonite Av.	e/o Scholar Wy.	Residential	73.7	135	290	626
15	Limonite Av.	e/o Hamner Av.	Commercial	73.2	124	268	577

¹ Sources: The Ontario Plan Exhibit LU-01, City of Chino General Plan Land Use Element Figure LU-2, and the City of Eastvale Land Use Map.



² The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use. "RW" = Location of the respective noise contour falls within the right-of-way of the road; "n/a" = Roadway segment does not exist in the given scenario.

TABLE 7-2: EXISTING WITH PROJECT CONDITIONS NOISE CONTOURS

			Adjacent	CNEL at Nearest		nce to Co enterline	
ID	Road	Segment	Planned (Existing) Land Use ¹	Adjacent Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Archibald Av.	n/o Chino Av.	Residential	76.2	191	412	888
2	Archibald Av.	s/o Chino Av.	Residential	75.8	179	385	831
3	Archibald Av.	s/o Schaefer Av.	Residential	75.5	171	369	795
4	Archibald Av.	s/o Ontario Ranch Rd.	Residential	76.0	186	401	865
5	Archibald Av.	s/o Eucalyptus Av.	Residential	75.9	183	394	848
6	Archibald Av.	s/o Merrill Av.	Residential	76.2	190	410	883
7	Archibald Av.	s/o Limonite Av.	Residential	74.1	144	309	666
8	Archibald Av.	s/o 65th St.	Residential	74.6	155	333	718
9	Kimball Av.	w/o Hellman Av.	Residential	74.5	98	212	456
10	Limonite Av.	e/o Hellman Av.	Industrial (Agr.)	58.9	RW	RW	RW
11	Limonite Av.	e/o Archibald Av.	Commercial/Res.	72.7	115	248	535
12	Limonite Av.	e/o Harrison Av.	Residential	73.2	123	266	572
13	Limonite Av.	e/o Sumner Av.	Residential	73.4	129	278	599
14	Limonite Av.	e/o Scholar Wy.	Residential	74.0	140	302	651
15	Limonite Av.	e/o Hamner Av.	Commercial	73.4	129	278	598

¹ Sources: The Ontario Plan Exhibit LU-01, City of Chino General Plan Land Use Element Figure LU-2, and the City of Eastvale Land Use Map.



² The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use. "RW" = Location of the respective noise contour falls within the right-of-way of the road; "n/a" = Roadway segment does not exist in the given scenario.

TABLE 7-3: OPENING YEAR WITHOUT PROJECT CONDITIONS NOISE CONTOURS

			Adjacent	CNEL at Nearest		nce to Co enterline	
ID	Road	Segment	Planned (Existing) Land Use ¹	Adjacent Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Archibald Av.	n/o Chino Av.	Residential	76.4	198	428	921
2	Archibald Av.	s/o Chino Av.	Residential	76.0	186	401	865
3	Archibald Av.	s/o Schaefer Av.	Residential	75.7	178	385	829
4	Archibald Av.	s/o Ontario Ranch Rd.	Residential	76.2	192	415	893
5	Archibald Av.	s/o Eucalyptus Av.	Residential	76.1	189	407	876
6	Archibald Av.	s/o Merrill Av.	Residential	76.3	195	421	906
7	Archibald Av.	s/o Limonite Av.	Residential	74.4	149	321	691
8	Archibald Av.	s/o 65th St.	Residential	74.9	162	349	752
9	Kimball Av.	w/o Hellman Av.	Residential	74.6	99	213	459
10	Limonite Av.	e/o Hellman Av.	Industrial (Agr.)	56.6	RW	RW	RW
11	Limonite Av.	e/o Archibald Av.	Commercial/Res.	72.9	119	256	551
12	Limonite Av.	e/o Harrison Av.	Residential	73.3	127	273	589
13	Limonite Av.	e/o Sumner Av.	Residential	73.6	133	286	616
14	Limonite Av.	e/o Scholar Wy.	Residential	74.2	145	312	672
15	Limonite Av.	e/o Hamner Av.	Commercial	73.6	133	286	617

¹ Sources: The Ontario Plan Exhibit LU-01, City of Chino General Plan Land Use Element Figure LU-2, and the City of Eastvale Land Use Map.



² The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use. "RW" = Location of the respective noise contour falls within the right-of-way of the road; "n/a" = Roadway segment does not exist in the given scenario.

TABLE 7-4: OPENING YEAR WITH PROJECT CONDITIONS NOISE CONTOURS

			Adjacent	CNEL at Nearest	Distance to Contour from Centerline (Feet)			
ID	Road	Segment	Planned (Existing) Land Use ¹	Adjacent Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	
1	Archibald Av.	n/o Chino Av.	Residential	76.6	204	440	948	
2	Archibald Av.	s/o Chino Av.	Residential	76.2	192	414	892	
3	Archibald Av.	s/o Schaefer Av.	Residential	76.0	185	398	857	
4	Archibald Av.	s/o Ontario Ranch Rd.	Residential	76.4	199	428	921	
5	Archibald Av.	s/o Eucalyptus Av.	Residential	76.3	195	420	905	
6	Archibald Av.	s/o Merrill Av.	Residential	76.5	202	434	936	
7	Archibald Av.	s/o Limonite Av.	Residential	74.5	151	325	701	
8	Archibald Av.	s/o 65th St.	Residential	74.9	162	350	753	
9	Kimball Av.	w/o Hellman Av.	Residential	74.8	102	220	475	
10	Limonite Av.	e/o Hellman Av.	Industrial (Agr.)	60.9	RW	RW	88	
11	Limonite Av.	e/o Archibald Av.	Commercial/Res.	73.2	125	268	578	
12	Limonite Av.	e/o Harrison Av.	Residential	73.6	133	286	615	
13	Limonite Av.	e/o Sumner Av.	Residential	73.9	138	298	641	
14	Limonite Av.	e/o Scholar Wy.	Residential	74.4	150	323	697	
15	Limonite Av.	e/o Hamner Av.	Commercial	73.9	137	296	637	

¹ Sources: The Ontario Plan Exhibit LU-01, City of Chino General Plan Land Use Element Figure LU-2, and the City of Eastvale Land Use Map.



² The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use. "RW" = Location of the respective noise contour falls within the right-of-way of the road; "n/a" = Roadway segment does not exist in the given scenario.

TABLE 7-5: INTERIM YEAR WITHOUT PROJECT CONDITIONS NOISE CONTOURS

	Road		Adjacent	CNEL at Nearest	Distance to Contour from Centerline (Feet)			
ID		Segment	Planned (Existing) Land Use ¹	Adjacent Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	
1	Archibald Av.	n/o Chino Av.	Residential	76.7	208	449	967	
2	Archibald Av.	s/o Chino Av.	Residential	76.4	196	423	911	
3	Archibald Av.	s/o Schaefer Av.	Residential	76.1	188	406	875	
4	Archibald Av.	s/o Ontario Ranch Rd.	Residential	76.5	202	435	937	
5	Archibald Av.	s/o Eucalyptus Av.	Residential	76.4	198	427	919	
6	Archibald Av.	s/o Merrill Av.	Residential	76.6	204	440	947	
7	Archibald Av.	s/o Limonite Av.	Residential	75.2	168	362	781	
8	Archibald Av.	s/o 65th St.	Residential	75.2	168	362	781	
9	Kimball Av.	w/o Hellman Av.	Residential	74.8	102	220	475	
10	Limonite Av.	e/o Hellman Av.	Industrial (Agr.)	58.8	RW	RW	RW	
11	Limonite Av.	e/o Archibald Av.	Commercial/Res.	73.3	126	271	583	
12	Limonite Av.	e/o Harrison Av.	Residential	73.7	134	288	621	
13	Limonite Av.	e/o Sumner Av.	Residential	74.0	140	301	648	
14	Limonite Av.	e/o Scholar Wy.	Residential	74.5	152	328	707	
15	Limonite Av.	e/o Hamner Av.	Commercial	73.9	139	300	647	

¹ Sources: The Ontario Plan Exhibit LU-01, City of Chino General Plan Land Use Element Figure LU-2, and the City of Eastvale Land Use Map.



² The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use. "RW" = Location of the respective noise contour falls within the right-of-way of the road; "n/a" = Roadway segment does not exist in the given scenario.

TABLE 7-6: INTERIM YEAR WITH PROJECT CONDITIONS NOISE CONTOURS

	Road		Adjacent	CNEL at Nearest	Distance to Contour from Centerline (Feet)			
ID		Segment	Planned (Existing) Land Use ¹	Adjacent Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	
1	Archibald Av.	n/o Chino Av.	Residential	76.9	214	461	993	
2	Archibald Av.	s/o Chino Av.	Residential	76.5	202	435	938	
3	Archibald Av.	s/o Schaefer Av.	Residential	76.3	194	419	902	
4	Archibald Av.	s/o Ontario Ranch Rd.	Residential	76.7	208	448	964	
5	Archibald Av.	s/o Eucalyptus Av.	Residential	76.6	204	440	947	
6	Archibald Av.	s/o Merrill Av.	Residential	76.8	210	453	976	
7	Archibald Av.	s/o Limonite Av.	Residential	75.3	170	367	790	
8	Archibald Av.	s/o 65th St.	Residential	75.2	168	363	782	
9	Kimball Av.	w/o Hellman Av.	Residential	75.0	106	227	490	
10	Limonite Av.	e/o Hellman Av.	Industrial (Agr.)	61.9	RW	RW	102	
11	Limonite Av.	e/o Archibald Av.	Commercial/Res.	73.6	131	283	610	
12	Limonite Av.	e/o Harrison Av.	Residential	74.0	139	300	647	
13	Limonite Av.	e/o Sumner Av.	Residential	74.2	145	312	673	
14	Limonite Av.	e/o Scholar Wy.	Residential	74.7	158	339	731	
15	Limonite Av.	e/o Hamner Av.	Commercial	74.1	144	310	667	

¹ Sources: The Ontario Plan Exhibit LU-01, City of Chino General Plan Land Use Element Figure LU-2, and the City of Eastvale Land Use Map.



² The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use. "RW" = Location of the respective noise contour falls within the right-of-way of the road; "n/a" = Roadway segment does not exist in the given scenario.

TABLE 7-7: HORIZON YEAR WITHOUT PROJECT CONDITIONS NOISE CONTOURS

	Road		Adjacent	CNEL at Nearest		nce to Co enterline	
ID		Segment	Planned (Existing) Land Use ¹	Adjacent Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Archibald Av.	n/o Chino Av.	Residential	77.4	232	500	1077
2	Archibald Av.	s/o Chino Av.	Residential	77.1	221	475	1024
3	Archibald Av.	s/o Schaefer Av.	Residential	76.9	214	460	992
4	Archibald Av.	s/o Ontario Ranch Rd.	Residential	77.8	243	524	1129
5	Archibald Av.	s/o Eucalyptus Av.	Residential	77.7 242		522	1125
6	Archibald Av.	s/o Merrill Av.	Residential	78.0	253	545	1174
7	Archibald Av.	s/o Limonite Av.	Residential	76.4	203	438	943
8	Archibald Av.	s/o 65th St.	Residential	75.5	178	383	825
9	Kimball Av.	w/o Hellman Av.	Residential	77.1	146	314	675
10	Limonite Av.	e/o Hellman Av.	Industrial (Agr.)	75.2	170	366	789
11	Limonite Av.	e/o Archibald Av.	Commercial/Res.	77.3	232	499	1075
12	Limonite Av.	e/o Harrison Av.	Residential	77.4	236	509	1098
13	Limonite Av.	e/o Sumner Av.	Residential	76.4	203	438	943
14	Limonite Av.	e/o Scholar Wy.	Residential	76.3	200	430	926
15	Limonite Av.	e/o Hamner Av.	Commercial	77.1	225	485	1044

¹ Sources: The Ontario Plan Exhibit LU-01, City of Chino General Plan Land Use Element Figure LU-2, and the City of Eastvale Land Use Map.



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

[&]quot;RW" = Location of the respective noise contour falls within the right-of-way of the road.

TABLE 7-8: HORIZON YEAR WITH PROJECT CONDITIONS NOISE CONTOURS

	Road		Adjacent	CNEL at Nearest	Distance to Contour from Centerline (Feet)			
ID		Segment	Planned (Existing) Land Use ¹	Adjacent Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	
1	Archibald Av.	n/o Chino Av.	Residential	77.6	237	511	1101	
2	Archibald Av.	s/o Chino Av.	Residential	77.3	226	487	1050	
3	Archibald Av.	s/o Schaefer Av.	Residential	77.1	219	472	1017	
4	Archibald Av.	s/o Ontario Ranch Rd.	Residential	77.9	249	536	1154	
5	Archibald Av.	s/o Eucalyptus Av.	Residential	77.9	248	534	1150	
6	Archibald Av.	s/o Merrill Av.	Residential	78.1	259	557	1200	
7	Archibald Av.	s/o Limonite Av.	Residential	76.5	205	442	952	
8	Archibald Av.	s/o 65th St.	Residential	75.5	178	383	826	
9	Kimball Av.	w/o Hellman Av.	Residential	77.2	148	319	688	
10	Limonite Av.	e/o Hellman Av.	Industrial (Agr.)	75.3	173	372	801	
11	Limonite Av.	e/o Archibald Av.	Commercial/Res.	77.4	236	508	1095	
12	Limonite Av.	e/o Harrison Av.	Residential	77.5	241	519	1117	
13	Limonite Av.	e/o Sumner Av.	Residential	76.5	208	447	964	
14	Limonite Av.	e/o Scholar Wy.	Residential	76.4	204	440	947	
15	Limonite Av.	e/o Hamner Av.	Commercial	77.2	228	492	1060	

¹ Sources: The Ontario Plan Exhibit LU-01, City of Chino General Plan Land Use Element Figure LU-2, and the City of Eastvale Land Use Map.

7.2 EXISTING CONDITIONS PROJECT TRAFFIC NOISE LEVEL CONTRIBUTIONS

An analysis of existing traffic noise levels plus traffic noise generated by the proposed Project has been included in this report. However, the analysis of existing traffic noise levels plus traffic noise generated by the proposed Project scenario will not actually occur since the Project would not be fully constructed and operational until Opening Year and later cumulative conditions.

Table 7-1 shows the Existing without Project conditions CNEL noise levels. The Existing without Project exterior noise levels are expected to range from 72.4 to 76.0 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-2 shows the Existing with Project conditions will range from 58.9 to 76.2 dBA CNEL. Table 7-9 shows that the Project off-site traffic noise level increases will range from 0.0 to 0.4 dBA CNEL.



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

[&]quot;RW" = Location of the respective noise contour falls within the right-of-way of the road.

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

ID	Road	Segment		EL at Adjac nd Use (dB	Noise- Sensitive Land Use?	Threshold Exceeded? ²	
			No Project	With Project	Project Addition	ose:	
1	Archibald Av.	n/o Chino Av.	76.0	76.2	0.2	Yes	No
2	Archibald Av.	s/o Chino Av.	75.5	75.8	0.3	Yes	No
3	Archibald Av.	s/o Schaefer Av.	75.2	75.5	0.3	Yes	No
4	Archibald Av.	s/o Ontario Ranch Rd.	75.8	76.0	0.2	Yes	No
5	Archibald Av.	s/o Eucalyptus Av.	75.7	75.9	0.2	Yes	No
6	Archibald Av.	s/o Merrill Av.	75.9	76.2	0.3	Yes	No
7	Archibald Av.	s/o Limonite Av.	74.0	74.1	0.1	Yes	No
8	Archibald Av.	s/o 65th St.	74.6	74.6	0.0	Yes	No
9	Kimball Av.	w/o Hellman Av.	74.3	74.5	0.2	Yes	No
10	Limonite Av.	e/o Hellman Av.	n/a	58.9	n/a	No	No
11	Limonite Av.	e/o Archibald Av.	72.4	72.7	0.3	Yes	No
12	Limonite Av.	e/o Harrison Av.	72.8	73.2	0.4	Yes	No
13	Limonite Av.	e/o Sumner Av.	73.2	73.4	0.2	Yes	No
14	Limonite Av.	e/o Scholar Wy.	73.7	74.0	0.3	Yes	No
15	Limonite Av.	e/o Hamner Av.	73.2	73.4	0.2	No	No

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

7.3 OPENING YEAR 2021 PROJECT TRAFFIC NOISE LEVEL CONTRIBUTIONS

Table 7-3 presents the Opening Year without Project conditions CNEL noise levels. The without Project exterior noise levels are expected to range from 56.6 to 76.4 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-4 shows the Opening Year with Project conditions will range from 60.9 to 76.6 dBA CNEL. As shown on Table 7-10 the Project will generate a noise level increase of up to 4.3 dBA CNEL on the study area roadway segments. Based on the significance criteria in Section 4, the Project-related noise level increases are considered *less than significant* under Opening Year conditions at the land uses adjacent to roadways conveying Project traffic.



² Significance Criteria (Section 4).

[&]quot;n/a" = Roadway segment does not exist in the given scenario.

TABLE 7-10: UNMITIGATED OPENING YEAR WITH PROJECT TRAFFIC NOISE IMPACTS

ID	Road	Segment		EL at Adjac nd Use (dB	Noise- Sensitive Land Use?	Threshold Exceeded? ²	
			No Project	With Project	Project Addition	oser	
1	Archibald Av.	n/o Chino Av.	76.4	76.6	0.2	Yes	No
2	Archibald Av.	s/o Chino Av.	76.0	76.2	0.2	Yes	No
3	Archibald Av.	s/o Schaefer Av.	75.7	76.0	0.3	Yes	No
4	Archibald Av.	s/o Ontario Ranch Rd.	76.2	76.4	0.2	Yes	No
5	Archibald Av.	s/o Eucalyptus Av.	76.1	76.3	0.2	Yes	No
6	Archibald Av.	s/o Merrill Av.	76.3	76.5	0.2	Yes	No
7	Archibald Av.	s/o Limonite Av.	74.4	74.5	0.1	Yes	No
8	Archibald Av.	s/o 65th St.	74.9	74.9	0.0	Yes	No
9	Kimball Av.	w/o Hellman Av.	74.6	74.8	0.2	Yes	No
10	Limonite Av.	e/o Hellman Av.	56.6	60.9	4.3	No	No
11	Limonite Av.	e/o Archibald Av.	72.9	73.2	0.3	Yes	No
12	Limonite Av.	e/o Harrison Av.	73.3	73.6	0.3	Yes	No
13	Limonite Av.	e/o Sumner Av.	73.6	73.9	0.3	Yes	No
14	Limonite Av.	e/o Scholar Wy.	74.2	74.4	0.2	Yes	No
15	Limonite Av.	e/o Hamner Av.	73.6	73.9	0.3	No	No

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

7.4 INTERIM YEAR 2023 PROJECT TRAFFIC NOISE LEVEL CONTRIBUTIONS

Table 7-5 presents the Interim Year without Project conditions CNEL noise levels. The without Project exterior noise levels are expected to range from 58.8 to 76.7 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-6 shows the Interim Year with Project conditions will range from 61.9 to 76.9 dBA CNEL. As shown on Table 7-11 the Project will generate a noise level increase of up to 3.1 dBA CNEL on the study area roadway segments. Based on the significance criteria in Section 4, the Project-related noise level increases are considered *less than significant* under Interim Year conditions at the land uses adjacent to roadways conveying Project traffic.



² Significance Criteria (Section 4).

[&]quot;n/a" = Roadway segment does not exist in the given scenario.

TABLE 7-11: UNMITIGATED INTERIM YEAR WITH PROJECT TRAFFIC NOISE IMPACTS

ID	Road	Segment		IEL at Adjao nd Use (dB	Noise- Sensitive Land	Threshold Exceeded? ²	
			No Project	With Project	Project Addition	Use?	
1	Archibald Av.	n/o Chino Av.	76.7	76.9	0.2	Yes	No
2	Archibald Av.	s/o Chino Av.	76.4	76.5	0.1	Yes	No
3	Archibald Av.	s/o Schaefer Av.	76.1	76.3	0.2	Yes	No
4	Archibald Av.	s/o Ontario Ranch Rd.	76.5	76.7	0.2	Yes	No
5	Archibald Av.	s/o Eucalyptus Av.	76.4	76.6	0.2	Yes	No
6	Archibald Av.	s/o Merrill Av.	76.6	76.8	0.2	Yes	No
7	Archibald Av.	s/o Limonite Av.	75.2	75.3	0.1	Yes	No
8	Archibald Av.	s/o 65th St.	75.2	75.2	0.0	Yes	No
9	Kimball Av.	w/o Hellman Av.	74.8	75.0	0.2	Yes	No
10	Limonite Av.	e/o Hellman Av.	58.8	61.9	3.1	No	No
11	Limonite Av.	e/o Archibald Av.	73.3	73.6	0.3	Yes	No
12	Limonite Av.	e/o Harrison Av.	73.7	74.0	0.3	Yes	No
13	Limonite Av.	e/o Sumner Av.	74.0	74.2	0.2	Yes	No
14	Limonite Av.	e/o Scholar Wy.	74.5	74.7	0.2	Yes	No
15	Limonite Av.	e/o Hamner Av.	73.9	74.1	0.2	No	No

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

7.5 HORIZON YEAR 2040 PROJECT TRAFFIC NOISE LEVEL CONTRIBUTIONS

Table 7-7 presents the Horizon Year without Project conditions CNEL noise levels. The without Project exterior noise levels are expected to range from 75.2 to 78.0 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-8 shows the Horizon Year with Project conditions will range from 75.3 to 78.1 dBA CNEL. As shown on Table 7-11 the Project will generate a noise level increase of up to 0.2 dBA CNEL on the study area roadway segments. Based on the significance criteria in Section 4, the Project-related noise level increases are considered *less than significant* under Horizon Year conditions at the land uses adjacent to roadways conveying Project traffic.



² Significance Criteria (Section 4).

[&]quot;n/a" = Roadway segment does not exist in the given scenario.

TABLE 7-12: UNMITIGATED HORIZON YEAR WITH PROJECT TRAFFIC NOISE IMPACTS

ID	Road	Segment		CNEL at Adjacent Land Use (dBA) ¹			Threshold Exceeded? ²
			Project Project Addition		Project Addition	Use?	
1	Archibald Av.	n/o Chino Av.	77.4	77.6	0.2	Yes	No
2	Archibald Av.	s/o Chino Av.	77.1	77.3	0.2	Yes	No
3	Archibald Av.	s/o Schaefer Av.	76.9	77.1	0.2	Yes	No
4	Archibald Av.	s/o Ontario Ranch Rd.	77.8	77.9	0.1	Yes	No
5	Archibald Av.	s/o Eucalyptus Av.	77.7	77.9	0.2	Yes	No
6	Archibald Av.	s/o Merrill Av.	78.0	78.1	0.1	Yes	No
7	Archibald Av.	s/o Limonite Av.	76.4	76.5	0.1	Yes	No
8	Archibald Av.	s/o 65th St.	75.5	75.5	0.0	Yes	No
9	Kimball Av.	w/o Hellman Av.	77.1	77.2	0.1	Yes	No
10	Limonite Av.	e/o Hellman Av.	75.2	75.3	0.1	No	No
11	Limonite Av.	e/o Archibald Av.	77.3	77.4	0.1	Yes	No
12	Limonite Av.	e/o Harrison Av.	77.4	77.5	0.1	Yes	No
13	Limonite Av.	e/o Sumner Av.	76.4	76.5	0.1	Yes	No
14	Limonite Av.	e/o Scholar Wy.	76.3	76.4	0.1	Yes	No
15	Limonite Av.	e/o Hamner Av.	77.1	77.2	0.1	No	No

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



² Significance Criteria (Section 4).

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8 SENSITIVE RECEIVER LOCATIONS

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

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

- R1: Located approximately 716 feet south of the Project site, R1 represents existing residential homes. A 24-hour noise measurement was taken near this location, L3, to describe the existing ambient noise environment.
- R2: Location R2 represents the existing residential homes located northwest of the Project site at roughly 238 feet. A 24-hour noise measurement was taken near this location, L1, to describe the existing ambient noise environment.
- R3: Location R3 represents the existing residential homes southeast of the Project site at approximately 1,422 feet. A 24-hour noise measurement near this location, L3, is used to describe the existing ambient noise environment.
- R4: Location R4 represents the existing residential homes located roughly 1,327 feet south of the Project site. A 24-hour noise measurement near this location, L4, is used to describe the existing ambient noise environment.



LIMONITE AVE SITE ROLLING MEADOWST

EXHIBIT 8-A: SENSITIVE RECEIVER LOCATIONS



Receiver Locations

6' Existing Barrier Height (in feet)

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



9 OPERATIONAL NOISE IMPACTS

This section analyzes the potential stationary-source operational noise impacts at the nearby receiver locations, identified in Section 8, resulting from operation of the proposed The Homestead Project. Exhibit 9-A identifies the representative receiver locations and noise source locations used to assess the operational noise levels. Appendix 9.1 includes the detailed calculations for the Project operational noise levels presented in this section.

9.1 OPERATIONAL NOISE SOURCES

At the time this noise analysis was prepared, the future tenants of the proposed Project were unknown. The on-site Project-related noise sources are expected to include: idling trucks, delivery truck activities, backup alarms, as well as loading and unloading of dry goods, roof-top air conditioning units, and parking lot vehicle movements. This noise analysis is intended to describe noise level impacts associated with the expected typical operational activities at the Project site.

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 idling trucks, delivery truck activities, backup alarms, as well as loading and unloading of dry goods, roof-top air conditioning units, and parking lot vehicle movements all operating simultaneously. These noise levels will likely vary throughout the day.

9.2.1 MEASUREMENT PROCEDURES

The reference noise level measurements presented in this section were collected using a Larson Davis LxT Type 1 precisions sound level meter (serial number 01146). The LxT sound level meter was calibrated using a Larson-Davis calibrator, Model CAL 200, was programmed in "slow" mode to record noise levels in "A" weighted form and was located at approximately five feet above the ground elevation for each measurement. The sound level meters and microphones were equipped with a windscreen during all measurements. All noise level measurement equipment satisfies the American National Standards Institute (ANSI) standard specifications for sound level meters ANSI S1.4-2014/IEC 61672-1:2013. (21)



TABLE 9-1: REFERENCE NOISE LEVEL MEASUREMENTS

Noise Source	Reference Meas. Duration (hh:mm:ss)	Dist. From Source (Feet)	Noise Source Height (Feet)	Hourly Activity (Min.) ⁴	Reference Noise Levels (dBA) at Reference Meas. Distance		Reference Noise Levels (dBA) at Uniform 50 Feet			
	,	, ,			L _{eq}	L ₂₅	L _{max}	L _{eq}	L ₂₅	L _{max}
Roof-Top Air Conditioning Unit ¹	96:00:00	5'	5'	60	77.2	76.1	78.2	57.2	56.1	58.2
Parking Lot Vehicle Movements ²	01:0:00	10'	5'	60	52.2	50.0	71.9	38.2	36.0	57.9
Truck Unloading/Docking Activity ³	00:15:00	30'	8'	60	67.2	67.2	80.0	62.8	62.8	75.6

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

9.2.2 ROOF-TOP AIR CONDITIONING UNITS

To assess the impacts created by the roof-top air conditioning units at the Project buildings, reference noise levels measurements were taken over a four-day total duration at the Santee Walmart on July 27th, 2015. Located at 170 Town Center Parkway in the City of Santee, the noise level measurements describe mechanical roof-top air conditioning units on the roof of an existing Walmart store, with additional roof-top units operating in the background. The reference noise level represents Lennox SCA120 series 10-ton model packaged air conditioning units. At 5 feet from the closest roof-top air conditioning unit, the highest exterior noise level from all four days of the measurement period was measured at 77.2 dBA Leq. Using the uniform reference distance of 50 feet, the noise level is 57.2 dBA Leq. The operating conditions of the reference noise level measurement reflect peak summer cooling requirements with measured temperatures approaching 96 degrees Fahrenheit (°F) with average daytime temperatures of 82°F.

9.2.3 PARKING LOT VEHICLE MOVEMENTS (AUTOS)

To determine the noise levels associated with parking lot vehicle movements, Urban Crossroads collected reference noise level measurements over a 24-hour period on May 17^{th} , 2017 at the parking lot for the Panasonic Avionics Corporation in the City of Lake Forest. The peak hour of activity measured over the 24-hour noise level measurement period occurred between 12:00 p.m. to 1:00 p.m., or the typical lunch hour for employees working in the area. The measured reference noise level at 50 feet from parking lot vehicle movements was measured at 41.7 dBA L_{eq} . The parking lot noise levels are mainly due to cars pulling in and out of spaces during peak lunch hour activity and employees talking.



² As measured by Urban Crossroads, Inc. on 5/17/2017 at the Panasonic Avionics Corporation parking lot in the City of Lake Forest.

³ As measured by Urban Crossroads, Inc. on 1/7/2015 at the Motivational Fulfillment & Logistics Services distribution facility in Chino.

⁴ Anticipated duration (minutes within the hour) of noise activity during peak hourly conditions expected at the Project site.

9.2.4 TRUCK IDLING, DELIVERIES, BACKUP ALARMS, UNLOADING/LOADING, AND DOCKING

A single, short-term reference noise level measurement was collected on Wednesday, January 7th, 2015, by Urban Crossroads, Inc. at the Motivational Fulfillment & Logistics Services distribution facility located at 6810 Bickmore Avenue in the City of Chino. The noise level measurement represents the typical weekday dry goods logistics warehouse operation in a single building, of roughly 285,000 square feet, with a loading dock area on the western side of the building façade. The noise sources observed in the truck court area included a combination of Heavy Trucks (tractor trailer semi-trucks), Medium Trucks (two-axle delivery trucks), container loading/unloading, background truck idle, unloading, and movements, and background forklift operations, as follows:

- 1 Medium Truck unloading and idling in the background, to the left of the measurement location at roughly 100 feet;
- 1 Medium Truck movement to exit the truck court during the reference measurement in front of the sound level meter location at roughly 20 feet when passing by;
- 1 Medium Truck unloading and idling in the background, to the right of the measurement location at roughly 50 feet;
- 1 Medium Truck movement to exit the truck court during the reference measurement to the right of the sound level meter location at approximately 50 feet;
- 1 Heavy Truck container unloading in the background, to the right of the measurement location at roughly 50 feet;
- 1 Heavy Truck movement into the truck court in front of the reference measurement location, backing up to a loading dock, unloading, and idling at approximately 30 feet;
- 1 Medium Truck idling and unloading at loading docks immediately across from the reference measurement location at roughly 30 feet;
- 1 Heavy Truck container unloading immediately across from the reference measurement location at roughly 30 feet;
- 1 Heavy Truck entry movement into the truck court, backing up to a loading dock, unloading, and idling immediately across from the reference measurement location at roughly 50 feet;
- 8 Heavy Truck containers docked at loading bays in various stages of unloading/loading activity at distances ranging from 50 to 100 feet;
- Background forklift movements and interior activities generating noise through the open warehouse doors, at distances ranging from 100 to 200 feet.

The unloading/docking activity noise level measurement was taken over a fifteen-minute period and represents multiple noise sources, as described above, taken from the center of loading dock activities generating a reference noise level of 62.8 dBA L_{eq} at a uniform reference distance of 50 feet. The noise sources associated with employees unloading a docked truck container included the squeaking of the truck's shocks when weight was removed from the truck, employees playing music over a radio, as well as a forklift horn and backup alarm.



9.3 Project Operational Noise Levels

Using the reference noise levels to represent the proposed Project operations that include idling trucks, delivery truck activities, backup alarms, as well as loading and unloading of dry goods, roof-top air conditioning units, and parking lot vehicle 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. The operational noise level calculations, shown on Table 9-2, account for the distance attenuation provided due to geometric spreading when sound from a localized stationary source (i.e., a point source) propagates uniformly outward in a spherical pattern. Hard site conditions are used in the operational noise analysis which result in noise levels that attenuate (or decrease) at a rate of 6 dBA for each doubling of distance from a point source. The basic noise attenuation equation shown below is used to calculate the distance attenuation based on a reference noise level (SPL₁):

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

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

Table 9-2 shows the individual operational noise levels of each noise source at each of the nearby sensitive receiver locations. As indicated on Table 9-3, the Project-only operational noise levels will range from 27.6 to 38.2 dBA L_{eq} at the sensitive receiver locations. The Project operational noise level calculations include the barrier and berm attenuation provided by the existing noise barriers and the Project buildings, where applicable.



LIMONITE AVE 1,655 1,457 1,742 ROLLING MEADOWS LEGEND: Receiver Locations ■ Roof-Top Air Conditioning Unit — Distance from receiver to noise source (in feet) 6' Existing Barrier Height (in feet) Parking Lot Vehicle Movements Existing Barrier Distribution/Warehouse Activity

EXHIBIT 9-A: OPERATIONAL NOISE SOURCE LOCATIONS



TABLE 9-2: UNMITIGATED PROJECT-ONLY OPERATIONAL NOISE LEVELS

_		Project Ope	erational Noise L	evels (dBA)³
Receiver Location ¹	Noise Source ²	L _{eq} (E. Avg.)	L ₂₅ (15 mins)	L _{max} (Anytime)
	Roof-Top Air Conditioning Unit	24.3	23.2	25.3
R1	Truck Unloading/Docking Activity	34.0	34.0	46.8
KI	Parking Lot Vehicle Movements	9.7	7.5	29.4
	Combined Noise Level:	34.5	34.4	46.9
	Roof-Top Air Conditioning Unit	30.7	29.6	31.7
D2	Truck Unloading/Docking Activity	37.3	37.3	50.1
R2	Parking Lot Vehicle Movements	16.1	13.9	35.8
	Combined Noise Level:	38.2	38.0	50.3
	Roof-Top Air Conditioning Unit	21.5	20.4	22.5
D2	Truck Unloading/Docking Activity	26.4	26.4	39.2
R3	Parking Lot Vehicle Movements	3.4	1.2	23.1
	Combined Noise Level:	27.6	27.4	39.4
	Roof-Top Air Conditioning Unit	21.9	20.8	22.9
D4	Truck Unloading/Docking Activity	27.9	27.9	40.7
R4	Parking Lot Vehicle Movements	4.0	1.8	23.7
	Combined Noise Level:	28.9	28.7	40.9

¹ See Exhibit 9-A for the receiver and noise source locations.

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 Eastvale and City of Ontario exterior noise level standards. Table 9-3 shows the operational noise levels associated with The Homestead Project will satisfy the exterior noise level standards at receiver locations during the daytime and nighttime hours, and therefore, the Project-related unmitigated operational noise levels are considered *less than significant* impacts.



² Reference noise sources as shown on Table 9-1.

³ Operational noise level calculations are provided in Appendix 9.1.

TABLE 9-3: UNMITIGATED OPERATIONAL NOISE LEVEL COMPLIANCE

		Noise Level a	at Receiver Loca	Threshold	Exceeded? ³	
Receiver ID ¹	City	L _{eq} (E. Avg.)	L ₂₅ (15 mins)	L _{max} (Anytime)	Daytime	Nighttime
	Fastuala	60	-	-	-	-
Residential	Eastvale	50	-	-	-	-
Standards	Ontario	65	65	85	-	-
		45	45	65	-	-
R1	Eastvale	34.5	34.4	46.9	No	No
R2	Ontario	38.2	38.0	50.3	No	No
R3	Eastvale	27.6	27.4	39.4	No	No
R4	Eastvale	28.9	28.7	40.9	No	No

¹ See Exhibit 9-A for the receiver and noise source locations.

9.4 Project Operational Noise Level Contributions

To describe the Project operational noise level contributions, the Project operational noise levels are combined with the existing ambient noise levels measurements for the nearby receiver locations potentially impacted by Project operational noise sources. Since the units used to measure noise, decibels (dB), are logarithmic units, the Project-operational and existing ambient noise levels cannot be combined using standard arithmetic equations. (4) Instead, they must be logarithmically added using the following base equation:

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

Where "SPL1," "SPL2," etc. are equal to the sound pressure levels being combined, or in this case, the Project-operational and existing ambient noise levels. The difference between the combined Project and ambient noise levels describe the Project noise level contributions to the existing ambient noise environment. Noise levels that would be experienced at receiver locations when Project-source noise is added to the daytime and nighttime ambient conditions are presented on Tables 9-4 and 9-5, respectively.

As indicated on Tables 9-4 and 9-5, the Project is not shown to generate an unmitigated daytime or nighttime operational noise level increase due to high ambient noise levels measured in the Project study area. Since the Project-related operational noise level contributions will satisfy the operational noise level increase significance criteria presented in Table 4-2, the increases at the sensitive receiver locations will be *less than significant*.



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

³ Do the estimated Project operational noise levels meet the operational noise level standards (Table 3-1)?

[&]quot;Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.; "E. Avg." = logarithmic (energy) average

TABLE 9-4: PROJECT DAYTIME NOISE LEVEL CONTRIBUTIONS

Receiver ID ¹	Unmitigated Project Noise Levels (dBA L _{eq}) ²	Measurement Location ³	Reference Ambient Noise Levels (dBA L _{eq}) ⁴	Combined Project and Ambient (dBA L _{eq}) ⁵	Project Contribution (dBA L _{eq}) ⁶	Threshold? ⁷	Threshold Exceeded? ⁷
R1	34.5	L3	62.8	62.8	0.0	3.0	No
R2	38.2	L1	67.4	67.4	0.0	1.5	No
R3	27.6	L3	62.8	62.8	0.0	3.0	No
R4	28.9	L4	57.6	57.6	0.0	5.0	No

¹ See Exhibit 9-A for the sensitive receiver locations.

TABLE 9-5: PROJECT NIGHTTIME NOISE LEVEL CONTRIBUTIONS

Receiver ID ¹	Unmitigated Project Noise Levels (dBA L _{eq}) ²	Measurement Location ³	Reference Ambient Noise Levels (dBA L _{eq}) ⁴	Combined Project and Ambient (dBA L _{eq}) ⁵	Project Contribution (dBA L _{eq}) ⁶	Threshold? ⁷	Threshold Exceeded? ⁷
R1	34.5	L3	62.4	62.4	0.0	3.0	No
R2	38.2	L1	65.6	65.6	0.0	1.5	No
R3	27.6	L3	62.4	62.4	0.0	3.0	No
R4	28.9	L4	50.9	50.9	0.0	5.0	No

¹ See Exhibit 9-A for the sensitive receiver locations.



² Unmitigated Project operational noise levels as shown on Table 9-3.

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

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

⁵ Represents the combined ambient conditions plus the Project activities.

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

⁷ Significance Criteria as defined in Section 4.

² Unmitigated Project operational noise levels as shown on Table 9-3.

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 Criteria as defined in Section 4.

10 CONSTRUCTION IMPACTS

This section analyzes potential impacts resulting from the short-term construction activities associated with the development of the Project. Exhibit 10-A shows the construction noise source locations in relation to the nearby sensitive receiver locations previously described in Section 8.

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 is expected to occur in the following stages, based on *Air Quality Impact Analysis* prepared for the Project: (30)

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

This construction noise analysis was prepared using reference noise level measurements taken by Urban Crossroads, Inc. to describe the typical construction activity noise levels for each stage of Project construction. The construction reference noise level measurements represent a list of typical construction activity noise levels. Noise levels generated by heavy construction equipment can range from approximately 68 dBA to more than 80 dBA when measured at 50 feet. However, these noise levels diminish with distance from the construction site at a rate of 6 dBA per doubling of distance. For example, a noise level of 80 dBA measured at 50 feet from the noise source to the receiver would be reduced to 74 dBA at 100 feet from the source to the receiver and would be further reduced to 68 dBA at 200 feet from the source to the receiver.

10.2 CONSTRUCTION REFERENCE NOISE LEVELS

To describe the Project construction noise levels, measurements were collected for similar activities at several construction sites. Table 10-1 provides a summary of the construction reference noise level measurements. Since the reference noise levels were collected at varying distances of 30 feet and 50 feet, all construction noise level measurements presented on Table 10-1 have been adjusted for consistency to describe a uniform reference distance of 50 feet.



ONTARIO LIMONITE AVE 1,442 EASTVALE ROLLING MEADOWS **LEGEND:** Receiver Locations Construction Activity

EXHIBIT 10-A: CONSTRUCTION NOISE SOURCE LOCATIONS



Existing Barrier

Existing Barrier Height (in feet) — Distance from receiver to construction activity (in feet)

TABLE 10-1: CONSTRUCTION REFERENCE NOISE LEVELS

ID	Noise Source	Reference Distance From Source (Feet)	Reference Noise Levels @ Reference Distance (dBA L _{eq})	Reference Noise Levels @ 50 Feet (dBA L _{eq}) ⁵
1	Truck Pass-Bys & Dozer Activity ¹	30'	63.6	59.2
2	Dozer Activity ¹	30'	68.6	64.2
3	Construction Vehicle Maintenance Activities ²	30'	71.9	67.5
4	Foundation Trenching ²	30'	72.6	68.2
5	Rough Grading Activities ²	30'	77.9	73.5
6	Framing ³	30'	66.7	62.3
7	Concrete Mixer Truck Movements ⁴	50'	71.2	71.2
8	Concrete Paver Activities ⁴	30'	70.0	65.6
9	Concrete Mixer Pour & Paving Activities ⁴	30'	70.3	65.9
10	Concrete Mixer Backup Alarms & Air Brakes ⁴	50'	71.6	71.6
11	Concrete Mixer Pour Activities ⁴	50'	67.7	67.7
12	Forklift, Jackhammer, & Metal Truck Bed Activities ⁵	50'	67.9	67.9

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

10.3 Construction Noise Analysis

Using the reference construction equipment noise levels, calculations of the Project construction noise level impacts at the nearby sensitive receiver locations were completed. Tables 10-2 to 10-6 present the short-term construction noise levels for each stage of construction. Table 10-7 provides a summary of the construction noise levels by stage at the nearby noise-sensitive receiver locations. Based on the stages of construction, the noise impacts associated with the proposed Project are expected to create temporarily high noise levels at the nearby receiver locations. To assess the worst-case construction noise levels, this analysis shows the highest noise impacts when the equipment with the highest reference noise level is operating at the closest point from the edge of primary construction activity to each receiver location.



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

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

⁴ Reference noise level measurements were collected from a nighttime concrete pour at an industrial construction site, located at 27334 San Bernardino Avenue in the City of Redlands, between 1:00 a.m. to 2:00 a.m. on 7/1/15.

⁵ Reference noise levels are calculated at 50 feet using a drop off rate of 6 dBA per doubling of distance (point source).

TABLE 10-2: DEMOLITION/SITE PREPARATION EQUIPMENT NOISE LEVELS

Reference Construction Activity ¹	Reference Noise Level @ 50 Feet (dBA L _{eq})
Truck Pass-Bys & Dozer Activity	59.2
Dozer Activity	64.2
Forklift, Jackhammer, & Metal Truck Bed Activities	67.9
Highest Reference Noise Level at 50 Feet (dBA L _{eq}):	67.9

Receiver Location	Distance to Construction Activity (Feet) ²	Distance Attenuation (dBA L _{eq}) ³	Estimated Noise Barrier Attenuation (dBA L _{eq}) ⁴	Construction Noise Level (dBA L _{eq})
R1	736'	-23.4	-5.0	39.5
R2	258'	-14.3	-5.0	48.6
R3	1,442'	-29.2	-5.0	33.7
R4	1,347'	-28.6	-5.0	34.3

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



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

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

⁴ Estimated barrier attenuation from existing barriers in the Project study area.

TABLE 10-3: GRADING EQUIPMENT NOISE LEVELS

Reference Construction Activity ¹	Reference Noise Level @ 50 Feet (dBA L _{eq})
Truck Pass-Bys & Dozer Activity	59.2
Dozer Activity	64.2
Rough Grading Activities	73.5
Highest Reference Noise Level at 50 Feet (dBA Leq):	73.5

Receiver Location	Distance to Construction Activity (Feet) ²	Distance Attenuation (dBA L _{eq}) ³	Estimated Noise Barrier Attenuation (dBA L _{eq}) ⁴	Construction Noise Level (dBA L _{eq})
R1	736'	-23.4	-5.0	45.1
R2	258'	-14.3	-5.0	54.2
R3	1,442'	-29.2	-5.0	39.3
R4	1,347'	-28.6	-5.0	39.9

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

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

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

⁴ Estimated barrier attenuation from existing barriers in the Project study area.

TABLE 10-4: BUILDING CONSTRUCTION EQUIPMENT NOISE LEVELS

Reference Construction Activity ¹	Reference Noise Level @ 50 Feet (dBA L _{eq})
Construction Vehicle Maintenance Activities	67.5
Foundation Trenching	68.2
Framing	62.3
Highest Reference Noise Level at 50 Feet (dBA Leq):	68.2

Receiver Location	Distance to Construction Activity (Feet) ²	Distance Attenuation (dBA L _{eq}) ³	Estimated Noise Barrier Attenuation (dBA L _{eq}) ⁴	Construction Noise Level (dBA L _{eq})
R1	736'	-23.4	-5.0	39.8
R2	258'	-14.3	-5.0	48.9
R3	1,442'	-29.2	-5.0	34.0
R4	1,347'	-28.6	-5.0	34.6

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



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

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

⁴ Estimated barrier attenuation from existing barriers in the Project study area.

TABLE 10-5: PAVING EQUIPMENT NOISE LEVELS

Reference Construction Activity ¹	Reference Noise Level @ 50 Feet (dBA L _{eq})
Concrete Mixer Truck Movements	71.2
Concrete Paver Activities	65.6
Concrete Mixer Pour & Paving Activities	65.9
Concrete Mixer Backup Alarms & Air Brakes	71.6
Concrete Mixer Pour Activities	67.7
Highest Reference Noise Level at 50 Feet (dBA L _{eq}):	71.6

Receiver Location	Distance to Construction Activity (Feet) ²	Distance Attenuation (dBA L _{eq}) ³	Estimated Noise Barrier Attenuation (dBA L _{eq}) ⁴	Construction Noise Level (dBA L _{eq})
R1	736'	-23.4	-5.0	43.2
R2	258'	-14.3	-5.0	52.3
R3	1,442'	-29.2	-5.0	37.4
R4	1,347'	-28.6	-5.0	38.0

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



² Distance from the nearest point of construction activity to the nearest receiver.

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

⁴ Estimated barrier attenuation from existing barriers in the Project study area.

TABLE 10-6: ARCHITECTURAL COATING EQUIPMENT NOISE LEVELS

Reference Construction Activity ¹	Reference Noise Level @ 50 Feet (dBA L _{eq})
Construction Vehicle Maintenance Activities	67.5
Framing	62.3
Highest Reference Noise Level at 50 Feet (dBA L _{eq}):	67.5

Receiver Location	Distance to Construction Activity (Feet) ²	Distance Attenuation (dBA L _{eq}) ³	Estimated Noise Barrier Attenuation (dBA L _{eq}) ⁴	Construction Noise Level (dBA L _{eq})
R1	736'	-23.4	-5.0	39.1
R2	258'	-14.3	-5.0	48.2
R3	1,442'	-29.2	-5.0	33.3
R4	1,347'	-28.6	-5.0	33.9

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

10.4 CONSTRUCTION NOISE LEVEL COMPLIANCE

The construction noise analysis shows that the highest construction noise levels will occur when construction activities take place at the closest point from primary Project construction activity to each of the nearby receiver locations. As shown on Table 10-7, the unmitigated construction noise levels are expected to range from 33.3 to 54.2 dBA L_{eq} at the nearby receiver locations.

TABLE 10-7: UNMITIGATED CONSTRUCTION EQUIPMENT NOISE LEVEL SUMMARY (DBA LEQ)

	Unmitigated Construction Noise Levels (dBA L _{eq})						
Receiver Location ¹	Demolition & Site Preparation	Grading	Building Construction	Paving	Architectural Coating	Highest Construction Noise Levels ²	
R1	39.5	45.1	39.8	43.2	39.1	45.1	
R2	48.6	54.2	48.9	52.3	48.2	54.2	
R3	33.7	39.3	34.0	37.4	33.3	39.3	
R4	34.3	39.9	34.6	38.0	33.9	39.9	

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



² Distance from the nearest point of construction activity to the nearest receiver.

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

⁴ Estimated barrier attenuation from existing barriers in the Project study area.

² Estimated construction noise levels during peak operating conditions.

To evaluate whether the Project will generate potentially significant short-term noise levels at off-site sensitive receiver locations a construction-related the NIOSH noise level threshold of 85 dBA L_{eq} is used as acceptable thresholds for construction noise at the nearby sensitive receiver locations. Table 10-8 shows the highest construction noise levels at the potentially impacted receiver locations are expected to approach 54.2 dBA L_{eq} and will satisfy the NIOSH 85 dBA L_{eq} significance threshold during temporary Project construction activities. The noise impact due to unmitigated Project construction noise levels is, therefore, considered a *less than significant* impact at all nearby sensitive receiver locations.

TABLE 10-8: CONSTRUCTION EQUIPMENT NOISE LEVEL COMPLIANCE (DBA LEQ)

	Unmitigated Construction Noise Levels (dBA L _{eq})				
Receiver Location ¹	Highest Construction Noise Level ²	Threshold ³	Threshold Exceeded? ⁴		
R1	45.1	85	No		
R2	54.2	85	No		
R3	39.3	85	No		
R4	39.9	85	No		

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

10.5 CONSTRUCTION NOISE LEVEL INCREASES

To describe the temporary Project construction noise level contributions to the existing ambient noise environment, the Project construction noise levels were combined with the existing ambient noise levels measurements at the off-site receiver locations. The difference between the combined Project-construction and ambient noise levels are used to describe the construction noise level contributions. Temporary noise level increases that would be experienced at sensitive receiver locations when Project construction-source noise is added to the ambient daytime conditions are presented on Table 10-9. A temporary noise level increase of 12 dBA L_{eq} is considered a potentially significant impact based on the Caltrans substantial noise level increase criteria which is used to assess the Project-construction noise level increases. (4) No nighttime construction activity is permitted in the City of Eastvale Municipal Code, and therefore, nighttime noise level increases are not evaluated in this analysis.

As indicated in Table 10-9, the Project will contribute unmitigated, worst-case construction noise level increases between 0.0 to 0.2 dBA L_{eq} at the adjacent sensitive receiver locations during the daytime hours. The worst-case temporary noise level increases during Project construction activities are shown to remain below the 12 dBA L_{eq} significance threshold at all receiver locations, and therefore, the unmitigated construction-source noise level increases are considered *less than significant*.



² Estimated construction noise levels during peak operating conditions, as shown on Table 10-7.

³ Construction noise level threshold as shown on Table 4-2.

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

TABLE 10-9: UNMITIGATED CONSTRUCTION TEMPORARY NOISE LEVEL INCREASES

Receiver Location ¹	Highest Project Construction Noise Level ²	Measurement Location ³	Reference Ambient Noise Levels ⁴	Combined Project and Ambient ⁵	Temporary Worst-Case Project Contribution ⁶	Threshold Exceeded? ⁷
R1	45.1	L3	62.8	62.9	0.1	No
R2	54.2	L1	67.4	67.6	0.2	No
R3	39.3	L3	62.8	62.8	0.0	No
R4	39.9	L4	57.6	57.7	0.1	No

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

10.6 Construction Vibration Impacts

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

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

Ground-borne vibration levels resulting from construction activities occurring within the Project site were estimated by data published by the Federal Transit Administration. Construction activities that would have the potential to generate low levels of ground-borne vibration within the Project site include grading. Using the vibration source level of construction equipment provided on Table 6-9 and the construction vibration assessment methodology published by the FTA, it is possible to estimate the Project vibration impacts. Table 10-10 presents the expected Project related vibration levels at the nearby receiver locations.

At distances ranging from 258 to 1,442 feet from Project construction activities, construction peak vibration velocity levels are expected to approach 0.003 in/sec PPV and will remain below the City of Eastvale threshold of 0.0787 in/sec PPV at all receiver locations, as shown on Table 10-10. Therefore, the Project-related vibration impacts are considered *less than significant* during the construction activities at the Project site.



² Highest unmitigated Project construction noise levels as shown on Table 10-8.

³ Ambient 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 construction activities.

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

⁷ Based on the 12 dBA temporary increase significance criteria as defined in Section 4.

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

TABLE 10-10: PROJECT CONSTRUCTION VIBRATION LEVELS

	Distance	Receiver PPV Levels (in/sec) ²					
Receiver Location ¹	To Const. Activity (Feet)	Small Bulldozer	Jack- hammer	Loaded Trucks	Large Bulldozer	Highest Levels (PPV)	Threshold Exceeded? ³
R1	736'	0.0000	0.0002	0.0005	0.0006	0.0006	No
R2	258'	0.0001	0.0011	0.0023	0.0027	0.0027	No
R3	1,442'	0.0000	0.0001	0.0002	0.0002	0.0002	No
R4	1,347'	0.0000	0.0001	0.0002	0.0002	0.0002	No

¹ Receiver locations are shown on Exhibit 10-A.



 $^{^{\}rm 2}$ Based on the Vibration Source Levels of Construction Equipment included on Table 6-9.

³ Does the peak vibration exceed the maximum acceptable vibration threshold shown on Table 3-1?

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11 REFERENCES

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- 6. **Environmental Protection Agency Office of Noise Abatement and Control.** *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety.* March 1974. EPA/ONAC 550/9/74-004.
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- 9. **U.S.** Environmental Protection Agency Office of Noise Abatement and Control. Noise Effects Handbook-A Desk Reference to Health and Welfare Effects of Noise. October 1979 (revised July 1981). EPA 550/9/82/106.
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- 16. City of Chino. General Plan Noise Element. July 2010.
- 17. City of Ontario. Municipal Code, Title 5, Chapter 29 Noise.
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- 20. City of Chino. Municipal Code, Chapter 9.40 Noise, and Section 20.09.050 Airport Overlay District.
- 21. County of San Bernardino. Chino Airport Master Plan, Appendix B Environmental Overview. 2010.
- 22. **San Bernardino County Airport Land Use Commission.** *Chino Airport Comprehensive Land Use Plan.* November 1991.
- 23. California Court of Appeal. *Gray v. County of Madera, F053661.* 167 Cal.App.4th 1099; Cal.Rptr.3d, October 2008.



- 24. **Federal Interagency Committee on Noise.** *Federal Agency Review of Selected Airport Noise Analysis Issues.* August 1992.
- 25. American National Standards Institute (ANSI). Specification for Sound Level Meters ANSI S1.4-2014/IEC 61672-1:2013.
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- 27. California Department of Transportation Environmental Program, Office of Environmental Engineering. Use of California Vehicle Noise Reference Energy Mean Emission Levels (Calveno REMELs) in FHWA Highway Traffic Noise Prediction. September 1995. TAN 95-03.
- 28. **California Department of Transportation.** *Traffic Noise Attenuation as a Function of Ground and Vegetation Final Report.* June 1995. FHWA/CA/TL-95/23.
- 29. **County of Riverside, Office of Industrial Hygiene.** *Requirements for Determining and Mitigating Traffic Noise Impacts to Residential Structures.* April 2015.
- 30. Urban Crossroads, Inc. The Homestead Air Quality Impact Analysis. August 2019.



12 CERTIFICATION

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

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



EDUCATION

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

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

PROFESSIONAL REGISTRATIONS

PE – Registered Professional Traffic Engineer – TR 2537 • January, 2009

AICP – American Institute of Certified Planners – 013011 • June, 1997–January 1, 2012

PTP – Professional Transportation Planner • May, 2007 – May, 2013

INCE – Institute of Noise Control Engineering • March, 2004

PROFESSIONAL AFFILIATIONS

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

PROFESSIONAL CERTIFICATIONS

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



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APPENDIX 3.1:

CITY OF EASTVALE MUNICIPAL CODE



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CHAPTER 8.52. - NOISE REGULATION

Sec. 8.52.010. - Reserved.

Sec. 8.52.020. - Exemptions.

Sound emanating from the following sources is exempt from the provisions of this chapter:

- (1) Facilities owned or operated by or for a governmental agency;
- (2) Capital improvement projects of a governmental agency;
- (3) The maintenance or repair of public properties;
- (4) Public safety personnel in the course of executing their official duties, including, but not limited to, sworn peace officers, emergency personnel and public utility personnel. This exemption includes, without limitation, sound emanating from all equipment used by such personnel, whether stationary or mobile;
- (5) Public or private schools and school-sponsored activities;
- (6) Agricultural operations on land designated agriculture in the city general plan, or land zoned A-l (light agriculture), A-P (light agriculture with poultry), A-2 (heavy agriculture), A-D (agriculture-dairy) or C/V (citrus/vineyard), provided such operations are carried out in a manner consistent with accepted industry standards. This exemption includes, without limitation, sound emanating from all equipment used during such operations, whether stationary or mobile;
- (7) Wind energy conversion systems (WECS), provided such systems comply with the WECS noise provisions of county Ordinance No. 348;
- (8) Private construction projects located one-quarter of a mile or more from an inhabited dwelling;
- (9) Private construction projects located within one-quarter of a mile from an inhabited dwelling, provided that construction does not occur between the hours of:
 - a. 6:00 p.m. and 6:00 a.m. during the months of June through September; and
 - b. 6:00 p.m. and 7:00 a.m. during the months of October through May;
- (10) Property maintenance, including, but not limited to, the operation of lawnmowers, leaf blowers, etc., provided such maintenance occurs between the hours of 7:00 a.m. and 8:00 p.m.;
- (11) Motor vehicles, other than off-highway vehicles. This exemption does not include sound emanating from motor vehicle sound systems;
- (12) Heating and air conditioning equipment;
- (13) Safety, warning and alarm devices, including, but not limited to, house and car alarms, and other warning devices that are designed to protect the public health, safety and welfare;
- (14) The discharge of firearms consistent with all state laws.

(Ord. No. 2011-04, §§ 1, 2, 1-26-2011)

Sec. 8.52.030. - Definitions.

The following words, terms and phrases, when used in this chapter, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Audio equipment means a television, stereo, radio, tape player, compact disc player, mp3 player, I-POD or other similar device.

Decibel (dB) means a unit for measuring the relative amplitude of a sound equal approximately to the smallest difference normally detectable by the human ear, the range of which includes approximately 130 decibels on a scale beginning with zero decibels for the faintest detectable sound. Decibels are measured with a sound level meter using different methodologies defined as follows:

- (1) The term, "A-weighting (dBA)" means the standard A-weighted frequency response of a sound level meter, which de-emphasizes low and high frequencies of sound in a manner similar to the human ear for moderate sounds.
- (2) The term "maximum sound level (Lmax)" means the maximum sound level measured on a sound level meter.

Governmental agency means the United States, the state, the county, any city within the county, any special district within the county or any combination of these agencies.

Land use permit means a discretionary permit issued by the city pursuant to title 120 (planning and zoning) of this Code.

Motor vehicle means a vehicle that is self-propelled.

Motor vehicle sound system means a stereo, radio, tape player, compact disc player, mp3 player, I-POD or other similar device in a motor vehicle.

Noise means any loud, discordant or disagreeable sound.

Occupied property means property upon which is located a residence, business or industrial or manufacturing use.

Off-highway vehicle means a motor vehicle designed to travel over any terrain.

Public or private school means an institution conducting academic instruction at the preschool, elementary school, junior high school or college level.

Public property means property owned by a governmental agency or held open to the public, including, but not limited to, parks, streets, sidewalks, and alleys.

Sensitive receptor means a land use that is identified as sensitive to noise in the noise element of the city general plan, including, but not limited to, residences, schools, hospitals, churches, rest homes, cemeteries or public libraries.

Sound-amplifying equipment means a loudspeaker, microphone, megaphone or other similar device.

Sound level meter means an instrument meeting the standards of the American National Standards Institute for type 1 or type 2 sound level meters or an instrument that provides equivalent data.

(Ord. No. 2011-04, §§ 1, 2, 1-26-2011)

Sec. 8.52.040. - General sound level standards.

No person shall create any sound, or allow the creation of any sound, on any property that causes the exterior sound level on any other occupied property to exceed the sound level standards set forth in the following table:

eneral Plan Foundation	Maximum De	Maximum Decibel Level		
and Use Designation eneral Plan	Land Use Designation Name	Density	7:00 a.m.— 10:00 p.m.	10:00 p.m. — 7:00 a.m.
ommunity development				
EDR	Estate density residential	2 acres	55	45
VLDR	Very low-density residential	1 acre	55	45
LDR	Low-density residential	½ acre	55	45
MDR	Medium-density residential	2—5	55	45
MHDR	Medium high-density residential	5—8	55	45
HDR	High-density residential	8—14	55	45
VHDR	Very high-density residential	14—20	55	45
H'TDR	Highest density residential	20+	55	45
CR	Retail commercial		65	55
СО	Office commercial		65	55
СТ	Tourist commercial		65	55
СС	Community center		65	55
Ц	Light industrial		75	55
н	Heavy industrial		75	75
ВР	Business park		65	45
PF	Public facility		65	45
SP	Specific plan-residential		55	45
	Specific plan-commercial		65	55

9/20	10	Eastvale, CA Code of Of	ullances		
		Specific plan-light industrial		75	55
		Specific plan-heavy industrial		75	75
R	ural community				
	EDR	Estate density residential	2 acres	55	45
	VLDR	Very low-density residential	1 acre	55	45
	LDR	Low-density residential	½ acre	55	45
R	ural				
	RR	Rural residential	5 acres	45	45
	RM	Rural mountainous	10 acres	45	45
	RD	Rural desert	10 acres	45	45
Agriculture					
	AG	Agriculture	10 acres	45	45
Open space					
	С	Conservation		45	45
	СН	Conservation habitat		45	45
	REC	Recreation		45	45
	RUR	Rural	20 acres	45	45
	W	Watershed		45	45
	MR	Mineral resources		75	45

(Ord. No. 2011-04, §§ 1, 2, 1-26-2011)

Sec. 8.52.050. - Sound level measurement methodology.

Sound level measurements may be made anywhere within the boundaries of an occupied property. The actual location of a sound level measurement shall be at the discretion of the enforcement officials identified in <u>section 8.52.080</u>. Sound level measurements shall be made with a sound level meter. Immediately before a measurement is made, the sound level meter shall be calibrated utilizing an acoustical calibrator meeting the standards of the American National Standards Institute. Following a sound level measurement, the calibration of the sound level meter shall be reverified. Sound level meters and calibration equipment shall be certified annually.

(Ord. No. 2011-04, §§ 1, 2, 1-26-2011)

Sec. 8.52.060. - Special sound sources standards.

The general sound level standards set forth in <u>section 8.52.040</u> apply to sound emanating from all sources, including the special sound sources set forth in this section, and the person creating, or allowing the creation of, the sound is subject to the requirements of that section. The following special sound sources are also subject to the following additional standards, the failure to comply with which constitutes separate violations of this chapter:

(1) Motor vehicles.

- a. Off-highway vehicles.
 - No person shall operate an off-highway vehicle unless it is equipped with a USDA-qualified spark arrester and a constantly operating and properly maintained muffler. A muffler is not considered constantly operating and properly maintained if it is equipped with a cutout, bypass or similar device.
 - 2. No person shall operate an off-highway vehicle unless the noise emitted by the vehicle is not more than 96 dBA if the vehicle was manufactured on or after January 1, 1986, or is not more than 101 dBA if the vehicle was manufactured before January 1, 1986. For purposes of this subsection, emitted noise shall be measured a distance of 20 inches from the vehicle tailpipe using test procedures established by the Society of Automotive Engineers under Standard J-1287.
- b. *Sound systems.* No person shall operate a motor vehicle sound system, whether affixed to the vehicle or not, between the hours of 10:00 p.m. and 8:00 a.m., such that the sound system is audible to the human ear inside any inhabited dwelling. No person shall operate a motor vehicle sound system, whether affixed to the vehicle or not, at any other time such that the sound system is audible to the human ear at a distance greater than 100 feet from the vehicle.
- (2) Power tools and equipment. No person shall operate any power tools or equipment between the hours of 10:00 p.m. and 8:00 a.m. such that the power tools or equipment are audible to the human ear inside an inhabited dwelling other than a dwelling in which the power tools or equipment may be located. No person shall operate any power tools or equipment at any other time such that the power tools or equipment are audible to the human ear at a distance greater than 100 feet from the power tools or equipment.
- (3) Audio equipment. No person shall operate any audio equipment, whether portable or not, between the hours of 10:00 p.m. and 8:00 a.m. such that the equipment is audible to the human ear inside an inhabited dwelling other than a dwelling in which the equipment may be located. No person shall operate any audio equipment, whether portable or not, at any other time such that the equipment is audible to the human ear at a distance greater than 100 feet from the equipment.

- (4) Sound-amplifying equipment and live music. No person shall install, use or operate sound-amplifying equip perform, or allow to be performed, live music unless such activities comply with the following requirements that these requirements conflict with any conditions of approval attached to an underlying land use permit, requirements shall control:
 - a. Sound-amplifying equipment or live music is prohibited between the hours of 10:00 p.m. and 8:00 a.m.
 - b. Sound emanating from sound-amplifying equipment or live music at any other time shall not be audible to the human ear at a distance greater than 200 feet from the equipment or music.

(Ord. No. 2011-04, §§ 1, 2, 1-26-2011)

Sec. 8.52.070. - Exceptions.

Exceptions may be requested from the standards set forth in <u>section 8.52.040</u> or <u>8.52.060</u> and may be characterized as construction-related, single-event or continuous event exceptions.

- (1) Application and processing.
 - a. *Construction-related exceptions.* An application for a construction-related exception shall be made to and considered by the city on forms provided by the city and shall be accompanied by the appropriate filing fee. No public hearing is required.
 - b. *Single-event exceptions.* An application for a single-event exception shall be made to and considered by the city on forms provided by the planning department and shall be accompanied by the appropriate filing fee. No public hearing is required.
 - c. Continuous-event exceptions. An application for a continuous-event exception shall be made to the city on forms provided by the planning department and shall be accompanied by the appropriate filing fee. Upon receipt of an application for a continuous-event exception, the city shall set the matter for public hearing before the planning commission, notice of which shall be given as provided in the Eastvale Municipal Code. Notwithstanding the exceptions set forth in this section, an application for a continuous-event exception that is associated with an application for a land use permit shall be processed concurrently with the land use permit in the same manner that the land use permit is required to be processed.
- (2) Requirements for approval. The appropriate decision making body or officer shall not approve an exception application unless the applicant demonstrates that the activities described in the application would not be detrimental to the health, safety or general welfare of the community. In determining whether activities are detrimental to the health, safety or general welfare of the community, the appropriate decision-making body or officer shall consider such factors as the proposed duration of the activities and their location in relation to sensitive receptors. If an exception application is approved, reasonable conditions may be imposed to minimize the public detriment, including, but not limited to, restrictions on sound level, sound duration and operating hours.
- (3) Appeals. The city's decision on an application for a construction-related exception is considered final. The city's decision on an application for a single-event exception is considered final. After making a decision on an application for a continuous-event exception, the appropriate decision-making body or officer shall mail notice of the decision to the applicant. Within ten calendar days after the mailing of such notice, the applicant or an interested person may appeal the decision to the city council. Upon receipt of an appeal and payment of the appropriate appeal fee, the city clerk shall set the matter for hearing not less than

five days nor more than 30 days thereafter and shall give written notice of the hearing in the same manner as notice of the hearing was given by the appropriate hearing officer or body. The city council shall render its decision within 30 days after the appeal hearing is closed.

(4) Effect of a pending continuous-event exception application. For a period of 180 days from the effective date of the ordinance from which this chapter is derived, no person creating any sound prohibited by this chapter shall be considered in violation of this chapter if the sound is related to a use that is operating pursuant to an approved land use permit, if an application for a continuous-event exception has been filed to sanction the sound and if a decision on the application is pending.

(Ord. No. 2011-04, §§ 1, 2, 1-26-2011)

Sec. 8.52.080. - Enforcement.

The chief of police and planning director shall have the primary responsibility for enforcing this chapter; provided, however, the chief of police and planning director may be assisted by the public health department. Violations shall be prosecuted as described in <u>section 8.52.100</u>, but nothing in this chapter shall prevent the chief of police, planning director or the department of public health from engaging in efforts to obtain voluntary compliance by means of warnings, notices or educational programs.

(Ord. No. 2011-04, §§ 1, 2, 1-26-2011)

Sec. 8.52.090. - Duty to cooperate.

No person shall refuse to cooperate with, or obstruct, the enforcement officials identified in <u>section 8.52.080</u> when they are engaged in the process of enforcing the provisions of this chapter. This duty to cooperate may require a person to extinguish a sound source so that it can be determined whether sound emanating from the source violates the provisions of this chapter.

(Ord. No. 2011-04, §§ 1, 2, 1-26-2011)

Sec. 8.52.100. - Violations and penalties.

Any person who violates any provision of this chapter once or twice within a 180-day period shall be guilty of an infraction. Any person who violates any provision of this chapter more than twice within a 180-day period shall be guilty of a misdemeanor. Each day a violation is committed or permitted to continue shall constitute a separate offense and shall be punishable as such. Penalties shall not exceed the following amounts:

- (1) For the first violation within a 180-day period, the minimum mandatory fine shall be \$500.00.
- (2) For the second violation within a 180-day period, the minimum mandatory fine shall be \$750.00.
- (3) For any further violations within a 180-day period, the minimum mandatory fine shall be \$1,000.00 or imprisonment in the county jail for a period not exceeding six months, or both.

(Ord. No. 2011-04, §§ 1, 2, 1-26-2011)

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APPENDIX 3.2:

CITY OF ONTARIO MUNICIPAL CODE



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Print

Ontario Municipal Code

CHAPTER 29: NOISE

5-29.01	Declaration of findings and policy
5-29.02	Definitions
5-29.03	Designated noise zones
5-29.04	Exterior noise standards
5-29.05	Interior noise standards
5-29.06	Exemptions
5-29.07	Loud and disturbing noise
5-29.08	Real property maintenance noise regulations
5-29.09	Construction activity noise regulations
5-29.10	Other public agency exceptions
5-29.11 institutions	Schools, day care centers, churches, libraries, museums, health care s; Special provisions
5-29.12	Sound amplifying equipment
5-29.13	Amplified sound
5-29.14	Motor vehicles
5-29.15	Noise level measurement
5-29.16	Prima facie violation
5-29.17	Penalty
5-29.18	Enforcement and administration
5-29.19	City Manager waiver
5-29.20	Noise abatement program

Sec. 5-29.01. Declaration of findings and policy.

It is hereby found and declared that:

- (a) The making and creation of excessive, unnecessary or unusually loud noises within the limits of the City is a condition that has existed for some time, however, the extent and volume of such noises is increasing;
- (b) The making, creation or maintenance of such excessive, unnecessary, unnatural or unusually loud noises that are prolonged, unusual and unnatural in their time, place and use

affect and are a detriment to public health, comfort, convenience, safety, welfare and prosperity of the residents of the City; and

- (c) The necessity in the public interest for the provisions and prohibitions hereinafter contained and enacted, is declared as a matter of legislative determination and public policy, and it is further declared that the provisions and prohibitions hereinafter contained and enacted are in pursuance of and for the purpose of securing and promoting the public health, comfort, convenience, safety, welfare and prosperity and the peace and quiet of the residents of the City.
- (§ 2, Ord. 2888, eff. March 6, 2008)

Sec. 5-29.02. Definitions.

As used in this chapter, specific words and phrases are defined as follows:

- (a) "Ambient noise level" shall mean the all-encompassing noise level associated with a given environment and is a composite of sounds from all sources, excluding the alleged offensive noise or excessive sound, at the location and approximate time at which a comparison with the alleged offensive noise is to be made.
- (b) "Applicable (noise) zone" shall mean the noise zone category based on the actual use of the property, provided that the actual use is a legal use in the City.
- (c) "A-weighted sound level" shall mean the sound pressure level in decibels (dBAs) as measured with a sound level meter using the A-weighted filter network (scale) at slow response and at a pressure of twenty (20) micropascals. The A-weighted filter de-emphasizes the very low and a very high frequency component of sound in a manner similar to the response of the human ear, and is a numerical method of rating human judgment of loudness.
- (d) "Decibel (dBA)" shall mean a unit for measuring the amplitude of a sound, equal to twenty (20) times the logarithm to the base ten (10) of the ratio of pressure of the sound measured to the reference pressure of twenty (20) micropascals.
- (e) "Equivalent sound or noise level (Leq)" shall mean the International Electrotechnical Commission (IEC) 60804 Standard for measurement, or the most recent revision thereof, for the sound level corresponding to a steady state noise level over a given sample period with the same amount of acoustic energy as the actual time varying noise level or the energy average noise level during the sample period. The measurement period for the purposes of this chapter is fifteen (15) minutes.
- (f) "Impulsive noise" shall mean a noise of short duration usually less than one (1) second and of high intensity, with an abrupt onset and rapid decay. Such objectionable noises may also be repetitive.
- (g) "Intrusive noise" shall mean that noise that intrudes over and above the ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, time of occurrence and tonal information content, as well as the prevailing ambient noise level.
- (h) "Maintenance" shall mean the upkeep, repair or preservation of existing property or structures.
- (i) "Noise" shall mean any unwanted sound or sound that is undesirable because it interferes with speech and hearing, or is intense enough to damage hearing or is otherwise annoying.
- (j) "Noise level (sound level)" shall mean the weighted sound pressure level obtained by use of a sound level meter having a standard frequency filter for attenuating part of the sound spectrum.

For purposes of this chapter, all noise levels (sound levels) shall be A-weighted sound pressure level.

(k) "Noise (sound) level meter" shall mean an instrument, including a microphone, an amplifier, an output meter and frequency weighting networks for the measurement and determination of noise and sound levels. For the purposes of this chapter, the sound level meter must meet the International Electrotechnical Commission (IEC) 60651 and 60804 Standards, or the most recent revisions thereof, for Type 1 sound level meters or an instrument and the associated recording and analyzing equipment that will provide equivalent data.

(§ 2, Ord. 2888, eff. March 6, 2008)

Sec. 5-29.03. Designated noise zones.

The properties hereinafter described shall be assigned to the following noise zones:

Noise Zone I:	All single-family residential properties;
Noise Zone II:	All multi-family residential properties and mobile home parks;
Noise Zone III:	All commercial property;
Noise Zone IV:	The residential portion of mixed use properties;
Noise Zone V:	All manufacturing or industrial properties and all other uses.

The actual use of the property, and not necessarily its zoning designation, shall be the determining factor in establishing whether a property is in Noise Zone I, II, III, IV or V, provided that the actual use is a legal use within the applicable zone.

(§ 2, Ord. 2888, eff. March 6, 2008)

Sec. 5-29.04. Exterior noise standards.

(a) The following exterior noise standards, unless otherwise specifically indicated, shall apply to all properties within a designated noise zone.

Allowable Exterior Noise Level (1)		Allowed Equivalent Noise Level, Leq. (2)		
Noise Zone	Type of Land Use	7 a.m. to 10 p.m.	10 p.m. to 7 a.m.	
I	Single-Family Residential	65 dBA	45 dBA	
II	Multi-Family Residential, Mobile Home Parks	65 dBA	50 dBA	
III	Commercial Property	65 dBA	60 dBA	
IV	Residential Portion of Mixed Use	70 dBA	70 dBA	
V	Manufacturing and Industrial, Other	70 dBA	70 dBA	

Uses

- (1) If the ambient noise level exceeds the resulting standard, the ambient noise level shall be the standard.
 - (2) Measurements for compliance are made on the affected property pursuant to § 5-29.15.
- (b) It is unlawful for any person at any location within the incorporated area of the City to create noise, or to allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person, which noise causes the noise level, when measured at any location on any other property, to exceed either of the following:
 - (1) The noise standard for the applicable zone for any fifteen-minute (15) period; and
- (2) A maximum instantaneous (single instance) noise level equal to the value of the noise standard plus twenty (20) dBA for any period of time (measured using A-weighted slow response).
- (c) In the event the ambient noise level exceeds the noise standard, the maximum allowable noise level under such category shall be increased to reflect the maximum ambient noise level.
- (d) The Noise Zone IV standard shall apply to that portion of residential property falling within one hundred (100) feet of a commercial property or use, if the noise originates from that commercial property or use.
- (e) If the measurement location is on a boundary between two (2) different noise zones, the lower noise level standard applicable to the noise zone shall apply.
- (§ 2, Ord. 2888, eff. March 6, 2008)

Sec. 5-29.05. Interior noise standards.

(a) The following interior noise standards, unless otherwise specifically indicated, shall apply to all properties within a designated noise zone.

Allowable Interior Noise Level (1)		Allowed Equivalent Noise Level, Leq. (2)		
Noise Zone Type of Land Use		7 a.m. to 10 p.m.	10 p.m. to 7 a.m.	
1	Single-Family Residential	45 dBA	40 dBA	
II	Multi-Family Residential, Mobile Home Parks	45 dBA	40 dBA	
IV	Residential Portion of Mixed Use	45 dBA	40 dBA	

- (1) If the ambient noise level exceeds the resulting standard, the ambient noise level shall be the standard.
 - (2) Measurements for compliance are made on the affected property pursuant to § 5-29.15.
- (b) It is unlawful for any person at any location within the incorporated area of the City to create noise, or to allow the creation of any noise on property owned, leased, occupied or

otherwise controlled by such person, which noise causes the noise level, when measured at any location on any other property, to exceed either of the following:

- (1) The noise standard for the applicable zone for any fifteen-minute (15) period;
- (2) A maximum instantaneous (single instance) noise level equal to the value of the noise standard plus twenty (20) dBA for any period of time (measured using A-weighted slow response).
- (c) In the event the ambient noise level exceeds the noise standard, the maximum allowable noise level under such category shall be increased to reflect the maximum ambient noise level.
- (d) The Noise Zone IV standard shall apply to that portion of residential property falling within one hundred (100) feet of a commercial property or use, if the noise originates from that commercial property or use.
- (e) If the measurement location is on a boundary between two (2) different noise zones, the lower noise level standard applicable to the noise zone shall apply.
- (§ 2, Ord. 2888, eff. March 6, 2008)

Sec. 5-29.06. Exemptions.

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

- (a) Any activity conducted on public property, or on private property with the consent of the owner, by any public entity or its officers, employees, representatives, agents, subcontractors, permittees, licensees or lessees that the public entity has authorized are exempt from the provisions of this chapter. This includes, without limitation, sporting and recreational activities that are sponsored, co-sponsored, permitted or allowed by the City or any school district within the City's jurisdictional boundaries. This also includes, without limitation, occasional outdoor gatherings, public dances, shows or sporting and entertainment events, provided such events are conducted pursuant to an approval, authorization, contract, lease, permit or sublease by the appropriate public entity, specifically the planning commission or City Council;
- (b) Occasional outdoor gatherings, public dances, show, sporting and entertainment events, provided said events are conducted pursuant to a permit or license issued by the appropriate jurisdiction relative to the staging of said events;
- (c) Any mechanical device, apparatus or equipment used, related to or connected with emergency machinery, vehicle, work or warning alarm or bell, provided the sounding of any bell or alarm on any building or motor vehicle shall terminate its operation within forty-five (45) minutes in any hour of its being activated;
- (d) Noise sources associated with construction, repair, remodeling, demolition or grading of any real property. Such activities shall instead be subject to the provisions of § 5-29.09;
- (e) Noise sources associated with construction, repair, remodeling, demolition or grading of public rights-of-way or during authorized seismic surveys;
- (f) All mechanical devices, apparatus or equipment associated with agriculture operations provided that:
 - (1) Operations do not take place between 8:00 p.m. and 7:00 a.m.;
- (2) Such operations and equipment are utilized for the protection or salvage of agricultural crops during periods of potential or actual frost damage or other adverse weather conditions; or

- (3) Such operations and equipment are associated with agricultural pest control through pesticide application, provided the application is made in accordance with permits issued by or regulations enforced by the California Department of Agriculture;
- (g) Noise sources associated with the maintenance of real property. Such activities shall instead be subject to the provisions of § 5-29.08;
 - (h) Any activity to the extent regulation thereof has been preempted by state or federal law;
- (i) Any noise sources associated with people and/or music associated with a party at a residential property. Such noise shall be subject to the provisions of OMC § 5-29.07;
- (j) Any noise source emanating from an ice cream truck within the City. Such noise shall be subject to the provisions of OMC § 4-18.04;
- (k) Any noise sources associated with barking dogs or other intermittent noises made by animals on any properly within the City. Such noise shall be subject to the provisions of OMC Chapter 1, Title 6;
- (I) Noise sources related to uses approved by a permit or development agreement adopted prior to the date of adoption of this chapter and that contains acoustic or noise standard conditions of approval. This exemption shall only be applicable during the effective period of the City-approved permit or development agreement.
- (§ 2, Ord. 2888, eff. March 6, 2008)

Sec. 5-29.07. Loud and disturbing noise.

- (a) It is unlawful for any person or property owner within the City to make, cause or allow to be made any loud, excessive, impulsive or intrusive noise, disturbance or commotion that disturbs the peace or quiet of any area or that causes discomfort or annoyance to any reasonable person of normal sensitivities in the area, after a Police or Code Enforcement Officer has first requested that the person or property owner cease and desist from making such noise. The types of loud, disturbing, excessive, impulsive or intrusive noise may include, but shall not be limited to, yelling, shouting, hooting, whistling, singing, playing a musical instrument, or emitting or transmitting any loud music or noise from any mechanical or electrical sound making or sound-amplifying device.
- (b) The factors, standards, and conditions that may be considered in determining whether a violation of the provisions of this section has been committed, included, but not limited to, the following:
 - (1) The level of the noise;
 - (2) The level and intensity of the background (ambient) noise, if any;
 - (3) The proximity of the noise to residential or commercial sleeping areas;
 - (4) The nature and zoning of the area within which the noise emanates;
 - (5) The density of inhabitation of the area within which the noise emanates;
 - (6) The time of day and night the noise occurs;
 - (7) The duration of the noise;
 - (8) Whether the noise is constant, recurrent or intermittent;
 - (9) Whether the noise is produced by a commercial or noncommercial activity; and

- (10) Whether the use is lawful under the provisions of Title 5 of this Code and whether the noise is one that could reasonably be expected from the activity or allowed use.
- (§ 2, Ord. 2888, eff. March 6, 2008)

Sec. 5-29.08. Real property maintenance noise regulations.

- (a) No person, while engaged in maintenance of real property, shall operate any tool, equipment or machine in a manner that produces loud noise that disturbs a person of normal sensitivity who works or resides in the vicinity, or a Police or Code Enforcement Officer, except between the hours of 8:00 a.m. and 6:00 p.m.
- (b) Trimming or pruning that requires the use of chainsaws or mulching machines shall only be allowed between the hours of 8:00 a.m. and 6:00 p.m. on a weekday and between the hours of 9:00 a.m. and 5:00 p.m. on Saturday or Sunday.
- (c) The use of electrical or gasoline powered blowers, such as commonly used by gardeners or other persons for cleaning lawns, yards, driveways, gutters and other property shall only be allowed between the hours of 8:00 a.m. and 6:00 p.m. on a weekday and between the hours of 9:00 a.m. and 5:00 p.m. on Saturday or Sunday.
- (d) No landowner, gardener, property maintenance service, contractor, subcontractor or employer shall permit or allow any person or persons working under his or her direction or control to operate any tool, equipment or machine in violation of the provisions of this section.
 - (e) Exceptions. The provisions of this section shall not apply to the following:
 - (1) Emergency property maintenance required by the building official;
- (2) The maintenance, repair or improvement of any public work or facility by public employees, by any person or persons acting pursuant to a public works contract, or by any person or persons performing such work or pursuant to the direction of, or on behalf of, any public agency; provided, however, this exception shall not apply to the City, or its employees, contractors or agents, unless:
- (i) The City Manager or department head determines that the maintenance, repair or improvement is immediately necessary to maintain public service,
- (ii) The maintenance, repair or improvement is of a nature that cannot feasibly be conducted during normal business hours, or
- (iii) The City Council has approved project specifications, contract provisions, or an environmental document that specifically authorizes maintenance during hours of the day that would otherwise be prohibited pursuant to this section; and
 - (3) Any maintenance that complies with the noise limits specified in § 5-29.04.
- (§ 2, Ord. 2888, eff. March 6, 2008)

Sec. 5-29.09. Construction activity noise regulations.

(a) No person, while engaged in construction, remodeling, digging, grading, demolition or any other related building activity, shall operate any tool, equipment or machine in a manner that produces loud noise that disturbs a person of normal sensitivity who works or resides in the vicinity, or a Police or Code Enforcement Officer, on any weekday except between the hours of 7:00 a.m. and 6:00 p.m. or on Saturday or Sunday between the hours of 9:00 a.m. and 6:00 p.m.

- (b) No landowner, construction company owner, contractor, subcontractor, or employer shall permit or allow any person or persons working under their direction and control to operate any tool, equipment or machine in violation of the provisions of this section.
 - (c) Exceptions.
- (1) The provisions of this section shall not apply to emergency construction work performed by a private party when authorized by the City Manager or his or her designee;
- (2) The maintenance, repair or improvement of any public work or facility by public employees, by any person or persons acting pursuant to a public works contract, or by any person or persons performing such work or pursuant to the direction of, or on behalf of, any public agency; provided, however, this exception shall not apply to the City, or its employees, contractors or agents, unless:
- (i) The City Manager or a department head determines that the maintenance, repair or improvement is immediately necessary to maintain public services,
- (ii) The maintenance, repair or improvement is of a nature that cannot feasibly be conducted during normal business hours, or
- (iii) The City Council has approved project specifications, contract provisions, or an environmental document that specifically authorizes construction during hours of the day that would otherwise be prohibited pursuant to this section; and
 - (3) Any construction that complies with the noise limits specified in §§ 5-29.04 or 5-29.05.

(§ 2, Ord. 2888, eff. March 6, 2008)

Sec. 5-29.10. Other public agency exceptions.

The provisions of this chapter shall not be construed to prohibit any work at different hours by or under the direction of any other public agency or public or private utility companies in cases of necessity or emergency.

(§ 2, Ord. 2888, eff. March 6, 2008)

Sec. 5-29.11. Schools, day care centers, churches, libraries, museums, health care institutions; Special provisions.

It is unlawful for any person to create any noise that causes the outdoor noise level at any school, day care center, hospital or similar health care institution, church, library or museum while the same is in use, to exceed the noise standards specified in § 5-29.04 prescribed for the assigned Noise Zone I.

(§ 2, Ord. 2888, eff. March 6, 2008)

Sec. 5-29.12. Sound amplifying equipment.

Loudspeakers, sound amplifiers, public address systems or similar devices used to amplify sounds shall be subject to the provisions of § 5-29.13. Such sound amplifying equipment shall not be construed to include electronic devices, including but not limited to, radios, tape players, tape recorders, compact disc players, MP3 players, electric keyboards, music synthesizers, record players or televisions, which are designed and operated for personal use, or used entirely

within a building and are not designed or used to convey the human voice, music or any other sound to an audience outside such building, or which are used in vehicles and heard only by occupants of the vehicle in which installed.

(§ 2, Ord. 2888, eff. March 6, 2008)

Sec. 5-29.13. Amplified sound.

- (a) The City Council enacts the following legislation for the sole purpose of securing and promoting the public health, comfort, safety and welfare for its citizenry. While recognizing that the use of sound amplifying equipment may be entitled to certain protection by the constitutional rights of freedom of speech and assembly, the City Council finds that in order to protect the public safety and the correlative rights of the citizens of this community to privacy and freedom from public nuisance of loud and unnecessary noise, reasonable regulation of the time, place and manner of the use of amplifying equipment is necessary. In no event shall approval or authorization required herein be withheld by reason of the constitutionally protected content of any material proposed to be broadcast through amplifying equipment.
- (b) It is unlawful for any person, other than personnel of law enforcement or governmental agencies, to install, use or operate a loudspeaker or sound amplifying device in a fixed or movable position or mounted upon any vehicle within the City for the purpose of giving instructions, directions, talks, addresses or lectures to any persons or assemblages of persons in or upon any street, alley, sidewalk, park, place or public property without a permit to do so from the Police Chief or his or her designee. Notwithstanding any other provision of this chapter, the provisions of this section shall also apply to the use of sound amplifying equipment upon public or private property when used in connection with outdoor or indoor public or private events, whether or not admission is charged or food or beverages are sold, when such activity is to be attended by more than one hundred (100) persons and the noise emanating from the event will be audible at the property plane, or in the case of a street dance or concert on the nearest residential property. Those activities listed in § 5-29.06(a) are exempt from the requirements of this section.
- (c) The Police Chief or his or her designee is authorized to approve and issue permits under this section.
- (d) An application for a permit required by this section shall be filed with the Police Chief at least sixteen (16) days and no more than one hundred twenty (120) days prior to the date on which the sound amplifying equipment is intended to be used. Applications for events covered by the First Amendment of the United States Constitution are exempt from the time requirements of this section if it is shown that circumstances require a shorter filing period and the event will not constitute an unsafe condition. The application shall contain the following information:
- (1) The name, address and telephone number of both the owner and the user of the sound amplifying equipment;
 - (2) The license number, if a sound truck is to be used;
 - (3) A general description of the sound amplifying equipment which is to be used;
- (4) Whether sound amplifying equipment will be used for commercial or noncommercial purpose;
- (5) The dates and times upon and within which, and the streets or property over or upon which, the equipment is proposed to be operated;
- (6) The name or names of one (1) or more persons who will be present during the conduct of any activities for which registration is sought and who will have authority to reduce the volume of

any sound amplifying equipment during the course of the activities if required pursuant to this chapter and, otherwise, to insure compliance with the provisions of this chapter;

- (7) A statement by the applicant that he or she is willing and able to comply with the provisions of this chapter and the conditions of the permit; and
- (8) A sketch of the area or facilities within which the activities are to be conducted, with approximate dimensions and illustration of the location and orientation of all sound-amplifying equipment.
- (e) The Police Chief shall deny the permit application or revoke any permit if the chief finds any of the following:
 - (1) The application contains materially false or intentionally misleading information;
- (2) The use of sound amplifying equipment at an event or activity proposed will be located in or upon a premises, building or structure that is hazardous to the health or safety of the employees or patrons of the premises, business, activity, or event, or the general public, under the standards established by the Uniform Building or Fire Codes, or other applicable codes, as set forth in OMC Titles 4 and 8;
- (3) The use of sound amplifying equipment at an event or activity proposed in or upon a premises, building or structure that lacks adequate on-site parking for participants attending the proposed event or activity under the applicable standards set forth in OMC Title 9;
- (4) The conditions of any motor vehicle movement are such that, in his or her opinion, the use of the equipment would constitute an unreasonable interference with traffic safety;
- (5) The conditions of pedestrian movement are such that the use of the equipment would constitute a detriment to traffic safety;
- (6) The application submitted by the applicant reveals that the applicant would violate the provisions of this section or any other provision of federal, state and/or local law;
- (7) The applicant is unwilling or unable to comply with the provisions of this chapter or any conditions imposed upon any permit issued;
- (8) There had already been a permitted event at the intended location, or within a two hundred (200) yard radius of the intended location and the prior permitted event was located on residentially zoned property or on a street, alley, public parking lot or neighborhood park within three (3) months prior to the intended event. Community parks are exempt from this subsection (8); or
- (9) The applicant or location has had previous violations within the past calendar year, and in the judgment of the Police Chief, issuance would be contrary to the intent of this section.
- (f) In determining whether the use of the equipment would constitute an unreasonable interference with or detriment to traffic safety, the Police Chief shall consider, but shall not necessarily be limited to:
- (1) The volumes, patterns and speed of vehicular and pedestrian traffic in the proposed area of use:
- (2) The relationship of the proposed use of equipment and potential impacts upon traffic patterns;
- (3) Availability of sufficient room for the operation of the equipment without significantly interfering with the traffic patterns;

- (4) Proximity to schools, playgrounds and similar facilities where use of such equipment might attract children into traffic patterns; or
- (5) Proximity to busy intersections or other potentially hazardous conditions where use of such equipment might constitute a hazard by reason of its tendency to distract drivers of vehicles or pedestrians.
 - (g) Issuance or denial.
- (1) If the application is approved, the Police Chief shall return an approved copy of the application to the applicant and shall issue a permit. The permit shall constitute permission for the use of the sound amplifying equipment as requested.
- (2) Any application filed shall be either approved or disapproved within five (5) days of the filing thereof.
- (3) If the application is disapproved, the Police Chief shall return a disapproved copy forthwith to the applicant with a written statement on the reason for disapproval.
- (i) Any person aggrieved by a decision of the Police Chief or his or her designee may file an appeal to the City Manager. A complete and proper appeal shall be filed with the City Clerk within ten (10) calendar days of the action that is the subject of the appeal. If the applicant fails to file an appeal within the ten (10) day filing period provided herein, denial shall take effect immediately upon expiration of such filing period. All appeals shall be in writing and shall contain the following information: (a) name(s) of the person filing the appeal, (b) a brief statement in ordinary and concise language of the relief sought, and (c) the signatures of all parties named as appellants and their mailing addresses. After receiving the appeal, the City Clerk shall immediately forward the matter to the City Manager for handling.
- (ii) The City Manager shall, upon receipt of the appeal, set the matter for hearing before the City Manager or a hearing officer. Any hearing officer shall be a licensed attorney or recognized mediator designated by the City Manager. The hearing shall be set for not more than ten (10) calendar days after the receipt of the appeal unless a longer time is requested or consented to by the appellant. Notice of such hearing shall be given in writing and mailed at least five (5) calendar days prior to the date of the hearing, by U.S. mail, with a proof of service attached, addressed to the address listed on the permit application, or the written appeal if different from the permit application. The notice shall state the grounds of the complaint or reason for the denial and shall state the time and place where such hearing will be held.
- (iii) The City Manager or hearing officer shall, within ten (10) calendar days following the conclusion of the hearing, make a written finding and decision, which shall be delivered to the City and the appellant by first class mail. Notwithstanding any provision in this Code, the decision of the City Manager or hearing officer shall be the final administrative decision of the City. Any party dissatisfied with the decision of the City Manager or hearing officer may seek review of such decision under the provisions of Code Civil Procedure, §§ 1094.5 and 1094.8, as amended from time to time.
- (h) In addition to any other provisions of this Code, the use of sound-amplifying equipment and sound trucks in the City shall be subject to the following regulations:
 - The only sounds permitted are music and human speech;
- (2) Sound shall not be emitted within one hundred (100) yards of hospitals, churches, schools and City Hall;
- (3) The volume of sound shall be controlled so that it will not be audible for a distance in excess of one hundred (100) feet from the sound amplifying equipment or sound truck, and so

that the volume is not unreasonably loud, raucous, jarring, disturbing or a nuisance to persons within the range of allowed audibility; or

- (4) The sound amplifying equipment or sound truck shall not be used between the hours of 8:00 p.m. and 8:00 a.m.
- (§ 2, Ord. 2888, eff. March 6, 2008)

Sec. 5-29.14. Motor vehicles.

The use of any motor vehicle in such a condition as to create excessive, impulsive or intrusive noises is prohibited. The discharge into the open air of the exhaust of any internal combustion engine, stationary or mounted on wheels, motorboat or motor vehicle, including motor cycle, whether or not discharged through a muffler or other similar device, which discharge creates excessive, unusual, impulsive or intrusive noise is prohibited. Motor vehicles shall comply with the noise regulations of the California Vehicle Code.

(§ 2, Ord. 2888, eff. March 6, 2008)

Sec. 5-29.15. Noise level measurement.

- (a) The location selected for measuring exterior noise levels in a residential area shall be at any part of a private yard, patio, deck or balcony normally used for human activity and identified by the owner or, if occupied by someone other than the owner, the occupant of the affected property as suspected of exceeding the noise level standard. This location may be the closest point in the private yard or patio, or on the deck or balcony, to the noise source, but should not be located in nonhuman activity areas such as trash container storage areas, planter beds, above or contacting a property line fence, or other areas not normally used as part of the yard, patio, deck or balcony. The location selected for measuring exterior noise levels in a nonresidential area shall be at the closest point to the noise source. The measurement microphone height shall be five (5) feet above finish elevation or, in the case of a deck or balcony, the measurement microphone height shall be five (5) feet above the finished floor level.
- (b) The location selected for measuring interior noise levels shall be made within the affected residential unit. The measurements shall be made at a point at least four (4) feet from the wall, ceiling or floor, or within the frame of a window opening, nearest the noise source. The measurements shall be made with windows in an open position.
- (c) Any decibel measurement made pursuant to the provisions of this chapter shall be measured in decibels (dBAs) as measured with a sound level meter using the A-weighted sound pressure level.
- (§ 2, Ord. 2888, eff. March 6, 2008)

Sec. 5-29.16. Prima facie violation.

Any noise exceeding the noise level standard as specified in §§ 5-29.04 and 5-29.05, shall be deemed to be prima facie evidence of a violation of the provisions of this chapter.

(§ 2, Ord. 2888, eff. March 6, 2008)

- (a) Any person who negligently or knowingly violates any provision of this chapter shall be guilty of an infraction and upon conviction shall be punishable by a fine specified in OMC § 1-2.01. Each day a violation occurs shall constitute a separate offense and shall be punishable as such
- (b) Any person who negligently or knowingly violates any provision of this chapter may also be subject to fine(s) specified in the administrative citation schedule of fines set forth in OMC § 1-5.04. The manner of issuing administrative citations shall comply with all the procedures specified in OMC Chapter 5, Title 1.
- (c) As an additional remedy, the operation or maintenance of any device, instrument, vehicle or machinery in violation of any provisions of this chapter, which operation or maintenance causes or creates sound levels exceeding the allowable standards as specified in this chapter, shall be deemed and is declared to be a public nuisance and may be subject to abatement by a restraining order or injunction issued by a court of competent jurisdiction.
- (d) Any violation of this chapter is declared to be a public nuisance and may be abated in accordance with law. The expense of enforcing this chapter is declared to be public nuisance and may be by resolution of the City Council declared to be a lien and special assessment against the property on which such nuisance is maintained, and any such charge shall also be a personal obligation of the property owner.
- (§ 2, Ord. 2888, eff. March 6, 2008)

Sec. 5-29.18. Enforcement and administration.

- (a) It shall be the responsibility of Police or Code Enforcement Officers to enforce the provisions of this chapter and to perform all other functions required by this chapter. Such duties shall include, but not be limited to investigating potential violations, issuing warning notices and citations, and providing evidence to the City prosecutor for legal action.
- (b) For violations of § 5-29.07, Police or Code Enforcement Officers shall obtain a declaration under penalty of perjury from two (2) declarants living in separate households within a sixty (60) day period stating in detail all of the following:
- (1) That the declarant is a resident of a residential neighborhood located within two hundred (200) yards of the noise source; and
- (2) Within the past month declarant has heard noise for substantially long periods to the extreme annoyance of the declarant.
- (3) Declarations from two (2) declarants are required to prove a violation of § 5-29.07, but are not required to prove that a person has violated any other provision of this chapter.
- (§ 2, Ord. 2888, eff. March 6, 2008)

Sec. 5-29.19. City Manager waiver.

The City Manager is authorized to grant a temporary waiver to the provisions of this chapter for a period of time necessary to correct the violations of this chapter, if such temporary waiver would be in the public interest and there is no feasible and prudent alternative to the activity, or the method of conducting the activity, for which the temporary waiver is sought. This time period may include a commitment to a program that includes placing necessary orders and entering into necessary contracts within thirty (30) days for repair or installation.

(§ 2, Ord. 2888, eff. March 6, 2008)

Sec. 5-29.20. Noise abatement program.

- (a) In circumstances where adopted community-wide noise standards and policies prove impractical in controlling noise generated from a specific source, the City Council may establish a noise abatement program that recognizes the characteristics of the noise source and affected property and that incorporates specialized mitigation measures.
- (b) Noise abatement programs shall set forth in detail the approved terms, conditions and requirements for achieving maximum compliance with noise standards and policies. Said terms, conditions and requirements may include, but shall not be limited to, limitations, restrictions, or prohibitions on operating hours, location of operations, and the types of equipment.
- (§ 2, Ord. 2888, eff. March 6, 2008)

APPENDIX 5.1:

STUDY AREA PHOTOS



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33, 58' 39.830000", 117, 35' 34.890000"



33, 58' 39.870000", 117, 35' 34.950000"



L1_N 33, 58' 39.660000", 117, 35' 35.000000"



33, 58' 39.850000", 117, 35' 34.970000"



L1_W 33, 58' 39.800000", 117, 35' 34.950000"



33, 58' 32.040000", 117, 35' 34.180000"



33, 58' 32.140000", 117, 35' 34.150000"



L2_N 33, 58' 31.990000", 117, 35' 33.930000"



L2_S 33, 58' 32.140000", 117, 35' 34.070000"



33, 58' 32.030000", 117, 35' 34.120000"



33, 58' 16.510000", 117, 35' 36.480000"



L3_N 33, 58' 16.600000", 117, 35' 36.260000"



L3_S 33, 58' 16.580000", 117, 35' 36.210000"



L3_W 33, 58' 16.630000", 117, 35' 36.320000"



33, 58' 19.460000", 117, 36' 3.920000"



L4_4 33, 58' 19.320000", 117, 36' 3.980000"



L4_E 33, 58' 19.560000", 117, 36' 3.920000"



L4_N 33, 58' 19.520000", 117, 36' 3.980000"



L4_S 33, 58' 19.520000", 117, 36' 3.870000"



L5



L5_E 33, 58' 30.600000", 117, 36' 4.880000"



33, 58' 30.600000", 117, 36' 4.910000"



L5_S 33, 58' 30.610000", 117, 36' 4.880000"



L5_W 33, 58' 30.680000", 117, 36' 4.940000"



33, 58' 35.870000", 117, 35' 45.380000"



L6_E 33, 58' 35.890000", 117, 35' 45.470000"



33, 58' 35.870000", 117, 35' 45.380000"



L6_S 33, 58' 35.950000", 117, 35' 45.520000"



L6_W 33, 58' 36.020000", 117, 35' 45.250000"

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APPENDIX 5.2:

NOISE LEVEL MEASUREMENT WORKSHEETS



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24-Hour Noise Level Measurement Summary L1 - Located Northeast of project site on Remington Ave and

Location:
Archibald

Location:

Archibald

Hourly L ea dBA Readings (unadjusted) **Hourly L** (**4BA**) **Hour Beginning**

Timeframe	Hour	L eq	L max	L min	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L _{eq}	Adj.	Adj. L _{eq}
	0	58.7	73.2	41.5	68.0	67.0	66.0	65.0	56.0	47.0	43.0	43.0	42.0	58.7	10.0	68.7
	1	59.8	77.9	42.3	70.0	69.0	66.0	65.0	55.0	47.0	43.0	43.0	42.0	59.8	10.0	69.8
	2	62.1	80.4	42.6	72.0	71.0	68.0	67.0	59.0	50.0	45.0	44.0	43.0	62.1	10.0	72.1
Night	3	64.9	78.7	43.9	74.0	72.0	70.0	69.0	65.0	59.0	49.0	48.0	45.0	64.9	10.0	74.9
	4	67.5	80.4	46.1	75.0	74.0	72.0	71.0	69.0	65.0	52.0	50.0	48.0	67.5	10.0	77.5
	5	69.2	82.0	49.2	76.0	74.0	73.0	72.0	70.0	68.0	58.0	55.0	51.0	69.2	10.0	79.2
	6	69.5	81.3	51.2	76.0	74.0	73.0	72.0	70.0	68.0	60.0	57.0	53.0	69.5	10.0	79.5
	7	68.9	84.5	46.1	76.0	74.0	72.0	71.0	69.0	67.0	58.0	54.0	50.0	68.9	0.0	68.9
	8	68.0	80.5	45.3	76.0	74.0	72.0	71.0	69.0	66.0	53.0	50.0	47.0	68.0	0.0	68.0
	9	66.9	83.5	45.3	74.0	73.0	71.0	70.0	68.0	65.0	53.0	50.0	47.0	66.9	0.0	66.9
	10	66.8	80.0	44.7	75.0	73.0	71.0	70.0	68.0	65.0	52.0	50.0	46.0	66.8	0.0	66.8
	11	67.2	88.6	42.1	76.0	74.0	71.0	70.0	67.0	64.0	51.0	48.0	45.0	67.2	0.0	67.2
Day	12	66.7	77.8	44.9	73.0	72.0	71.0	70.0	68.0	65.0	54.0	51.0	48.0	66.7	0.0	66.7
Day	13	67.8	80.9	46.4	75.0	73.0	72.0	71.0	69.0	66.0	56.0	53.0	49.0	67.8	0.0	67.8
	14	68.4	85.5	47.4	75.0	74.0	72.0	71.0	69.0	67.0	58.0	54.0	50.0	68.4	0.0	68.4
	15	68.2	83.0	46.5	75.0	74.0	72.0	71.0	69.0	67.0	57.0	54.0	50.0	68.2	0.0	68.2
	16	67.9	85.4	45.0	74.0	73.0	71.0	71.0	69.0	67.0	58.0	55.0	51.0	67.9	0.0	67.9
	17	68.9	92.2	48.3	74.0	73.0	71.0	71.0	69.0	67.0	58.0	54.0	50.0	68.9	0.0	68.9
	18	67.2	84.6	47.1	74.0	72.0	71.0	70.0	68.0	66.0	53.0	51.0	48.0	67.2	0.0	67.2
	19	66.2	76.4	46.0	72.0	71.0	70.0	70.0	68.0	65.0	52.0	50.0	47.0	66.2	5.0	71.2
Evening	20	65.5	78.3	48.7	72.0	71.0	70.0	69.0	67.0	63.0	53.0	52.0	49.0	65.5	5.0	70.5
	21	64.9	79.1	43.8	72.0	71.0	70.0	69.0	66.0	61.0	50.0	48.0	46.0	64.9	5.0	69.9
Night	22	63.2	78.6	43.2	72.0	70.0	69.0	68.0	64.0	57.0	47.0	45.0	44.0	63.2	10.0	73.2
	23	61.0	74.7	42.0	70.0	69.0	67.0	66.0	61.0	53.0	45.0	44.0	43.0	61.0	10.0	71.0
Timeframe	Hour	L _{eq}	L max	L min	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%		L eq (dBA)	
Day	Min	66.7	77.8	42.1	73.0	72.0	71.0	70.0	67.0	64.0	51.0	48.0	45.0	24-Hour	Daytime	Nighttime
,	Max	68.9	92.2	48.3	76.0	74.0	72.0	71.0	69.0	67.0	58.0	55.0	51.0			
Energy /	Average	67.8		rage:	74.8	73.3	71.4	70.6	68.5	66.0	55.1	52.0	48.4	66.8	67.4	65.6
Evening	Min	64.9	76.4	43.8	72.0	71.0	70.0	69.0	66.0	61.0	50.0	48.0	46.0			
ŭ	Max	66.2	79.1	48.7	72.0	71.0	70.0	70.0	68.0	65.0	53.0	52.0	49.0	24-	Hour CNEL (d	dBA)
Energy /	Average	65.6		rage:	72.0	71.0	70.0	69.3	67.0	63.0	51.7	50.0	47.3			
Night	Min	58.7	73.2	41.5	68.0	67.0	66.0	65.0	55.0	47.0	43.0	43.0	42.0		72.6	
, and the second	Max	69.5	82.0	51.2	76.0	74.0	73.0	72.0	70.0	68.0	60.0	57.0	53.0		, Z.U	
Energy <i>i</i>	Average	65.6	Ave	rage:	72.6	71.1	69.3	68.3	63.2	57.1	49.1	47.7	45.7			



JN: 11965

Analyst: P. Mara

Date: Tuesday, July 30, 2019

Project: The Homestead

24-Hour Noise Level Measurement Summary L2 - Located East of the project site on Limonite Ave Date: Tuesday, July 30, 2019 Location: Meter: Piccolo I JN: 11965 Project: The Homestead Analyst: P. Mara Hourly L ea dBA Readings (unadjusted) 80.0 75.0 70.0 65.0 60.0 (dBA) 9 55.0 50.0 45.0 40.0 63 40.0 0 1 2 3 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 **Hour Beginning** Timeframe Hour L1% L2% L5% L8% L25% L50% L90% L95% L99% Adj. Adj. L eq L_{eq} L_{max} L min L eq 55.7 75.6 43.0 68.0 66.0 60.0 59.0 52.0 47.0 44.0 44.0 43.0 55.7 10.0 65.7 0 1 57.1 76.6 43.2 70.0 66.0 62.0 60.0 52.0 47.0 44.0 44.0 43.0 57.1 10.0 67.1 2 77.7 43.4 58.4 71.0 67.0 62.0 61.0 55.0 50.0 45.0 45.0 44.0 58.4 10.0 68.4 Night 3 61.8 82.3 45.7 72.0 70.0 67.0 65.0 61.0 56.0 50.0 48.0 47.0 61.8 10.0 71.8 4 64.4 79.5 48.6 75.0 73.0 69.0 68.0 63.0 60.0 54.0 52.0 50.0 64.4 10.0 74.4 5 79.8 47.6 73.0 72.0 52.0 65.0 70.0 68.0 65.0 62.0 56.0 55.0 65.0 10.0 75.0 6 65.6 79.5 51.7 75.0 73.0 70.0 69.0 65.0 62.0 57.0 56.0 53.0 65.6 10.0 75.6 65.2 79.4 50.2 75.0 73.0 70.0 68.0 64.0 62.0 57.0 55.0 53.0 65.2 0.0 65.2 8 64.4 83.1 47.9 74.0 72.0 69.0 67.0 63.0 61.0 55.0 53.0 51.0 64.4 0.0 64.4 9 64.0 81.2 46.8 73.0 71.0 69.0 67.0 63.0 60.0 54.0 53.0 50.0 64.0 0.0 64.0 10 85.3 48.6 74.0 71.0 68.0 50.0 64.3 64.3 67.0 63.0 60.0 55.0 53.0 0.0 64.3 11 66.1 89.2 46.3 75.0 72.0 69.0 68.0 63.0 60.0 54.0 52.0 49.0 66.1 0.0 66.1 12 79.7 47.5 72.0 71.0 68.0 67.0 50.0 63.5 0.0 63.5 63.0 60.0 54.0 53.0 63.5 Day 13 65.0 85.3 49.6 74.0 72.0 70.0 68.0 64.0 61.0 55.0 54.0 51.0 65.0 0.0 65.0 14 50.5 76.0 73.0 70.0 68.0 64.0 53.0 66.2 0.0 66.2 86.5 62.0 56.0 55.0 66.2 15 65.6 85.4 51.8 75.0 73.0 70.0 69.0 65.0 62.0 57.0 55.0 53.0 65.6 0.0 65.6 16 64.5 80.4 52.6 73.0 71.0 68.0 67.0 64.0 62.0 57.0 56.0 54.0 64.5 0.0 64.5 17 68.0 65.5 65.5 86.8 51.3 76.0 72.0 67.0 63.0 61.0 57.0 55.0 54.0 0.0 65.5 18 64.2 85.5 49.1 75.0 72.0 68.0 66.0 62.0 60.0 54.0 53.0 51.0 64.2 0.0 64.2 19 62.9 83.6 48.8 73.0 70.0 67.0 65.0 61.0 59.0 53.0 52.0 50.0 62.9 5.0 67.9 Evening 20 61.5 79.7 45.7 69.0 66.0 57.0 52.0 50.0 48.0 5.0 71.0 65.0 61.0 61.5 66.5 21 59.9 81.9 44.5 69.0 67.0 64.0 63.0 59.0 56.0 50.0 49.0 46.0 59.9 5.0 64.9 22 58.3 77.7 43.7 68.0 67.0 63.0 61.0 57.0 53.0 47.0 46.0 45.0 58.3 10.0 68.3 Night 23 58.0 83.3 42.6 68.0 67.0 64.0 62.0 56.0 51.0 44.0 44.0 43.0 10.0 68.0 L_{eq} (dBA) L1% L2% L5% L8% L25% L50% L90% L95% L99% Timeframe Hour L eq L max L min 71.0 54.0 Min 79.4 46.3 72.0 68.0 66.0 62.0 60.0 52.0 49.0 24-Hour Daytime Nighttime Day 76.0 73.0 70.0 69.0 Max 66.2 89.2 52.6 65.0 62.0 57.0 56.0 54.0 65.0 74.3 71.9 68.9 60.9 55.4 **Energy Average** Average: 67.4 63.4 53.9 51.6 63.7 64.5 61.9 Min 59.9 79.7 44.5 69.0 67.0 64.0 63.0 59.0 56.0 50.0 49.0 46.0 Evening 24-Hour CNEL (dBA) Max 62.9 83.6 48.8 73.0 70.0 67.0 65.0 61.0 59.0 53.0 52.0 50.0 71.0 65.7 64.3 57.3 51.7 **Energy Average** 61.6 Average: 68.7 60.3 50.3 48.0 55.7 75.6 42.6 68.0 66.0 60.0 59.0 52.0 47.0 44.0 44.0 43.0 Min 69.0 Night 73.0 70.0 69.0 62.0 57.0 56.0 53.0 Max 65.6 83.3 51.7 75.0 65.0



63.7

58.4

54.2

49.0

48.2

46.7

Average:

71.1

69.0

65.2

61.9

Energy Average

24-Hour Noise Level Measurement Summary L3 - Located South of the project site near electric area. Date: Tuesday, July 30, 2019 Location: Meter: Piccolo I JN: 11965 Project: The Homestead Analyst: P. Mara Hourly L ea dBA Readings (unadjusted) 80.0 75.0 70.0 (dBA) 65.0 60.0 6 55.0 50.0 45.0 40.0 ∞ 4 62. ශු 40.0 0 2 3 5 6 7 8 9 10 11 12 13 14 15 17 18 19 20 21 22 23 1 16 **Hour Beginning** Timeframe Hour L1% L2% L5% L8% L25% L50% L90% L95% L99% Adj. Adj. L eq L eq L_{max} L min L eq 60.5 84.0 51.2 69.0 66.0 64.0 63.0 58.0 56.0 54.0 53.0 51.0 60.5 10.0 70.5 0 1 58.3 75.8 49.8 69.0 66.0 63.0 61.0 56.0 55.0 52.0 52.0 51.0 58.3 10.0 68.3 2 58.8 79.0 50.4 69.0 67.0 63.0 62.0 56.0 53.0 51.0 51.0 50.0 58.8 10.0 68.8 Night 3 62.3 85.8 51.5 72.0 70.0 67.0 66.0 62.0 57.0 52.0 52.0 51.0 62.3 10.0 72.3 4 65.0 79.4 51.1 73.0 72.0 69.0 68.0 65.0 62.0 54.0 53.0 52.0 65.0 10.0 75.0 5 78.9 50.4 72.0 65.3 73.0 70.0 69.0 66.0 63.0 54.0 52.0 51.0 65.3 10.0 75.3 6 64.9 81.2 48.6 73.0 71.0 69.0 68.0 65.0 62.0 52.0 50.0 49.0 64.9 10.0 74.9 72.0 71.0 64.1 78.0 48.2 68.0 67.0 64.0 62.0 52.0 51.0 49.0 64.1 0.0 64.1 8 64.4 89.8 48.6 72.0 70.0 68.0 67.0 64.0 60.0 51.0 50.0 49.0 64.4 0.0 64.4 9 63.3 79.4 49.2 72.0 70.0 68.0 67.0 63.0 60.0 52.0 51.0 49.0 63.3 0.0 63.3 10 63.5 49.2 72.0 70.0 68.0 50.0 85.0 67.0 63.0 60.0 52.0 51.0 63.5 0.0 63.5 11 62.1 75.5 49.2 70.0 69.0 67.0 66.0 62.0 59.0 52.0 51.0 49.0 62.1 0.0 62.1 12 79.8 50.7 66.0 65.0 51.0 62.3 0.0 62.3 71.0 69.0 62.0 59.0 53.0 52.0 62.3 Day 13 77.0 51.1 70.0 68.0 66.0 65.0 62.0 59.0 53.0 52.0 51.0 61.8 0.0 61.8 61.8 14 74.0 68.0 66.0 65.0 60.0 54.0 52.0 0.0 61.8 51.4 69.0 62.0 53.0 61.8 61.8 15 61.9 76.7 51.2 70.0 68.0 66.0 65.0 62.0 60.0 53.0 53.0 51.0 61.9 0.0 61.9 16 62.9 86.1 51.5 69.0 68.0 66.0 65.0 63.0 61.0 53.0 52.0 52.0 62.9 0.0 62.9 17 67.0 63.4 81.1 52.0 70.0 69.0 66.0 63.0 61.0 54.0 53.0 52.0 63.4 0.0 63.4 18 63.2 86.7 51.7 71.0 68.0 66.0 65.0 63.0 59.0 53.0 53.0 52.0 63.2 0.0 63.2 19 62.7 80.2 52.0 71.0 68.0 66.0 65.0 63.0 60.0 55.0 54.0 53.0 62.7 5.0 67.7 Evening 20 62.5 76.8 54.0 69.0 68.0 66.0 55.0 55.0 66.0 63.0 60.0 56.0 62.5 5.0 67.5 21 61.1 75.6 51.4 68.0 67.0 65.0 65.0 62.0 58.0 54.0 53.0 52.0 61.1 5.0 66.1 22 60.0 73.6 49.3 68.0 66.0 65.0 64.0 60.0 56.0 53.0 53.0 51.0 60.0 10.0 70.0 Night 23 59.6 72.9 50.2 68.0 66.0 64.0 63.0 59.0 57.0 53.0 53.0 51.0 59.6 10.0 69.6 L1% L2% L5% L8% L25% L50% L90% L95% L99% L eq (dBA) Timeframe Hour L eq L max L min 59.0 Min 61.8 74.0 48.2 69.0 68.0 66.0 65.0 62.0 51.0 50.0 49.0 24-Hour Daytime Nighttime Day 72.0 71.0 68.0 67.0 52.0 Max 64.4 89.8 52.0 64.0 62.0 54.0 53.0 63.0 70.7 69.0 52.7 50.6 **Energy Average** Average: 66.8 65.8 62.8 60.0 51.8 62.7 62.8 62.4 Min 61.1 75.6 51.4 68.0 67.0 65.0 65.0 62.0 58.0 54.0 53.0 52.0 Evening 24-Hour CNEL (dBA) Max 62.7 80.2 54.0 71.0 68.0 66.0 66.0 63.0 60.0 56.0 55.0 55.0 62.2 65.7 65.3 59.3 55.0 54.0 **Energy Average** Average: 69.3 67.7 62.7 53.3 58.3 72.9 48.6 68.0 66.0 63.0 61.0 56.0 53.0 51.0 50.0 49.0 Min 69.2



69.0

64.9

66.0

60.8

63.0

57.9

54.0

52.8

53.0

52.1

52.0

50.8

72.0

68.4

70.0

66.0

85.8

Average:

51.5

73.0

70.4

Night

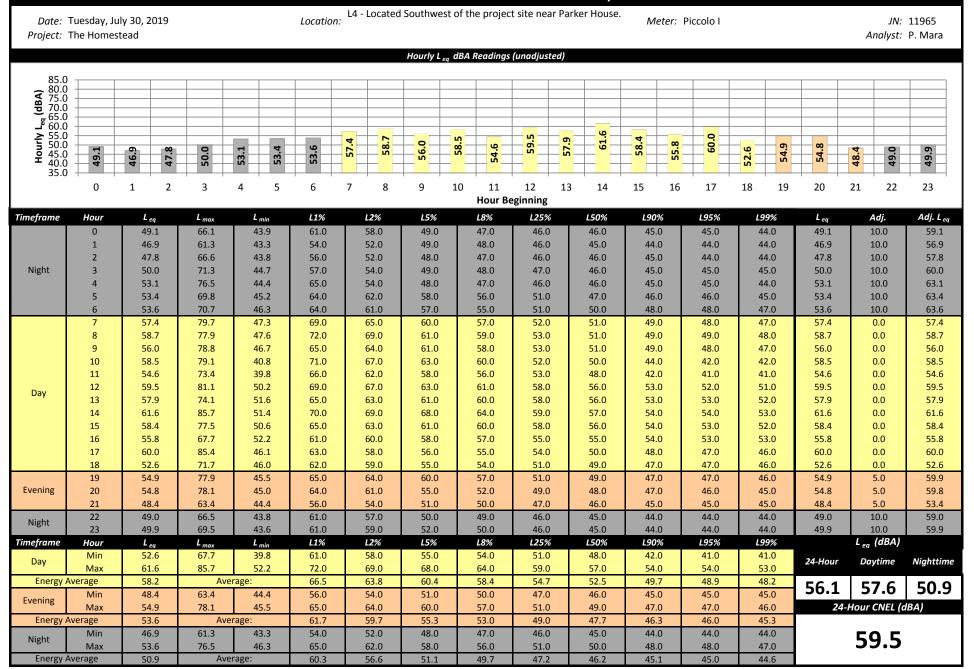
Max

Energy Average

65.3

62.4

24-Hour Noise Level Measurement Summary





24-Hour Noise Level Measurement Summary L5 - Located directly west of the project site. Date: Tuesday, July 30, 2019 Location: Meter: Piccolo I JN: 11965 Project: The Homestead Analyst: P. Mara Hourly L ea dBA Readings (unadjusted) 80.0 75.0 70.0 65.0 660.0 63.8 œ 67 55.0 50.0 45.0 40.0 63. 4 62. 0 62 8 58 ιū 0 1 2 3 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 **Hour Beginning** Timeframe Hour L1% L2% L5% L8% L25% L50% L90% L95% L99% Adj. Adj. L eq L_{eq} L_{max} L min L eq 51.8 70.0 45.7 64.0 60.0 51.0 50.0 48.0 47.0 46.0 46.0 46.0 51.8 10.0 61.8 0 1 49.7 66.4 45.6 55.0 52.0 51.0 50.0 49.0 48.0 47.0 46.0 46.0 49.7 10.0 59.7 2 51.0 70.8 47.0 61.0 54.0 51.0 50.0 49.0 48.0 48.0 47.0 47.0 51.0 10.0 61.0 Night 3 57.4 82.3 47.4 68.0 56.0 51.0 51.0 49.0 49.0 48.0 48.0 47.0 57.4 10.0 67.4 4 56.0 82.6 45.8 67.0 60.0 54.0 53.0 49.0 48.0 47.0 46.0 46.0 56.0 10.0 66.0 5 77.7 67.0 47.0 61.0 46.9 72.0 70.0 65.0 58.0 55.0 49.0 48.0 61.0 10.0 71.0 6 63.8 87.3 52.8 75.0 71.0 67.0 65.0 61.0 59.0 55.0 54.0 53.0 63.8 10.0 73.8 61.3 83.6 49.7 72.0 69.0 65.0 63.0 60.0 57.0 53.0 52.0 51.0 61.3 0.0 61.3 8 67.2 94.4 48.6 74.0 72.0 68.0 66.0 64.0 63.0 54.0 51.0 50.0 67.2 0.0 67.2 9 63.9 83.0 50.1 74.0 71.0 68.0 66.0 63.0 61.0 55.0 54.0 52.0 63.9 0.0 63.9 10 59.4 79.1 69.0 49.0 45.0 59.4 59.4 44.6 66.0 63.0 61.0 59.0 56.0 52.0 0.0 11 60.4 76.5 44.1 69.0 67.0 66.0 64.0 61.0 54.0 47.0 46.0 45.0 60.4 0.0 60.4 12 67.0 66.0 50.0 48.0 62.8 0.0 62.8 79.4 46.9 71.0 69.0 64.0 58.0 49.0 62.8 Day 13 47.2 74.0 73.0 72.0 70.0 62.0 57.0 50.0 48.0 0.0 64.4 84.4 51.0 64.4 64.4 14 60.6 77.7 46.9 72.0 71.0 66.0 63.0 57.0 54.0 50.0 49.0 48.0 60.6 0.0 60.6 15 79.7 58.0 46.2 69.0 66.0 62.0 60.0 56.0 53.0 49.0 48.0 47.0 58.0 0.0 58.0 16 55.1 72.6 44.5 64.0 62.0 60.0 58.0 54.0 51.0 47.0 47.0 45.0 55.1 0.0 55.1 17 45.0 62.5 89.3 45.2 71.0 64.0 57.0 55.0 51.0 49.0 46.0 46.0 62.5 0.0 62.5 18 52.4 68.4 44.6 64.0 62.0 57.0 54.0 50.0 48.0 46.0 45.0 45.0 52.4 0.0 52.4 19 53.5 70.8 44.4 65.0 63.0 60.0 56.0 50.0 48.0 45.0 45.0 45.0 53.5 5.0 58.5 Evening 20 56.1 80.6 44.0 67.0 63.0 56.0 53.0 49.0 47.0 44.0 5.0 45.0 45.0 56.1 61.1 21 48.9 69.8 43.2 59.0 56.0 52.0 50.0 47.0 45.0 44.0 44.0 43.0 48.9 5.0 53.9 22 51.4 71.9 42.5 65.0 59.0 52.0 50.0 46.0 45.0 43.0 43.0 43.0 51.4 10.0 61.4 Night 23 51.9 71.4 42.3 66.0 62.0 53.0 50.0 45.0 44.0 43.0 43.0 43.0 51.9 10.0 61.9 L_{eq} (dBA) L1% L2% L5% L8% L25% L50% L90% L95% L99% Timeframe Hour L eq L max L min 57.0 54.0 48.0 45.0 Min 52.4 68.4 44.1 64.0 62.0 50.0 46.0 45.0 24-Hour Daytime Nighttime Day 67.2 74.0 73.0 72.0 70.0 52.0 Max 94.4 50.1 64.0 63.0 55.0 54.0 62.2 70.3 67.7 64.3 62.2 58.4 48.8 47.4 **Energy Average** Average: 55.1 50.0 57.7 60.3 61.3 Min 48.9 69.8 43.2 59.0 56.0 52.0 50.0 47.0 45.0 44.0 44.0 43.0 Evening 24-Hour CNEL (dBA) Max 56.1 80.6 44.4 67.0 63.0 60.0 56.0 50.0 48.0 45.0 45.0 45.0 53.7 63.7 56.0 53.0 48.7 44.7 44.7 **Energy Average** Average: 60.7 46.7 44.0 49.7 66.4 42.3 55.0 52.0 51.0 50.0 45.0 44.0 43.0 43.0 43.0 Min 64.9 Night 67.0 65.0 59.0 54.0 53.0 Max 63.8 87.3 52.8 75.0 71.0 61.0 55.0



53.8

50.4

49.2

47.3

46.8

46.4

Average:

65.9

60.4

55.2

57.7

Energy Average

24-Hour Noise Level Measurement Summary L6 - Located directly north of the project site. Date: Tuesday, July 30, 2019 Location: Meter: Piccolo I JN: 11965 Project: The Homestead Analyst: P. Mara Hourly L ea dBA Readings (unadjusted) 80.0 75.0 70.0 65.0 660.0 55.0 50.0 45.0 40.0 9 61 85 9 28 57 40.0 0 1 2 3 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 **Hour Beginning** Timeframe Hour L1% L2% L5% L8% L25% L50% L90% L95% L99% Adj. Adj. L eq L eq L_{max} L min L eq 50.2 68.4 42.9 65.0 60.0 50.0 47.0 45.0 44.0 43.0 43.0 43.0 50.2 10.0 60.2 0 1 47.4 66.2 43.3 54.0 51.0 48.0 47.0 46.0 45.0 44.0 44.0 43.0 47.4 10.0 57.4 2 44.4 48.3 62.9 58.0 54.0 49.0 48.0 47.0 46.0 45.0 45.0 45.0 48.3 10.0 58.3 Night 3 51.9 71.9 46.1 59.0 56.0 52.0 51.0 50.0 48.0 47.0 46.0 46.0 51.9 10.0 61.9 4 56.0 79.1 45.5 69.0 61.0 51.0 50.0 48.0 48.0 47.0 46.0 46.0 56.0 10.0 66.0 5 60.4 83.9 47.4 59.0 71.0 68.0 63.0 53.0 49.0 48.0 48.0 60.4 10.0 70.4 51.0 6 65.0 88.5 47.1 78.0 74.0 68.0 64.0 55.0 52.0 49.0 48.0 48.0 65.0 10.0 75.0 54.1 75.5 47.2 65.0 62.0 57.0 55.0 51.0 50.0 48.0 48.0 48.0 54.1 0.0 54.1 8 57.4 79.7 45.8 70.0 65.0 59.0 57.0 52.0 50.0 47.0 47.0 46.0 57.4 0.0 57.4 9 60.5 78.4 45.0 71.0 69.0 67.0 65.0 57.0 51.0 47.0 47.0 46.0 60.5 0.0 60.5 10 74.9 43.0 67.0 59.0 44.0 56.3 65.0 62.0 53.0 51.0 46.0 45.0 56.3 0.0 56.3 11 59.3 84.6 41.0 70.0 66.0 60.0 58.0 53.0 49.0 43.0 42.0 41.0 59.3 0.0 59.3 12 80.3 43.3 66.0 62.0 59.0 57.2 0.0 57.2 68.0 54.0 50.0 46.0 45.0 44.0 57.2 Day 13 61.3 87.3 43.3 72.0 69.0 64.0 61.0 52.0 49.0 46.0 45.0 44.0 61.3 0.0 61.3 14 58.7 82.8 45.0 69.0 60.0 58.0 47.0 46.0 58.7 0.0 58.7 66.0 53.0 51.0 46.0 15 59.0 57.4 78.6 45.4 68.0 66.0 62.0 54.0 51.0 48.0 47.0 46.0 57.4 0.0 57.4 16 53.9 70.8 43.6 64.0 62.0 59.0 57.0 53.0 50.0 46.0 46.0 45.0 53.9 0.0 53.9 17 45.0 58.8 83.2 45.1 72.0 63.0 56.0 52.0 49.0 47.0 46.0 46.0 58.8 0.0 58.8 18 50.9 65.9 45.1 60.0 58.0 54.0 53.0 50.0 48.0 46.0 46.0 46.0 50.9 0.0 50.9 19 51.8 66.2 44.4 61.0 60.0 57.0 55.0 50.0 48.0 46.0 45.0 45.0 51.8 5.0 56.8 Evening 20 53.3 77.6 43.7 64.0 60.0 55.0 53.0 49.0 47.0 44.0 5.0 45.0 45.0 53.3 58.3 21 49.4 74.3 43.0 59.0 55.0 53.0 52.0 48.0 46.0 44.0 44.0 43.0 49.4 5.0 54.4 22 50.2 69.3 41.4 63.0 57.0 51.0 49.0 47.0 45.0 43.0 43.0 42.0 50.2 10.0 60.2 Night 23 55.0 81.0 41.5 67.0 65.0 57.0 52.0 46.0 44.0 43.0 42.0 42.0 55.0 10.0 65.0 L_{eq} (dBA) L1% L2% L5% L8% L25% L50% L90% L95% L99% Timeframe Hour L eq L max L min 58.0 54.0 52.0 47.0 Min 50.9 41.0 60.0 49.0 43.0 42.0 41.0 24-Hour Daytime Nighttime Day 47.2 72.0 69.0 67.0 48.0 48.0 Max 61.3 87.3 65.0 57.0 51.0 48.0 58.0 68.0 60.2 57.8 52.6 49.8 45.1 **Energy Average** Average: 64.8 46.3 45.8 57.8 57.5 57.2 Min 49.4 66.2 43.0 59.0 55.0 53.0 52.0 48.0 46.0 44.0 44.0 43.0 Evening 24-Hour CNEL (dBA) Max 53.3 77.6 44.4 64.0 60.0 57.0 55.0 50.0 48.0 46.0 45.0 45.0 58.3 55.0 53.3 47.0 45.0 44.7 **Energy Average** 51.8 Average: 61.3 49.0 44.0 47.4 62.9 41.4 54.0 51.0 48.0 47.0 45.0 44.0 43.0 42.0 42.0 Min 64.2 Night 78.0 74.0 68.0 64.0 52.0 49.0 48.0 48.0 Max 65.0 88.5 47.4 55.0 57.8 Average: 64.9 60.7 54.3 51.9 48.6 47.0 45.6 45.0 44.8



Energy Average

APPENDIX 7.1:

OFF-SITE TRAFFIC NOISE CONTOURS



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	FHW	/A-RD-77-108	HIGHWA	A Y A	NOISE PE	REDICT	ION MO	DEL			
		<i>I</i> .				Projec	! Name: lumber:	Home			
SITE	SPECIFIC IN	PUT DATA				1	NOISE N	MODE	EL INPUTS	3	
Highway Data					Site Con						
Average Daily	Traffic (Adt):	27,047 vehicle	es					Autos	: 15		
Peak Hour	Percentage:	10%			Me	dium Ti	ucks (2)	Axles)	: 15		
Peak F	Hour Volume:	2,705 vehicles	S		He	avy Tru	cks (3+)	Axles)	: 15		
Ve	ehicle Speed:	55 mph		-	Vehicle I						
Near/Far La	ane Distance:	93 feet		- 1		icleType		Dav	Evening	Night	Daily
Site Data				+	ven		Autos:	74.19		15.69	. ,
	la I la la la la la	0.0.64		\dashv	Me	edium 7		69.09		23.89	
	rrier Height:	0.0 feet 0.0				Heavy 7		82.19		13.99	
Barrier Type (0-V	vali, 1-Berm): ist. to Barrier:	0.0 74.0 feet									
Centerline Dist.		74.0 feet			Noise Sc	ource E	levation	s (in i	feet)		
Barrier Distance		0.0 feet				Auto		000			
Observer Height		5.0 feet			Mediui	m Truck	s: 2.	297			
	ad Elevation:	0.0 feet			Heav	y Truck	s: 8.	004	Grade Adj	iustmei	nt: 0.0
	ad Elevation:	0.0 feet		ı	Lane Eq	uivalen	t Distan	ce (in	feet)		
	Road Grade:	0.0%		ı		Auto		782	,		
	Left View:	-90.0 degree	ae .		Mediu	m Truck	s: 57	629			
	Right View:	90.0 degree				y Truck		644			
FHWA Noise Mod	lel Calculations	<u> </u>									
VehicleType	REMEL	Traffic Flow	Distan	се	Finite	Road	Fresr	nel	Barrier Atte	en Be	erm Atten
Autos:	71.78	1.14		-1.0	5	-1.20		-4.73	0.0	000	0.000
Medium Trucks:	82.40	-9.92		-1.0	3	-1.20		-4.88	0.0	000	0.000
Heavy Trucks:	86.40	-13.16		-1.0	3	-1.20		-5.25	0.0	000	0.000
Unmitigated Nois	e Levels (witho	ut Topo and	barrier a	tten	nuation)						
VehicleType	Leq Peak Hour	r Leq Day	Le	q E	vening	Leq	Night		Ldn	(CNEL
Autos:	70.	7	68.6		66.0		63.1	1	70.7	7	71.1
Medium Trucks:	70.	3	67.8		64.0		64.5	5	71.4	ļ	71.6
Heavy Trucks:	71.	0	69.4		62.2		62.9	9	70.7	7	70.9
Vehicle Noise:	75.	4	73.4		69.1		68.3	3	75.7	7	76.0
Centerline Distan	ce to Noise Co	ntour (in feet,)								
•	-			70	dBA	65	dBA		60 dBA	5	5 dBA
			Ldn:		78	_	84		828		1,784
		CI	VEL:	18	85	3	99		860		1,854

	FH	WA-RD-77-108	HIGI	HWAY	NOISE P	REDICTI	ON MO	DDEL			
	io: E ne: Archibald A nt: s/o Schaef					Project Job N		Home: 11968			
SITE	SPECIFIC IN	NPUT DATA				N	OISE	MODE	L INPUT	3	
Highway Data					Site Con	ditions	(Hard :	= 10, S	oft = 15)		
	Traffic (Adt): Percentage: lour Volume:	22,707 vehicle 10% 2,271 vehicle				dium Tru avy Truc		/	15		
	hicle Speed:	55 mph			Vehicle	Wix					
Near/Far La	ne Distance:	93 feet			Veh	icleType		Day	Evening	Night	Daily
Site Data						F	lutos:	74.1%	6 10.3%	15.6%	89.65%
Ba	rrier Heiaht:	0.0 feet			М	edium Tı	ucks:	69.0%	6 7.1%	23.8%	7.02%
Barrier Type (0-VI		0.0				Heavy Tr	ucks:	82.1%	3.9%	13.9%	3.33%
,, ,	st. to Barrier:	74.0 feet			Noise So	urco El	ovatio	ne (in f	not)		
Centerline Dist.	to Observer:	74.0 feet			Noise 3	Auto:		0.000	eet)		
Barrier Distance	to Observer:	0.0 feet			Modiu	m Trucks		297			
Observer Height	(Above Pad):				y Trucks		.004	Grade Ad	iuetmant	- 0.0	
P	ad Elevation:	0.0 feet			пеа	ry Trucks	s. c	.004	Grade Au	usunen	. 0.0
Ro	ad Elevation:	0.0 feet			Lane Eq	uivalent	Distar	nce (in	feet)		
	Road Grade:	0.0%				Autos	s: 57	7.782			
	Left View:	-90.0 degre	es		Mediu	m Trucks	s: 57	7.629			
	Right View:	90.0 degre	es		Hear	y Trucks	s: 57	7.644			
FHWA Noise Mod	el Calculation	ıs									
VehicleType	REMEL	Traffic Flow	Di	stance	Finite	Road	Fres	nel	Barrier Att	en Ber	m Atten
Autos:	71.78			-1.0		-1.20		-4.73		000	0.00
Medium Trucks:				-1.0		-1.20		-4.88		000	0.00
Heavy Trucks:				-1.0		-1.20		-5.25	0.0	000	0.000
Unmitigated Nois											
VehicleType	Leq Peak Ho			Leq E	vening	Leq	Night		Ldn	-	NEL
Autos:		9.9	67.8		65.3		62		69.9		70.
Medium Trucks:		9.5	67.1		63.2		63		70.7		70.
Heavy Trucks: Vehicle Noise:		0.2 4.7	68.6 72.6		61.4 68.4		62 67		70.0 75.0		70. 75.
Centerline Distan	no to Noiso C	ontour (in foo	4)								
Jerneriine Distant	LE LU MUISE C	omour (iii lee	'	70	dBA	65 (dBA		60 dBA	55	dBA
			Ldn:	1	59	34	12		737	1.	588

	FHV	VA-RD-77-108	HIGHWA	AY NO	OISE PE	REDICT	ION MO	DEL			
Scenario Road Name Road Segmen	e: Archibald A						t Name: lumber:		stead		
SITE S	SPECIFIC IN	PUT DATA				1	NOISE I	MODE	L INPUT	S	
Highway Data				S	ite Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily 1	Traffic (Adt):	24,341 vehicle	es					Autos:	15		
Peak Hour I	Percentage:	10%			Me	dium Tr	ucks (2	Axles):	15		
Peak Ho	our Volume:	2,434 vehicle	S		He	avy Tru	cks (3+	Axles):	15		
Vel	nicle Speed:	55 mph		V	ehicle l	Miv					
Near/Far Lar	ne Distance:	93 feet		- 1		icleType	9	Day	Evening	Night	Daily
Site Data							Autos:	74.1%		15.6%	
Ran	rier Height:	0.0 feet			M	edium T	rucks:	69.0%	7.1%	23.8%	7.029
Barrier Type (0-Wa	-	0.0			F	Heavy T	rucks:	82.1%	3.9%	13.9%	3.339
Centerline Dis		74.0 feet		N	loise Sc	ource E	levation	s (in fe	eet)		
Centerline Dist. t		74.0 feet		Ë		Auto		000	/		
Barrier Distance t		0.0 feet			Mediu	m Truck		297			
Observer Height (A	Above Pad):	5.0 feet				vy Truck		004	Grade Ad	liustmen	t: 0.0
	d Elevation:	0.0 feet								,	
	d Elevation:	0.0 feet		L	ane Eq		t Distan		feet)		
F	Road Grade:	0.0%				Auto		782			
	Left View:	-90.0 degree	es			m Truck		629			
	Right View:	90.0 degree	es		Heav	y Truck	s: 57.	.644			
FHWA Noise Mode											
VehicleType	REMEL	Traffic Flow	Distan			Road	Fresi		Barrier Att		rm Atten
Autos:	71.78	0.68		-1.05		-1.20		-4.73		000	0.00
Medium Trucks:	82.40	-10.38		-1.03		-1.20		-4.88		000	0.00
Heavy Trucks:	86.40	-13.62		-1.03		-1.20		-5.25	0.0	000	0.00
Unmitigated Noise	•							1			
VehicleType Autos:	Leq Peak Hou 70		68.1	q Eve	ening 65.6	Leq	Night 62.1		Ldn 70.:	_	NEL 70
Medium Trucks:	69		67.4		63.5		64.1	-	71.0	_	71.
Heavy Trucks:	70		68.9		61.7		62.4	-	70.	-	70.
Vehicle Noise:	75		73.0		68.7		67.9		75.	-	75.
			1								
Centerline Distance	e to Noise Co	ontour (in feet	,								
Centerline Distance	e to Noise Co	ontour (in feet		70 dl	BA	65	dBA	6	0 dBA	55	dBA
Centerline Distance	e to Noise Co	,	Ldn:	70 dl			dBA 58	6	60 dBA 772		663

Thursday, August 8, 2019

	FHV	VA-RD-77-108 H	IIGHWAY	NOISE P	REDICTIO	N MODEL		
Scenario: Road Name: Road Segment:	Archibald A					lame: Hom mber: 1196		
SITE SF	PECIFIC IN	PUT DATA			NC	ISE MOD	EL INPUTS	5
Highway Data				Site Cor	ditions (F	lard = 10,	Soft = 15)	
Average Daily Tr	affic (Adt):	25,905 vehicles				Auto	s: 15	
Peak Hour Pe	ercentage:	10%		Me	dium Truc	ks (2 Axles	s): 15	
Peak Hou	ır Volume:	2,591 vehicles		He	avy Truck	s (3+ Axles	s): 15	
Vehic	cle Speed:	55 mph		Vehicle	Miss			
Near/Far Lane	Distance:	93 feet			icleType	Day	Evening	Night Daily
Site Data				V C//		tos: 74.1		15.6% 89.65%
					edium Tru			23.8% 7.02%
	er Height:	0.0 feet 0.0			Heavy Tru			13.9% 3.33%
Barrier Type (0-Wali Centerline Dist.		0.0 74.0 feet						10.070 0.0070
Centerline Dist. to		74.0 feet		Noise S		vations (in	feet)	
Barrier Distance to		0.0 feet			Autos:			
Observer Height (At		5.0 feet			m Trucks:			
	Flevation:	0.0 feet		Hear	y Trucks:	8.004	Grade Ad	iustment: 0.0
	Elevation:	0.0 feet		Lane Eq	uivalent [Distance (i	n feet)	
	ad Grade:	0.0%			Autos:		,	
	I eft View:	-90.0 degrees		Madiu	m Trucks:			
	Right View:	90.0 degrees			y Trucks:			
FHWA Noise Model	Calculations	5						
VehicleType	REMEL	Traffic Flow	Distance	Finite	Road	Fresnel	Barrier Att	en Berm Atten
Autos:	71.78	0.95	-1	.05	-1.20	-4.7	3 0.0	0.000
Medium Trucks:	82.40	-10.11	-1	.03	-1.20	-4.8	8 0.0	0.000
Heavy Trucks:	86.40	-13.35	-1	.03	-1.20	-5.2	5 0.0	0.000
Unmitigated Noise L	evels (with	out Topo and b	arrier atte	enuation)				
VehicleType Le	eq Peak Hou	r Leq Day	Leq	Evening	Leq N	ight	Ldn	CNEL
Autos:	70	.5 6	3.4	65.8		62.9	70.5	70.9
Medium Trucks:	70	.1 6	7.7	63.8		64.3	71.2	2 71.4
Heavy Trucks:	70	.8 6	9.2	62.0		62.7	70.5	70.7
Vehicle Noise:	75	.2 7	3.2	68.9		68.1	75.5	75.8
Centerline Distance	to Noise Co	ntour (in feet)	7.) -(D.4	05 -11	24	00 -ID4	55 -ID4
		,) dBA	65 dE		60 dBA	55 dBA
		_		173			805	1,733
		CN	EL:	180	388	5	836	1,801

Thursday, August 8, 2019

	FH\	WA-RD-77-108	HIGH	WAY N	IOISE PI	REDICT	ION MC	DEL			
	rio: E ne: Archibald A ent: s/o Eucalyp						t Name: lumber:		stead		
SITE	SPECIFIC IN	IPUT DATA				N	IOISE	MODE	L INPUT	S	
Highway Data				;	Site Con	ditions	(Hard =	: 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	25,103 vehicle	es					Autos:	15		
Peak Hou	r Percentage:	10%			Me	edium Tr	ucks (2	Axles):	15		
Peak I	Hour Volume:	2,510 vehicle	S		He	avy Tru	cks (3+	Axles):	15		
V	ehicle Speed:	55 mph		١,	Vehicle	Miv					
Near/Far La	ane Distance:	93 feet		H		icleType		Dav	Evening	Night	Daily
Site Data							Autos:	74.1%		15.6%	
D.	arrier Height:	0.0 feet			М	edium T	rucks:	69.0%	7.1%	23.8%	7.02%
Barrier Type (0-V		0.0 feet				Heavy T	rucks:	82.1%	3.9%	13.9%	3.33%
	ist to Barrier:	74.0 feet		L							
Centerline Dist	to Observer:	74.0 feet		1	Voise S				eet)		
Barrier Distance	to Observer:	0.0 feet				Auto		.000			
Observer Height	(Above Pad):	5.0 feet				m Truck		.297	0		
	Pad Elevation:	0.0 feet			Hear	y Truck	:s: 8	.004	Grade Ad	justmeni	0.0
Ro	ad Elevation:	0.0 feet		1	Lane Eq	uivalen	t Distar	ce (in	feet)		
	Road Grade:	0.0%				Auto	s: 57	.782			
	Left View:	-90.0 degree	es		Mediu	m Truck	s: 57	.629			
	Right View:	90.0 degree	es		Hear	y Truck	s: 57	.644			
FHWA Noise Mod	lel Calculation	s									
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fres		Barrier Att	en Bei	rm Atten
Autos.		0.81		-1.0	-	-1.20		-4.73		000	0.000
Medium Trucks.		-10.25		-1.0	-	-1.20		-4.88		000	0.000
Heavy Trucks.	86.40	-13.49		-1.0	3	-1.20		-5.25	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier	atten	uation)						
VehicleType	Leq Peak Hou	ır Leq Day	/	Leq E	/ening	Leq	Night		Ldn	С	NEL
Autos.	70	.3	68.3		65.7		62.	7	70.4	4	70.7
Medium Trucks.			67.5		63.7		64.	_	71.		71.3
Heavy Trucks.			69.0		61.9		62.		70.4		70.6
Vehicle Noise	: 75	i.1	73.1		68.8		68.	0	75.4	4	75.7
Centerline Distan	ce to Noise C	ontour (in feet)								
				70 c			dBA	(60 dBA		dBA
		_	Ldn:	17	-	-	66		788		697
		C	NEL:	17	6	3	80		819	1,	764

entage:	UT DATA 5,787 vehicle 10%	200			Job N	Name:	11968			
iic (Adt): 2: entage: Volume: 2	5,787 vehicle 10%	26			N	OICE	1005			
entage: Volume: 2	10%	26				DISE	NODE	L INPUTS	3	
entage: Volume: 2	10%	20		Site Con	ditions	(Hard =	10, So	ft = 15)		
Volume: 2							Autos:	15		
	F70			Me	dium Tru	icks (2 /	Axles):	15		
Speed:	,579 vehicles	3		He	avy Truc	cks (3+ A	Axles):	15		
	50 mph		ŀ	Vehicle I	Miv					
istance:	78 feet		ŀ		icleType		Day	Evening	Night	Daily
								-	•	
Hoight:	0.0 foot			М	edium Ti	rucks:	69.0%	7.1%	23.8%	7.02%
				1	Heavy Ti	rucks:	82.1%	3.9%	13.9%	3.33%
Barrier:	76.0 feet									
bserver:	76.0 feet		-	Noise So				et)		
bserver:	0.0 feet			A de elle						
/e Pad):	5.0 feet							Crada Ad	i rotmont	0.0
evation:	0.0 feet			Heat	y iruck	S. 8.	004	Grade Adj	usimeni	0.0
evation:	0.0 feet			Lane Eq	uivalent	Distant	ce (in f	eet)		
Grade:	0.0%				Auto	s: 65.	422			
eft View:	-90.0 degree	es		Mediu	m Truck	s: 65.	286			
ht View:	90.0 degree	es		Heav	y Truck	s: 65.	299			
lculations										
		Dis				Fresn				m Atten
										0.00
										0.000
85.38	-12.96		-1.8	34	-1.20		-5.25	0.0	000	0.00
	ıt Topo and	barrie	er atter	nuation)						
Peak Hour	, ,		Leq E					Ldn		VEL
										68.
							-			69.6
										69.0 74.0
				07.1		00.4	+	13.0	,	74.1
Noise Con	tour (in feet,)	70	dBA	65	dRA	6	n dBA	55	dBA
		I dn								361
									,	114
i bb/eelel	oserver: ose	Barnis 0.0	Berm : 0.0	Berm : 0.0 Barrier: 76.0 feet Barrier: 76.0 feet Seerver: 76.0 feet Seerver: 76.0 feet Seerver: 0.0 feet Grade: 0.0 feet Grade: 0.0 feet Grade: 0.0 feet Grade: 0.0 feet Seerver:	Melight: 0.0 feet	Medium M	Autos: Autos: Medium Trucks: Server: 76.0 feet Server: 76.0 feet Autos: Medium Trucks: Medium Trucks:	Autos: 74.1%	Autos	Medium Trucks: 69.0% 7.1% 23.8%

FH	WA-RD-77-108	HIGHWA	Y NO	ISE PR	EDICTI	ON MO	DEL			
Scenario: E Road Name: Archibald a Road Segment: s/o Merrill					Project Job Ni	Name: ımber:		stead		
SITE SPECIFIC II	NPUT DATA				N	OISE I	ИODE	L INPUT	S	
Highway Data			Si	te Cond	ditions (Hard =	10, Sc	oft = 15)		
Average Daily Traffic (Adt):	26,707 vehicle	es					Autos:	15		
Peak Hour Percentage:	10%			Med	dium Tru	cks (2 .	4xles):	15		
Peak Hour Volume:	2,671 vehicle	s		Hea	avy Truc	ks (3+ .	4xles):	15		
Vehicle Speed:	55 mph		Ve	ehicle N	liv					
Near/Far Lane Distance:	93 feet		-		cleType		Dav	Evening	Night	Daily
Site Data						utos:	74.1%		15.6%	
Barrier Height:	0.0 feet			Me	dium Tr	ucks:	69.0%	7.1%	23.8%	7.02%
Barrier Type (0-Wall, 1-Berm):	0.0			H	leavy Tr	ucks:	82.1%	3.9%	13.9%	3.33%
Centerline Dist. to Barrier:	74.0 feet		No	oise So	urce Ele	evation	s (in fe	eet)		
Centerline Dist. to Observer:	74.0 feet				Autos	: 0.	000			
Barrier Distance to Observer:	0.0 feet			Mediun	n Trucks	: 2.	297			
Observer Height (Above Pad):	5.0 feet			Heav	v Trucks	: 8.	004	Grade Ad	justmen	t: 0.0
Pad Elevation:	0.0 feet		_							
Road Elevation:	0.0 feet		La	ne Equ	ivalent			reet)		
Road Grade:	0.0%				Autos		782			
Left View:	-90.0 degre				n Trucks		629			
Right View:	90.0 degree	es		Heav	y Trucks	: 57.	644			
FHWA Noise Model Calculation										
VehicleType REMEL	Traffic Flow	Distan		Finite I		Fresi		Barrier Att		rm Atten
Autos: 71.78			1.05		-1.20		-4.73		000	0.000
Medium Trucks: 82.40			1.03		-1.20		-4.88		000	0.000
Heavy Trucks: 86.40			1.03		-1.20		-5.25	0.0	000	0.000
Unmitigated Noise Levels (with										
VehicleType Leq Peak Ho Autos: 7		/ Le 68.5	q Eve	66.0	Leq I	Night 63.1		Ldn 70.6		NEL 71.0
		67.8		63.9		64.4	-	70.6	-	71.6
		07.0						70.7		70.8
	0.2	60.3								
Heavy Trucks: 7	0.2 0.9 5.4	69.3 73.4		62.1 69.1		62.9		75.7		
Heavy Trucks: 7	0.9 5.4	73.4								
Heavy Trucks: 79 Vehicle Noise: 79	0.9 5.4	73.4	70 dB	69.1	65 (68.: IBA	3	75.1 60 dBA	7	75.9 5 dBA
Heavy Trucks: 79 Vehicle Noise: 79	0.9 5.4 Contour (in feet	73.4	70 dB 177 184	69.1	65 c 38	68.: IBA	3	75.1	7 55 1	75.9

Thursday, August 8, 2019

	FHV	VA-RD-77-108 H	IIGHWAY	NOISE P	REDICTIO	ON MOI	DEL			
Scenario. Road Name. Road Segment.	Archibald A				Project I Job Nu			stead		
SITE SI	PECIFIC IN	IPUT DATA			NO	DISE N	10DE	L INPUT	S	
Highway Data				Site Cor	ditions (l	Hard =	10, Sc	oft = 15)		
Average Daily Tr	raffic (Adt):	29,454 vehicles				,	Autos:	15		
Peak Hour P	ercentage:	10%		Me	edium True	cks (2 A	xles):	15		
Peak Ho	ur Volume:	2,945 vehicles		He	avy Truck	ks (3+ A	xles):	15		
Vehi	cle Speed:	50 mph		Vehicle	Miss					
Near/Far Lane	Distance:	78 feet			icleType		Day	Evening	Night	Daily
Site Data				VCII			74.1%	-	15.6%	89.65%
	la ii II alaiba	0.0.64		М	edium Tri.		69.0%		23.8%	7.02%
Barrier Type (0-Wai	ier Height:	0.0 feet 0.0			Heavy Tru		82.1%		13.9%	3.33%
Centerline Dist.	. ,	76.0 feet								
Centerline Dist. to		76.0 feet		Noise S	ource Ele		•	eet)		
Barrier Distance to		0.0 feet			Autos:					
Observer Height (A		5.0 feet			m Trucks.					
	l Flevation:	0.0 feet		Hear	vy Trucks:	8.0	004	Grade Ad	justment.	0.0
	Flevation:	0.0 feet		Lane Eq	uivalent l	Distanc	e (in	feet)		
	ad Grade:	0.0%			Autos			,		
710	Left View:	-90.0 degrees		Mediu	m Trucks					
F	Right View:	90.0 degrees			vy Trucks:					
FHWA Noise Model	Calculation	s		1						
VehicleType	REMEL	Traffic Flow	Distance	Finite	Road	Fresn	el	Barrier Att	en Ber	m Atten
Autos:	70.20	1.92	-1	.85	-1.20		4.73	0.0	000	0.000
Medium Trucks:	81.00	-9.14	-1	.84	-1.20		-4.88	0.0	000	0.000
Heavy Trucks:	85.38	-12.38	-1	.84	-1.20		-5.25	0.0	000	0.000
Unmitigated Noise I	Levels (with	out Topo and b	arrier atte	enuation)						
VehicleType L	eq Peak Hou	ır Leq Day	Leq	Evening	Leq N	light		Ldn	CI	VEL
Autos:	69	.1 67	7.0	64.4		61.5		69.1	1	69.5
Medium Trucks:	68	.8 66	6.4	62.6		63.1		70.0)	70.2
Heavy Trucks:	70	.0 68	3.3	61.1		61.9		69.7	7	69.8
Vehicle Noise:	74	.1 72	2.1	67.7		66.9		74.4	1	74.6
Centerline Distance	to Noise Co	ontour (in feet)								
) dBA	65 d		(60 dBA		dBA
		_	dn:	149	320	-		690	,	488
		CNE	EL:	154	33	3		717	1,	545

Average Daily Traffic (Adt): 14,116 vehicles Peak Hour Potreentage: 1,412 vehicles Yehicle Speed: 50 mph Near/Far Lane Distance: 51 feet Yehicle Mix Vehicle Type Day Evening Night Daily Vehicle Mix Vehicle Mix Vehicle Type Day Evening Night Daily Vehicle Mix Vehicle Mix Vehicle Type Day Evening Night Daily Vehicle Mix Vehicle Mix Vehicle Type Day Evening Night Daily Vehicle Mix Vehicle Dix Vehicle Type Day Evening Night Daily Vehicle Mix Vehicle Dix Vehicle Mix Vehicle Type Day Evening Night Daily Vehicle Mix Vehicle Dix Vehicle Mix Vehicle Mix Vehicle Type Day Evening Night Daily Vehicle Mix Vehicle Type Day Evening Night Daily Vehicle Mix Vehicle Mix Vehicle Mix Vehicle Mix Vehicle Type Night Daily Vehicle Mix Vehicle Type Night Daily Vehicle Mix Vehicle Type Night Vehicle Mix Vehicle Type Night		FHV	VA-RD-77-108	HIGH	WAY N	IOISE P	REDICT	ION MC	DEL			
Mighway Data	Road Nan	ne: Kimball Av.								stead		
Average Daily Traffic (Adt): 14,116 vehicles Peak Hour Potentage: 10% Medium Trucks (2 Axles): 15	SITE	SPECIFIC IN	IPUT DATA				1	NOISE	MODE	L INPUT	S	
Peak Hour Percentage:	Highway Data					Site Cor	nditions	(Hard =	: 10, Sc	oft = 15)		
Peak Hour Volume: Vehicle Speed: 50 mph Vehicle Mix Vehicle Mix Vehicle Speed: 51 feet Vehicle Mix Vehicle Mix Vehicle Type Day Evening Night Daily Vehicle Mix Vehicle Mix Vehicle Mix Vehicle Mix Vehicle Type Day Evening Night Daily Vehicle Dix to Barrier: 49.0 feet Medium Trucks: 89.0% 7.1% 23.8% 7.02% Heavy Trucks: 82.1% 3.9% 13.9% 3.33% Night N	Average Daily	Traffic (Adt):	14,116 vehicle	es					Autos:	15		
Vehicle Near/Far Lane Distance: 51 feet Vehicle Mix Vehicle Type Day Evening Night Daily	Peak Hour	Percentage:	10%			Me	edium Ti	rucks (2	Axles):	15		
Near/Far Lane Distance: 51 feet VehicleType Day Evening Night Daily	Peak H	Hour Volume:	1,412 vehicles	3		He	eavy Tru	cks (3+	Axles):	15		
Near/Far Lane Distance S1 feet VehicleType Day Evening Night Daily	Ve	ehicle Speed:	50 mph			Vehicle	Miv					
Site Data	Near/Far La	ane Distance:	51 feet		F			2	Dav	Evenina	Night	Daily
	Site Data									-		
Barrier Type (0-Wall, 1-Berm):	Do.	rrior Hoight:	0.0 foot			M	ledium 7	rucks:	69.0%	7.1%	23.8%	7.02%
Centerline Dist. to Observer:							Heavy 7	rucks:	82.1%	3.9%	13.9%	3.33%
Centerline Dist. to Observer: Barrier Distance to Observer: 0.0 feet Breatons (in Feet) Comparison					-							
Barrier Distance to Observer: 0.0 feet Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0	Centerline Dist.	to Observer:			Ľ	Noise S				eet)		
Diserver Height (Above Pad):	Barrier Distance	to Observer:	0.0 feet									
Pad Elevation: 0.0 feet Heavy Inucks: 8,004 Grade Adjustment. 0.0 Road Grade: 0.0% Lane Equivalent Distance (in feet) Left View: -90.0 degrees Medium Trucks: 41,929 Heavy Trucks: 81,00 -12,72 1.01 -1.20 -4,64 0.000 0.000 Medium Trucks: 81,00 -12,33 1.04 -1.20 -4,64 0.000 0.000 Unmitigated Noise Levels (without Topo and barrier attenuation) Unmitigated Noise Levels (without Topo	Observer Height	(Above Pad):	5.0 feet							0		
Road Grade:		. ,	0.0 feet			Hea	vy Truck	rs: 8	.004	Grade Ad	justmen	0.0
Right View:	Ro	ad Elevation:	0.0 feet		1	Lane Eq	uivalen	t Distar	ce (in	feet)		
FHWA Noise Model Calculations Vehicle Type REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 -1.27 1.01 -1.20 -4.64 0.000 0.000 0.000		Road Grade:	0.0%				Auto	s: 42	.140			
FHWA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnet Barrier Atten Berm Atten		Left View:	-90.0 degree	es		Mediu	m Truck	s: 41	.929			
VehicleType		Right View:	90.0 degree	es		Hea	vy Truck	rs: 41	.950			
Autos: 70.20	FHWA Noise Mod	el Calculation	s									
Medium Trucks: 81.00 -12.33 1.04 -1.20 -4.87 0.000 0.000 Heavy Trucks: 85.38 -15.57 1.04 -1.20 -5.44 0.000 0.000 Unmitigated Noise Levels (without Topo and barrier attenution) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 68.7 66.6 64.1 661.1 68.8 69.1 Medium Trucks: 68.5 66.1 62.3 62.7 69.7 69.5 Heavy Trucks: 69.6 68.0 60.8 61.5 69.4 69.5 Vehicle Noise: 73.8 71.8 67.4 66.6 74.1 74.3 Centerline Distance to Noise Contour (in feet) To dBA 65 dBA 60 dBA 55 dBA Ldn: 91 197 424 914 To distance to Noise Contour (in feet) 197 424 1974 To dBA 197 197 197 197 1974 1974 To dBA 197 1974 1974 1974 1974 1974 To dBA 1976 19	VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fres	nel	Barrier Att	en Be	rm Atten
Heavy Trucks: 85.38 -15.57 1.04 -1.20 -5.44 0.000 0.000												0.000
Vehicle Type												0.000
VehicleType	Heavy Trucks:	85.38	-15.57		1.0	4	-1.20		-5.44	0.0	000	0.000
Autos: 68.7 66.8 64.1 61.1 68.8 69.1 Medium Trucks: 68.5 66.1 62.3 62.7 69.7 69.8 Heavy Trucks: 69.6 68.0 60.8 61.5 69.4 69.8 Vehicle Noise: 73.8 71.8 67.4 66.6 74.1 74.3 Centerline Distance to Noise Contour (in feet) Ldn: 91 197 424 914		e Levels (with	out Topo and	barrier	r atten	uation)						
Medium Trucks: 68.5 66.1 62.3 62.7 69.7 69.8 Heavy Trucks: 69.6 68.0 60.8 61.5 69.4 69.5 Vehicle Noise: 73.8 71.8 67.4 66.6 74.1 74.3 Centerline Distance to Noise Contour (in few) Ldn: 91 197 424 914					Leq E							
Heavy Trucks: 69.6 68.0 60.8 61.5 69.4 69.5 Vehicle Noise: 73.8 71.8 67.4 66.6 74.1 74.5 Centerline Distance to Noise Contour (in feet)												
Vehicle Noise: 73.8 71.8 67.4 66.6 74.1 74.3 Centerline Distance to Noise Contour (in feet) Image: Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 91 197 424 914												
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 91 197 424 914												
70 dBA 65 dBA 60 dBA 55 dBA Ldn: 91 197 424 914						07.4		00.	0	74.	1	74.3
Ldn: 91 197 424 914	Centerine Distan	ce to Noise Co	nitour (in feet	, 	70.0	dRA.	65	dBA		SO dBA	55	dBA
				I dn:								
					-							

	FHW	/A-RD-77-108	HIGH	WAY N	IOISE PI	REDICTI	ои мо	DEL			
Scenario Road Name Road Segmen	: Limonite Av					Project Job N	Name: umber:		tead		
SITE S	PECIFIC IN	PUT DATA				N	OISE I	MODE	L INPUT	S	
Highway Data					Site Con	ditions	Hard =	10, So	ft = 15)		
Average Daily 1	raffic (Adt):	17,476 vehicle	es					Autos:	15		
Peak Hour I	Percentage:	10%			Me	dium Tru	icks (2	Axles):	15		
Peak Ho	our Volume:	1,748 vehicle	s		He	avy Truc	ks (3+)	Axles):	15		
Veh	icle Speed:	50 mph		-	Vehicle	Mix					
Near/Far Lan	e Distance:	78 feet		F		icleType		Day	Evening	Night	Daily
Site Data							utos:	74.1%	10.3%	15.6%	89.659
Ran	rier Height:	0.0 feet			М	edium Tr	ucks:	69.0%	7.1%	23.8%	7.029
Barrier Type (0-Wa		0.0				Heavy Tr	ucks:	82.1%	3.9%	13.9%	3.339
Centerline Dis		76.0 feet		-	Noisa Si	ource El	ovation	e (in fo	ot)		
Centerline Dist. t	o Observer:	76.0 feet		ť	10/30 00	Autos		000	<i>ci)</i>		
Barrier Distance t	o Observer:	0.0 feet			Mediu	m Trucks		297			
Observer Height (A	Above Pad):	5.0 feet				vy Trucks		004	Grade Ad	iustment	0.0
Pa	d Elevation:	0.0 feet									
	d Elevation:	0.0 feet		1	Lane Eq	uivalent			eet)		
R	Road Grade:	0.0%				Autos		422			
	Left View:	-90.0 degree				m Trucks		286			
	Right View:	90.0 degree	es		Hear	y Trucks	8: 65.	299			
FHWA Noise Mode	l Calculations	;									
VehicleType	REMEL	Traffic Flow	Dis	tance		Road	Fresi		Barrier Att		m Atten
Autos:	70.20	-0.35		-1.8	-	-1.20		-4.73		000	0.00
Medium Trucks:	81.00	-11.41		-1.8		-1.20		-4.88		000	0.00
Heavy Trucks:	85.38	-14.65		-1.8	4	-1.20		-5.25	0.0	000	0.00
Unmitigated Noise				er atten	uation)						
,,	Leq Peak Hou	.,.,		Leq E	vening	Leq			Ldn		NEL
Autos:	66.	-	64.7		62.2		59.2	_	66.8		67.
Medium Trucks:	66.		64.2		60.3		60.	-	67.		67.
Heavy Trucks: Vehicle Noise:	67. 71.	•	66.0 69.8		58.9 65.4		59.0 64.1	_	67.4 72.1		67. 72.
Centerline Distance					55.4		04.		12.		12.
Cerneriine Distance	e to Noise Co	mour (mreet	, 	70 0	dBA	65.0	iBA	6	0 dBA	55	dBA
			Ldn:	10)5	22	26		488	1,	050

	FHW	/A-RD-77-108 H	HIGH	I YAW	NOISE P	REDICT	ION MC	DEL			
	rio: E ne: Limonite Av ent: e/o Hellman					.,	t Name: Number:		stead		
SITE	SPECIFIC IN	PUT DATA							L INPUT	S	
Highway Data					Site Cor	nditions	(Hard =	: 10, S	oft = 15)		
Average Daily	Traffic (Adt):	1 vehicles	3					Autos:	15		
Peak Hou	r Percentage:	10%			Me	edium T	rucks (2	Axles):	15		
Peak I	Hour Volume:	0 vehicles			He	eavy Tru	icks (3+	Axles):	15		
Ve	ehicle Speed:	50 mph		F	Vehicle	Miss					
Near/Far La	ane Distance:	78 feet		ŀ		iicleTyp	9	Dav	Evening	Night	Daily
Site Data							Autos:	74.1%	-	15.6%	
D-	rrier Heiaht:	0.0 feet			M	ledium 1	rucks:	69.0%	7.1%	23.8%	7.02
Barrier Type (0-V		0.0				Heavy 1	rucks:	82.1%	3.9%	13.9%	3.33
	ist. to Barrier:	76.0 feet									
Centerline Dist.		76.0 feet			Noise S				eet)		
Barrier Distance		0.0 feet				Auto		.000			
Observer Height		5.0 feet				m Truci		.297			
	Pad Flevation:	0.0 feet			Hea	vy Truci	rs: 8	.004	Grade Ad	justment	0.0
Ro	ad Elevation:	0.0 feet		İ	Lane Eq	uivalen	t Distan	ce (in	feet)		
	Road Grade:	0.0%		İ		Auto	s: 65	.422	,		
	I eft View:	-90.0 degrees			Mediu	m Truci	s: 65	286			
	Right View:	90.0 degrees			Hea	vy Truci	s: 65	.299			
FHWA Noise Mod	lel Calculations	;									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresi	nel	Barrier Att	en Ber	m Atte
Autos	70.20	-42.77		-1.8	35	-1.20		-4.73	0.0	000	0.0
Medium Trucks.	81.00	-53.83		-1.8	34	-1.20		-4.88	0.0	000	0.0
Heavy Trucks:	85.38	-57.07		-1.8	34	-1.20		-5.25	0.0	000	0.0
Inmitigated Nois			arrie	er atter	nuation)						
VehicleType	Leq Peak Hou			Leg E	vening		Night		Ldn		VEL
Autos:			2.3		19.7		16.	-	24.4		24
Medium Trucks.		-	1.7		17.9		18.		25.3	-	25
Heavy Trucks:	25.	3 2	3.6		16.5	i	17.	2	25.0	0	25
Vehicle Noise.	29.	4 2	7.4		23.0		22.	3	29.7	7	29
Centerline Distan	ce to Noise Co	ntour (in feet)									
				70	dBA	65	dBA	1 6	60 dBA	55	dBA

Thursday, August 8, 2019

	FH	WA-RD-77-108	HIGI	HWAY	NOISE PE	REDICT	ION M	ODEL			
	rio: E ne: Limonite A ent: e/o Harriso							: Home: : 11968	stead		
SITE	SPECIFIC IN	JPLIT DATA				N	IOISE	MODE	L INPUT	S	
Highway Data	01 2011 10 11				Site Con						
Average Daily	Traffic (Adt):	19.514 vehicl	es					Autos:	15		
,	r Percentage:	10%			Me	dium Tr	ucks (2	Axles):	15		
Peak	Hour Volume:	1,951 vehicle	es.		He	avy Tru	cks (3+	- Axles):	15		
V	ehicle Speed:	50 mph			Vehicle I						
	ane Distance:	78 feet				viix icleType	. 1	Day	Evening	Night	Daily
Site Data					VCII		Autos:	74.1%	-	15.6%	,
					1.4	, edium T		69.0%		23.8%	
	arrier Height:	0.0 feet 0.0				Heavy T		82.1%		13.9%	
Barrier Type (0-V	vali, 1-Berm): list. to Barrier:	76.0 feet								10.070	0.007
Centerline Dist		76.0 feet			Noise Sc				eet)		
Barrier Distance		0.0 feet				Auto		0.000			
Observer Height		5.0 feet				m Truck		2.297			
	Pad Flevation:	0.0 feet			Heav	ry Truck	s:	3.004	Grade Ad	justment	: 0.0
	ad Elevation:	0.0 feet			Lane Eq	uivalen	Dista	nce (in	feet)		
710	Road Grade:	0.0%				Auto	s: 6	5.422			
	Left View:	-90.0 degre	es		Mediu	m Truck	s: 6	5.286			
	Right View:	90.0 degre			Heav	y Truck	s: 6	5.299			
FHWA Noise Mod	lel Calculation	ıs									
VehicleType	REMEL	Traffic Flow		stance		Road	Fre		Barrier Att		m Atten
Autos.				-1.8		-1.20		-4.73		000	0.000
Medium Trucks				-1.8		-1.20		-4.88		000	0.000
Heavy Trucks	85.38	-14.17		-1.8	34	-1.20		-5.25	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barri	ier atte	nuation)						
VehicleType	Leq Peak Ho		,	Leq E	vening	Leq	Night		Ldn		NEL
Autos		7.3	65.2		62.6		59		67.3		67.7
Medium Trucks		7.0	64.6		60.8		-	.3	68.	_	68.4
Heavy Trucks		3.2	66.5		59.4		60		67.	_	68.1
Vehicle Noise	: 72	2.3	70.3		65.9		65	i.2	72.0	6	72.8
Centerline Distan	ce to Noise C	ontour (in fee	t)								
			L		dBA		dBA	(60 dBA		dBA
		_	Ldn:		13	_	44		525		131
		С	NEL:	1	17	2	53		545	1,	174

FH	WA-RD-77-108	HIGHWA	Y NOISE	PREDICT	ION MO	DEL			
Scenario: E Road Name: Limonite A Road Segment: e/o Sumne					t Name: Number:				
SITE SPECIFIC II	NPUT DATA				NOISE N	/ODE	L INPUTS	3	
Highway Data			Site Co	nditions	(Hard =	10, S	oft = 15)		
Average Daily Traffic (Adt):	21,010 vehicl	es				Autos.	15		
Peak Hour Percentage:	10%		Λ	1edium T	rucks (2 /	Axles).	15		
Peak Hour Volume:	2,101 vehicle	s	F	leavy Tru	icks (3+ /	Axles).	15		
Vehicle Speed:	50 mph		Vehicle	Miv					
Near/Far Lane Distance:	78 feet			ehicleTyp	e	Dav	Evening	Night	Daily
Site Data					Autos:	74.1%		15.6%	
Barrier Height:	0.0 feet			Medium 1	rucks:	69.0%	6 7.1%	23.8%	7.02%
Barrier Type (0-Wall, 1-Berm):	0.0			Heavy 1	rucks:	82.1%	3.9%	13.9%	3.33%
Centerline Dist. to Barrier:	76.0 feet								
Centerline Dist. to Observer:	76.0 feet		Noise	Source E		•	eet)		
Barrier Distance to Observer:	0.0 feet			Auto		000			
Observer Height (Above Pad):	5.0 feet			ium Truci		297	0		
Pad Elevation:	0.0 feet		He	avy Truci	rs: 8.	004	Grade Adj	ustment.	0.0
Road Elevation:	0.0 feet		Lane E	quivaler	t Distan	e (in	feet)		
Road Grade:	0.0%			Auto	s: 65.	422			
Left View:	-90.0 degre	es	Med	ium Truci	ks: 65.	286			
Right View:	90.0 degre	es	He	avy Truci	ks: 65.	299			
FHWA Noise Model Calculation	าร								
VehicleType REMEL	Traffic Flow	Distan	ce Fini	te Road	Fresn	el	Barrier Atte	en Ber	m Atten
Autos: 70.20	0.45		1.85	-1.20		-4.73	0.0	00	0.000
Medium Trucks: 81.00			1.84	-1.20		-4.88	0.0		0.000
Heavy Trucks: 85.38	-13.85		1.84	-1.20		-5.25	0.0	00	0.000
Unmitigated Noise Levels (with			tenuation)					
VehicleType Leq Peak Ho			q Evening		Night		Ldn		NEL
	7.6	65.5	63		60.0		67.6		68.0
	7.4	65.0	61		61.6		68.5		68.7
,	8.5 2.6	70.6	59 66		60.4		68.2 72.9		68.4 73.2
Centerline Distance to Noise C				-					
mio biotanto to Noise o	(100)		70 dBA	65	dBA		60 dBA	55	dBA
		I dn:	119		256		551	1	188
				-	.00		JJ 1	١,	100

		VA-RD-77-108	HIGH	WAY N	OISE P						
Scenari							Name:				
	e: Limonite Av					Job №	lumber:	11968			
Road Segmen	nt: e/o Hamner	Av.									
	SPECIFIC IN	PUT DATA							L INPUT	3	
Highway Data				5	Site Con	ditions	(Hard =	= 10, S	oft = 15)		
Average Daily	Traffic (Adt):	26,762 vehicle	es					Autos	: 15		
Peak Hour	Percentage:	10%			Me	dium Tr	ucks (2	Axles)	: 15		
Peak H	our Volume:	2,676 vehicle	s		He	avy Tru	cks (3+	Axles)	: 15		
Vel	hicle Speed:	45 mph		,	/ehicle	Miv					
Near/Far Lar	ne Distance:	78 feet		F.		icleType	,	Day	Evening	Night	Daily
Site Data							Autos:	74.19		15.6%	89.65%
Par	rier Height:	0.0 feet			М	edium T	rucks:	69.09	6 7.1%	23.8%	7.02%
Barrier Type (0-W		0.0				Heavy T	rucks:	82.19	6 3.9%	13.9%	3.33%
Centerline Dis		76.0 feet		L							
Centerline Dist.		76.0 feet		,	Voise S				eet)		
Barrier Distance i	to Observer:	0.0 feet				Auto		.000			
Observer Height (Above Pad):	5.0 feet				m Truck		.297			
	d Elevation:	0.0 feet			Hear	y Truck	s: 8	.004	Grade Ad	ustment	: 0.0
Roa	d Elevation:	0.0 feet		L	ane Eq	uivalen	t Distar	ice (in	feet)		
F	Road Grade:	0.0%				Auto	s: 65	.422			
	Left View:	-90.0 degree	es		Mediu	m Truck	s: 65	.286			
	Right View:	90.0 degree	es		Hear	y Truck	s: 65	.299			
FHWA Noise Mode	el Calculations										
VehicleType	REMEL	Traffic Flow	Dis	stance		Road	Fres		Barrier Att		m Atten
Autos:	68.46	1.96		-1.85	-	-1.20		-4.73	0.0		0.00
Medium Trucks:	79.45	-9.10		-1.84		-1.20		-4.88			0.000
Heavy Trucks:	84.25	-12.34		-1.84	1	-1.20		-5.25	0.0	000	0.000
Unmitigated Noise			barri	er atten	uation)						
,,	Leq Peak Hou		_	Leq Ev		Leq	Night		Ldn		NEL
Autos:	67.		65.3		62.7		59.	-	67.4		67.8
Medium Trucks:	67.	-	64.9		61.1		61.	-	68.5		68.7
Heavy Trucks:	68	-	67.2		60.1		60.	-	68.6		68.8
Vehicle Noise:	72	.7	70.7		66.2		65	.5	73.0)	73.2
Centerline Distanc	e to Noise Co	ntour (in feet)	70			10.4				10.4
			L	70 a			dBA		60 dBA		dBA
		_	Ldn:	12	-	_	58		556		197
			NFI:	12			68		577		242

	FHV	VA-RD-77-108	HIGH	WAY I	NOISE P	REDICT	ION M	ODEL			
	rio: E ne: Limonite Av nt: e/o Scholar							Homes 11968	stead		
SITE	SPECIFIC IN	PUT DATA							L INPUT	S	
Highway Data					Site Cor	nditions	(Hard:	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	24,015 vehicle	:S					Autos:	15		
Peak Hour	Percentage:	10%			Me	edium Tr	ucks (2	Axles):	15		
Peak F	lour Volume:	2,402 vehicles			He	eavy Tru	cks (3+	Axles):	15		
Ve	hicle Speed:	50 mph		f	Vehicle	Mix					
Near/Far La	ne Distance:	78 feet		ŀ		icleType	,	Dav	Evening	Night	Daily
Site Data							Autos:	74.1%	Ü	15.6	,
Ra	rrier Heiaht:	0.0 feet			M	ledium T	rucks:	69.0%	7.1%	23.89	% 7.02%
Barrier Type (0-W		0.0 1001				Heavy T	rucks:	82.1%	3.9%	13.9	% 3.33%
Centerline Di		76.0 feet		-	M-1 0			/! 6	41		
Centerline Dist.	to Observer:	76.0 feet		ŀ	Noise S	Auto		0.000	et)		
Barrier Distance	to Observer:	0.0 feet			14	Auto m Truck		2.297			
Observer Height	(Above Pad):	5.0 feet				m Truck vy Truck		3.004	Grade Ad	liuetma	nt: 0 0
P	ad Elevation:	0.0 feet			пеа	vy Truck	S. C	.004	Orade Ad	justino	n. 0.0
Ro	ad Elevation:	0.0 feet			Lane Eq	uivalen	t Distai	nce (in	feet)		
	Road Grade:	0.0%				Auto	s: 65	5.422			
	Left View:	-90.0 degree	s		Mediu	m Truck	s: 65	5.286			
	Right View:	90.0 degree	:S		Hea	vy Truck	s: 65	5.299			
FHWA Noise Mod	el Calculation:	s									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fres	inel	Barrier At	en B	erm Atten
Autos:		1.04		-1.8	-	-1.20		-4.73		000	0.000
Medium Trucks:		-10.03		-1.8		-1.20		-4.88		000	0.000
Heavy Trucks:	85.38	-13.27		-1.8	34	-1.20		-5.25	0.	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrie	er attei	nuation)						
VehicleType	Leq Peak Hou			Leq E	vening		Night		Ldn		CNEL
Autos:			66.1		63.5		60		68.	_	68.6
Medium Trucks:			35.5		61.7		62	-	69.		69.3
Heavy Trucks:			67.4		60.3		61		68.		69.0
Vehicle Noise:	73		71.2		66.8		66	.1	73.	5	73.7
Centerline Distant	ce to Noise Co	ontour (in feet)						-		1	
				70	dBA	65	dBA	1 6	60 dBA	1 5	5 dBA

Thursday, August 8, 2019

	FH\	WA-RD-77-108	HIGHV	VAY N	OISE PF	REDICTION	ON M	ODEL			
Road Na	rio: E+P me: Archibald A ent: n/o Chino A					Project i Job Ni		: Homes : 11968	stead		
SITE	SPECIFIC IN	IPUT DATA				N	OISE	MODE	L INPUT	S	
Highway Data				S	ite Con	ditions (Hard	= 10, Sc	oft = 15)		
Average Dail	/ Traffic (Adt):	27,339 vehicle	s					Autos:	15		
Peak Hou	r Percentage:	10%			Me	dium Tru	cks (2	Axles):	15		
Peak	Hour Volume:	2,734 vehicles			He	avy Truc	ks (3+	Axles):	15		
V	ehicle Speed:	55 mph			ehicle I	Niv					
Near/Far L	ane Distance:	93 feet				icleType		Dav	Evening	Night	Daily
Site Data					* 0.1.1		utos:	74.1%	-	15.6%	
	arrier Heiaht:	0.0 feet			Me	edium Tr		69.0%		23.8%	7.12%
Barrier Type (0-1		0.0 feet			F	leavy Tr	ucks:	82.1%	3.9%	13.9%	3.69%
	ist. to Barrier:	74.0 feet									
Centerline Dist		74.0 feet		٨	loise Sc	urce Ele			eet)		
Barrier Distance		0.0 feet				Autos		0.000			
Observer Height	(Above Pad):	5.0 feet				n Trucks		2.297	0		
	Pad Elevation:	0.0 feet			Heav	y Trucks	: 8	3.004	Grade Ad	justment	0.0
Re	oad Elevation:	0.0 feet		L	ane Equ	uivalent	Dista	nce (in	feet)		
	Road Grade:	0.0%				Autos	: 5	7.782			
	Left View:	-90.0 degree	s		Mediur	n Trucks	: 5	7.629			
	Right View:	90.0 degree	S		Heav	y Trucks	: 5	7.644			
FHWA Noise Mod	del Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista		Finite		Fre		Barrier Att		m Atten
Autos		1.16		-1.05		-1.20		-4.73		000	0.000
Medium Trucks				-1.03		-1.20		-4.88		000	0.000
Heavy Trucks	: 86.40	-12.67		-1.03		-1.20		-5.25	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and I	barrier	atteni	ıation)						
VehicleType	Leq Peak Hou	ır Leq Day	I	Leq Ev	ening	Leq N	Vight		Ldn		VEL
Autos			6.88		66.1		63		70.		71.1
Medium Trucks			0.88		64.1		64		71.	-	71.7
Heavy Trucks			89.8		62.7		63		71.:		71.4
Vehicle Noise	: 75	5.6	73.6		69.3		68	.5	75.	9	76.2
Centerline Distar	ice to Noise Co	ontour (in feet)									
				70 d		65 c		(60 dBA		dBA
		-	Ldn:	18		39			855		842
		CN	IEL:	19	1	41	2		888	1,	913

Thursday, August 8, 2019

	FH\	WA-RD-77-108	HIGHV	VAY N	IOISE PI	REDICT	ION MO	DEL			
Road Nai	rio: E+P me: Archibald A ent: s/o Chino A						t Name: lumber:		stead		
SITE	SPECIFIC IN	IPUT DATA				١	IOISE	MODE	L INPUT	S	
Highway Data				5	Site Con	nditions	(Hard =	: 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	24,650 vehicle	es					Autos:	15		
Peak Hou	r Percentage:	10%			Me	edium Tr	ucks (2	Axles):	15		
Peak	Hour Volume:	2,465 vehicle	S		He	eavy Tru	cks (3+	Axles):	15		
V	ehicle Speed:	55 mph		-	Vehicle	Miv					
Near/Far L	ane Distance:	93 feet		- 1		icleType		Dav	Evening	Night	Daily
Site Data							Autos:	74.1%		15.6%	
D.	arrier Height:	0.0 feet			М	ledium T	rucks:	69.0%	7.1%	23.8%	7.13%
Barrier Type (0-V		0.0 1661				Heavy T	rucks:	82.1%	3.9%	13.9%	3.73%
	ist. to Barrier:	74.0 feet		١.							
Centerline Dist	to Observer:	74.0 feet			Voise S				eet)		
Barrier Distance	to Observer:	0.0 feet				Auto		.000			
Observer Height	(Above Pad):	5.0 feet				m Truck		.297	Crada Ad	li rotmon	4 0 0
	Pad Elevation:	0.0 feet			Hear	vy Truck	:s: 8	.004	Grade Ad	justmen	0.0
Ro	ad Elevation:	0.0 feet		I	Lane Eq	uivalen	t Distar	ce (in	feet)		
	Road Grade:	0.0%				Auto	s: 57	.782			
	Left View:	-90.0 degree	es		Mediu	m Truck	s: 57	.629			
	Right View:	90.0 degree	es		Hear	vy Truck	s: 57	.644			
FHWA Noise Mod	lel Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista			Road	Fres		Barrier Att		rm Atten
Autos		0.71		-1.0	-	-1.20		-4.73		000	0.000
Medium Trucks				-1.03	-	-1.20		-4.88		000	0.000
Heavy Trucks	: 86.40	-13.08		-1.03	3	-1.20		-5.25	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier	atten	uation)						
VehicleType	Leq Peak Hou			Leq E	vening .	Leq	Night		Ldn		NEL
Autos			68.2		65.6		62.		70.3		70.6
Medium Trucks			67.5		63.7		64.		71.	-	71.3
Heavy Trucks			69.4		62.3		63.		70.8		71.0
Vehicle Noise		5.2	73.2		68.8		68.	1	75.	0	75.8
Centerline Distan	ice to Noise C	ontour (in feet)	70 c	4DA	65	dBA	т.	60 dBA	56	dBA
			I dn:	17			71	1 ,	800		723
		0	NEL:	17	_	-	85		831		789
		C.		- 17	-	J			551		. 55

	FHW.	A-RD-77-108	HIGHW	AY NOISE P	REDICT	ION MO	DEL			
	o: E+P e: Archibald Av at: s/o Ontario F					Name: I lumber:		tead		
SITE S	SPECIFIC INF	PUT DATA				IOISE N	/ODFI	L INPUTS	3	
Highway Data				Site Cor						
Average Daily	Traffic (Adt): 2	6,349 vehicle	s				Autos:	15		
Peak Hour	Percentage:	10%		Me	edium Tr	ucks (2 A	Axles):	15		
Peak H	our Volume: 2	2,635 vehicles		He	avy Tru	cks (3+ A	Axles):	15		
Vel	nicle Speed:	55 mph		Vehicle	Miv					
Near/Far Lar	ne Distance:	93 feet			nicleType		Dav	Evening	Night	Daily
Site Data							74.1%	10.3%	15.6%	/
Rar	rier Height:	0.0 feet		. A	ledium T	rucks:	69.0%	7.1%	23.8%	7.089
Barrier Type (0-W		0.0			Heavy T	rucks:	82.1%	3.9%	13.9%	3.689
Centerline Dis		74.0 feet		Noise S	ouroo E	lovestion	o (in fo	.041		
Centerline Dist.	to Observer:	74.0 feet		Noise 3	Auto		000	ei)		
Barrier Distance t	to Observer:	0.0 feet		Modis	Auto ım Truck		297			
Observer Height (Above Pad):	5.0 feet			vy Truck		004	Grade Ad	iustmont	
Pa	d Elevation:	0.0 feet		пеа	vy Huck	s. o.t	004	Grade Au	usunent	0.0
Roa	d Elevation:	0.0 feet		Lane Eq	uivalen	Distant	ce (in f	eet)		
F	Road Grade:	0.0%			Auto	s: 57.	782			
	Left View:	-90.0 degree	S	Mediu	ım Truck	s: 57.0	629			
	Right View:	90.0 degree	s	Hea	vy Truck	s: 57.0	644			
FHWA Noise Mode										
VehicleType		Traffic Flow	Dista		Road	Fresn		Barrier Atte		m Atten
Autos:	71.78	1.00		-1.05	-1.20		-4.73	0.0		0.00
Medium Trucks:	82.40	-10.00		-1.03	-1.20		-4.88	0.0		0.00
Heavy Trucks:	86.40	-12.84		-1.03	-1.20		-5.25	0.0	000	0.00
Unmitigated Noise	•								,	
	Leq Peak Hour			eq Evening		Night		Ldn		VEL
Autos:	70.5		88.4	65.9		62.9		70.6		70.
Medium Trucks:	70.2	-	67.8	63.9		64.4		71.4		71.
Heavy Trucks:	71.3 75.5		73.5	62.5		63.2		71.1 75.8		71. 76.
	/5.5	,	3.5	69.1		08.3)	75.8)	76.
Vehicle Noise:										
Vehicle Noise: Centerline Distanc	e to Noise Cor	ntour (in feet)		70 dB4	65	dRΔ	6	n dBA	55	dRΔ
	e to Noise Cor	, ,	_dn:	70 dBA 179		dBA 87	6	0 dBA 833		dBA 794

	FH\	VA-RD-77-108	HIGHV	VAY NO	DISE PF	REDICT	ION MO	DEL			
Scenario Road Namo Road Segmen	e: Archibald A						Name: lumber:		stead		
SITE S	SPECIFIC IN	IPUT DATA				١	IOISE I	ИODE	L INPUT	S	
Highway Data				Si	ite Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily T Peak Hour I Peak He	. ,	23,033 vehicle 10% 2,303 vehicle					ucks (2 . cks (3+ .		15		
Vel	nicle Speed:	55 mph		V/	ehicle I	Niv					
Near/Far Lar	ne Distance:	93 feet				cleType	,	Dav	Evening	Night	Daily
Site Data					* 0111		Autos:	74.1%		15.6%	
	rier Heiaht:	0.0 feet			Ме	edium T	rucks:	69.0%	7.1%	23.8%	6 7.13%
Barrier Type (0-Wa	all, 1-Berm):	0.0			F	leavy T	rucks:	82.1%	3.9%	13.9%	6 3.75%
Centerline Dis		74.0 feet		N	oise So	urce E	levation	s (in fe	eet)		
Centerline Dist. t		74.0 feet				Auto	s: 0.	000			
Barrier Distance t		0.0 feet			Mediur	n Truck	s: 2.	297			
Observer Height (/		5.0 feet			Heav	v Truck	s: 8.	004	Grade Ad	justmen	t: 0.0
	d Elevation:	0.0 feet		-							
	d Elevation:	0.0 feet		Li	ane Equ		t Distan		reet)		
F	Road Grade:	0.0%				Auto		782			
	Left View: Right View:	-90.0 degree				n Truck y Truck		629 644			
FHWA Noise Mode	l Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresi	nel	Barrier Att	en Be	rm Atten
Autos:	71.78	0.41		-1.05		-1.20		-4.73	0.0	000	0.00
Medium Trucks:	82.40	-10.56		-1.03		-1.20		-4.88	0.0	000	0.00
Heavy Trucks:	86.40	-13.34		-1.03		-1.20		-5.25	0.0	000	0.00
Unmitigated Noise	Levels (with	out Topo and	barrier	attenu	ation)						
VehicleType	Leq Peak Hou	ır Leq Day	/	Leq Eve	ening	Leq	Night		Ldn	C	CNEL
Autos:	69		67.9		65.3		62.3	-	70.0	-	70.3
Medium Trucks:	69		67.2		63.4		63.9		70.8	-	71.0
Heavy Trucks:	70		69.2		62.0		62.	7	70.6		70.
Vehicle Noise:	74	.0	72.9		68.5		67.	3	75.2	2	75.
Centerline Distanc	e to Noise Co	ontour (in feet)	70 dE	24	65	dBA	_	60 dBA		5 dBA
			Ldn:	165			ава 55		766		.649
		_	Lan: NFI:	171			55 69		795		,713
		C	IVEL.	171		3	uð		1 30	1	,110

Thursday, August 8, 2019

	FH\	WA-RD-77-10	B HIG	HWAY	NOISE PI	REDICT	ION M	ODEL			
Road Nan	rio: E+P ne: Archibald A nt: s/o Eucalyp							: Home:	stead		
SITE	SPECIFIC IN	JPUT DATA				N	IOISE	MODE	L INPUT	S	
Highway Data					Site Con						
Average Daily	Traffic (Adt):	25.564 vehic	les					Autos:	15		
,	Percentage:	10%			Me	dium Tri	ucks (2	Axles):	15		
Peak F	lour Volume:	2,556 vehicle	es		He	avy Truc	cks (3+	- Axles):	15		
Ve	hicle Speed:	55 mph			Vehicle						
	ne Distance:	93 feet				viix icleType	. 1	Dav	Evening	Night	Daily
Site Data					Veri		Autos:	74.1%	-	15.6%	,
					М	edium Ti		69.0%		23.8%	
	rrier Height:	0.0 feet				Heavy Ti		82.1%		13.9%	
Barrier Type (0-W		0.0								10.070	0.007
Centerline Di Centerline Dist.		74.0 feet 74.0 feet			Noise So	ource El	evatio	ns (in f	eet)		
Barrier Distance		0.0 feet				Auto	s: (0.000			
Observer Height		5.0 feet			Mediu	m Truck	s: :	2.297			
	ad Flevation:	0.0 feet			Heav	y Truck	s: 8	3.004	Grade Ad	justment	: 0.0
	ad Elevation:	0.0 feet			Lane Eq	uivalent	Dista	nce (in	feet)		
	Road Grade:	0.0%				Auto		7.782			
	Left View:	-90.0 degre	es		Mediu	m Truck		7.629			
	Right View:	90.0 degre			Heav	y Truck	s: 5	7.644			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Di	stance	Finite	Road	Fre	snel	Barrier Att	en Ber	m Atten
Autos:	71.78	0.87	7	-1.	05	-1.20		-4.73	0.0	000	0.000
Medium Trucks:	82.40			-1.		-1.20		-4.88	0.0	000	0.000
Heavy Trucks:	86.40	-12.96	3	-1.0	03	-1.20		-5.25	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	l barri	ier atte	nuation)						
VehicleType	Leq Peak Hou	ur Leq Da	У	Leq I	Evening	Leq	Night		Ldn		NEL
Autos:	70		68.3		65.8		62		70.4		70.8
Medium Trucks:	70		67.6		63.8		64		71.	_	71.4
Heavy Trucks:	71		69.6		62.4		63		70.9		71.1
Vehicle Noise:	75	5.4	73.3		69.0		68	1.2	75.0	6	75.9
Centerline Distan	ce to Noise Co	ontour (in fee	t)								
			Į		dBA		dBA	(60 dBA		dBA
			Ldn:		76	-	79		817	,	759
		C	NEL:	1	183	39	94		848	1,	827

	FHV	WA-RD-77-108	HIGHW	VAY NC	DISE P	REDICT	ION MC	DEL			
Road Nan	rio: E+P ne: Archibald A ent: s/o Merrill A						t Name: lumber:		stead		
SITE	SPECIFIC IN	IPUT DATA							L INPUT	S	
Highway Data				Si	ite Con	ditions	(Hard =	: 10, S	oft = 15)		
Average Daily	Traffic (Adt):	27,338 vehicle	es					Autos:	15		
Peak Hour	Percentage:	10%			Me	edium Tr	ucks (2	Axles).	15		
Peak H	lour Volume:	2,734 vehicles	S		He	avy Tru	cks (3+	Axles).	15		
Ve	ehicle Speed:	55 mph		V/a	ehicle	Miv					
Near/Far La	ne Distance:	93 feet				icleType		Day	Evening	Night	Daily
Site Data					*0//		Autos:	74.1%		15.6	
Pa	rrier Height:	0.0 feet			М	edium T	rucks:	69.0%	6 7.1%	23.89	% 7.03%
Barrier Type (0-W		0.0				Heavy T	rucks:	82.1%	3.9%	13.99	% 3.65%
Centerline Di		74.0 feet									
Centerline Dist.		74.0 feet		No	oise S	ource E			eet)		
Barrier Distance	to Observer:	0.0 feet				Auto		.000			
Observer Height	(Above Pad):	5.0 feet				m Truck		.297			
	ad Elevation:	0.0 feet			Hear	y Truck	s: 8	.004	Grade Ad	justmei	nt: 0.0
	ad Elevation:	0.0 feet		Lá	ne Eq	uivalen	t Distan	ce (in	feet)		
	Road Grade:	0.0%				Auto	s: 57	.782			
	Left View:	-90.0 degree	es		Mediu	m Truck	s: 57	.629			
	Right View:	90.0 degree			Hear	y Truck	s: 57	.644			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fres		Barrier Att	en B	erm Atten
Autos:		1.17		-1.05		-1.20		-4.73		000	0.000
Medium Trucks:		-9.87		-1.03		-1.20		-4.88		000	0.000
Heavy Trucks:	86.40	-12.72		-1.03		-1.20		-5.25	0.0	000	0.000
Unmitigated Noise	e Levels (with	out Topo and	barrier	attenu	ation)						
VehicleType	Leq Peak Hou	ır Leq Day	/ L	Leq Eve	ening	Leq	Night		Ldn	(CNEL
Autos:	70	1.7	68.6		66.1		63.	1	70.	7	71.1
Medium Trucks:	70	.3	67.9		64.1		64.	5	71.	5	71.7
Heavy Trucks:	71	.4	69.8		62.6		63.	3	71.2	2	71.3
Vehicle Noise:	75	i.6	73.6		69.3		68.	5	75.9	9	76.2
Centerline Distant	ce to Noise Co	ontour (in feet)								
				70 dE			dBA	(60 dBA	_	5 dBA
			Ldn:	183		-	95		850		1,832
		C	NEL:	190		4	10		883		1,903

	FHW	A-RD-77-108	HIGH	WAY	NOISE P	REDICT	ION MC	DEL			
	o: E+P e: Archibald Av nt: s/o 65th St.	1.					Name: lumber:		stead		
SITE S	SPECIFIC IN	PUT DATA				Ν	IOISE I	MODE	L INPUT	S	
Highway Data					Site Cor	nditions	(Hard =	: 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	29,691 vehicle	es					Autos:	15		
Peak Hour	Percentage:	10%			Me	edium Tr	ucks (2	Axles):	15		
Peak H	our Volume:	2,969 vehicles	3		He	avy Tru	cks (3+	Axles):	15		
Vel	hicle Speed:	50 mph		1	Vehicle	Miv					
Near/Far Lar	ne Distance:	78 feet		-		icleType	,	Dav	Evening	Night	Daily
Site Data							Autos:	74.1%		15.6%	,
Par	rier Height:	0.0 feet			M	ledium T	rucks:	69.0%	7.1%	23.8%	6.96%
Barrier Type (0-W		0.0				Heavy T	rucks:	82.1%	3.9%	13.9%	3.30%
Centerline Dis		76.0 feet		-							
Centerline Dist.		76.0 feet		-	Noise S				eet)		
Barrier Distance t	to Observer:	0.0 feet			1.4	Auto		.000 297			
Observer Height (Above Pad):	5.0 feet				m Truck		004	Grade Ad	li rotmon	
Pa	nd Elevation:	0.0 feet			неа	vy Truck	S. 8.	.004	Grade Ad,	justrnern	. 0.0
Roa	d Elevation:	0.0 feet			Lane Eq	uivalent	t Distan	ce (in :	feet)		
F	Road Grade:	0.0%				Auto	s: 65	.422			
	Left View:	-90.0 degree	es		Mediu	m Truck	s: 65	.286			
	Right View:	90.0 degree	es		Hea	vy Truck	s: 65	.299			
FHWA Noise Mode	l Calculations										
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresi	nel	Barrier Att	en Bei	rm Atten
Autos:	70.20	1.96		-1.8		-1.20		-4.73		000	0.00
Medium Trucks:	81.00	-9.14		-1.8		-1.20		-4.88		000	0.000
Heavy Trucks:	85.38	-12.38		-1.8	34	-1.20		-5.25	0.0	000	0.00
Unmitigated Noise	Levels (witho	ut Topo and	barrie	er atte	nuation)						
	Leq Peak Houi			Leq E	vening	,	Night		Ldn		NEL
Autos:	69.		67.0		64.5		61.	-	69.1		69.
Medium Trucks:	68.	-	66.4		62.6		63.		70.0	-	70.2
Heavy Trucks: Vehicle Noise:	70. 74.	•	68.3 72.1		61.1 67.7		61. 67.	_	69.7 74.4		69.8 74.0
					07.7		07.	U	14.4	•	14.
Centerline Distanc	e to Noise Co	ntour (in feet))	70	dBA	65	dBA		60 dBA	FE	dBA
			Ldn:		49		ава 21		692		490
			VEL:		49 55	-	33		718		547
		CI	v_L.		00	3.	00		, 10	1,	1+0,

	FH\	WA-RD-77-108	HIGHW	AY NO	DISE PREDIC	TION MOI	EL		
Scenari Road Nam Road Segmer	e: Archibald A					t Name: H Number: 1	lomestead 1968		
	SPECIFIC IN	IPUT DATA					ODEL INPU	TS	
Highway Data				Si	te Condition:	(Hard =	10, Soft = 15)		
	Traffic (Adt): Percentage: lour Volume:	26,151 vehicle 10% 2.615 vehicles				rucks (2 A ucks (3+ A	,		
	hicle Speed:	50 mph	•			JUNG (OT A	x163). 13		
Near/Far Lai		78 feet		V	ehicle Mix				1
	ne Distance.	70 1001			VehicleTyp		Day Evening		
Site Data							74.1% 10.3%		
Bar	rier Height:	0.0 feet			Medium		69.0% 7.1%		
Barrier Type (0-W		0.0			Heavy	I rucks:	32.1% 3.9%	13.9	% 3.44%
Centerline Dis		76.0 feet		N	oise Source L	levations	(in feet)		
Centerline Dist.		76.0 feet			Aut	os: 0.0	00		
Barrier Distance		0.0 feet			Medium Truc	ks: 2.2	97		
Observer Height (,	5.0 feet			Heavy Truc	ks: 8.0	04 Grade A	djustme	nt: 0.0
	ad Elevation: ad Elevation:	0.0 feet		1.	ane Equivaler	nt Dietano	o (in foot)		
	Road Grade:	0.0 feet 0.0%		-	Aut		. ,		
,	Left View:	-90.0 degree			Medium Truc				
	Right View:	90.0 degree			Heavy Truc				
FHWA Noise Mode	el Calculation	s							
VehicleType	REMEL	Traffic Flow	Distai	nce	Finite Road	Fresn	el Barrier A	tten B	erm Atten
Autos:	70.20	1.40		-1.85	-1.20		4.73 0	.000	0.000
Medium Trucks:	81.00	-9.67		-1.84	-1.20		4.88 0	.000	0.000
Heavy Trucks:	85.38			-1.84	-1.20		5.25 0	.000	0.000
Unmitigated Noise			_						
	Leq Peak Hou			eq Eve		g Night	Ldn		CNEL
Autos:			66.5		63.9	60.9	68		68.9
Medium Trucks:			65.9		62.0	62.5	69		69.7
Heavy Trucks: Vehicle Noise:			67.9 71.6		67.2	61.5 66.5		1.3	69.5 74.1
Centerline Distance					07.2	00.0	73	1.9	74.1
Cernernile Distanc	e to Noise Co	untour (In reet)		70 dE	BA 64	dBA	60 dBA	-	5 dBA
			l dn:	138		298	642		1.383
			VEL:	138 298 642 1,383 144 309 666 1,436			,		
		0,	-	144 309 666					,

Thursday, August 8, 2019

	FH\	WA-RD-77-108	HIGI	YAWH	NOISE PE	REDICT	ION M	ODEL			
Scena	rio: E+P					Project	Name	: Homes	stead		
Road Nan	ne: Kimball Av.					Job N	umber	: 11968			
Road Segme	nt: w/o Hellma	ın Av.									
	SPECIFIC IN	IPUT DATA							L INPUT	S	
Highway Data					Site Con	ditions	(Hard	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	14,499 vehicl	es					Autos:	15		
Peak Hour	Percentage:	10%			Me	dium Tri	ucks (2	Axles):	15		
Peak I	lour Volume:	1,450 vehicle	s		He	avy Trud	cks (3+	Axles):	15		
Ve	ehicle Speed:	50 mph			Vehicle I	Miv					
Near/Far La	ane Distance:	51 feet				icleType		Dav	Evening	Night	Dailv
Site Data							Autos:	74.1%		15.6%	. ,
D-	rrier Height:	0.0 feet			M	edium T	rucks:	69.0%	7.1%	23.8%	7.00%
Barrier Type (0-V		0.0 1661			F	leavy Ti	rucks:	82.1%	3.9%	13.9%	3.61%
,, ,	ist. to Barrier:	49.0 feet									
Centerline Dist.	to Observer:	49.0 feet			Noise Sc				eet)		
Barrier Distance	to Observer:	0.0 feet				Auto		0.000			
Observer Height	(Above Pad):	5.0 feet				n Truck		2.297	Crada As	livotmon	
	ad Elevation:	0.0 feet			Heav	y Truck	S	B.004	Grade Ad	ijustment	. 0.0
Ro	ad Elevation:	0.0 feet			Lane Eq	uivalent	Dista	nce (in	feet)		
	Road Grade:	0.0%				Auto	s: 4	2.140			
	Left View:	-90.0 degre	es		Mediu	n Truck	s: 4	1.929			
	Right View:	90.0 degre	es		Heav	y Truck	s: 4	1.950			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Di	stance	Finite	Road	Fre	snel	Barrier At	ten Bei	m Atten
Autos:	70.20	-1.17		1.0	01	-1.20		-4.64	0.	000	0.000
Medium Trucks:	81.00	-12.23		1.0	04	-1.20		-4.87	0.	000	0.000
Heavy Trucks:	85.38	-15.10		1.0	04	-1.20		-5.44	0.	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barri	er atte	nuation)						
VehicleType	Leq Peak Hou	ur Leq Daj	/	Leq E	vening	Leq	Night		Ldn	С	NEL
Autos:	68	3.8	66.8		64.2		61	1.2	68.	9	69.2
Medium Trucks:	68	3.6	66.2		62.4		62	2.8	69.	8	70.0
Heavy Trucks:).1	68.5		61.3		62	2.0	69.	8	70.0
Vehicle Noise:	74	1.0	72.0		67.6		66	6.9	74.	3	74.5
Centerline Distan	ce to Noise Co	ontour (in feet)								
			Į		dBA		dBA	(60 dBA		dBA
			Ldn:		95	_	04		440		147
		С	NEL:	!	98	2	12		456	9	183

FI	HWA-RD-77-10	8 HIGHW	AY NO	ISE PRI	EDICTI	ом мо	DEL			
Scenario: E+P Road Name: Limonite Road Segment: e/o Hellm					Project Job No	Name: I				
SITE SPECIFIC	INPUT DATA				N	OISE N	/ODE	L INPUT	S	
Highway Data			Sit	e Cond	litions (Hard =	10, S	oft = 15)		
Average Daily Traffic (Adt):	469 vehic	eles					Autos	: 15		
Peak Hour Percentage:	10%			Med	lium Tru	cks (2 /	Axles)	: 15		
Peak Hour Volume:	47 vehicl	es		Hea	vy Truc	ks (3+ /	Axles)	: 15		
Vehicle Speed:	50 mph		V/o	hicle M	liv					
Near/Far Lane Distance:	78 feet		70		leType		Dav	Evening	Night	Daily
Site Data							74.19			6 83.35%
Barrier Height:	0.0 feet			Med	dium Tr	ucks:	69.09	6 7.1%	23.89	6 5.13%
Barrier Type (0-Wall, 1-Berm).				H	eavy Tr	ucks:	82.19	6 3.9%	13.99	6 11.52%
Centerline Dist. to Barrier.			-							
Centerline Dist. to Observer.	76.0 feet		No	ise Sou				eet)		
Barrier Distance to Observer.	0.0 feet				Autos		000			
Observer Height (Above Pad).	5.0 feet			Medium			297	0		
Pad Elevation.				Heavy	Trucks	: 8.	004	Grade Ad	ustmer	it: 0.0
Road Elevation.	0.0 feet		La	ne Equ	ivalent	Distan	ce (in	feet)		
Road Grade.	0.0%				Autos	: 65.	422			
Left View.	-90.0 dean	ees		Medium	Trucks	: 65.	286			
Right View.	90.0 degr	ees		Heavy	Trucks	65.	299			
FHWA Noise Model Calculation	ons									
VehicleType REMEL	Traffic Flow	Distar	се	Finite F	Road	Fresn	iel	Barrier Att	en Be	erm Atten
Autos: 70.2	20 -16.3	7	-1.85		-1.20		-4.73	0.0	000	0.000
Medium Trucks: 81.0	00 -28.4	8	-1.84		-1.20		-4.88	0.0	000	0.000
Heavy Trucks: 85.3	38 -24.9	7	-1.84		-1.20		-5.25	0.0	000	0.000
Unmitigated Noise Levels (wi			ttenua	tion)						
VehicleType Leq Peak H			eq Ever		Leq I			Ldn		CNEL
	50.8	48.7		46.1		43.2		50.8		51.2
	49.5	47.1		43.2		43.7		50.7		50.9
	57.4 58.8	55.7 57.0		48.6 51.3		49.3		57.1 58.7		57.3 58.9
Centerline Distance to Noise				00		31.1		30.1		00.0
Contentine Distance to Noise	oomour (III lee	,	70 dB.	Α	65 c	IBA		60 dBA	5	5 dBA
		Ldn:	13		29	9		63		135

	FHW	/A-RD-77-108	HIGH	IWAY N	OISE P	REDICT	ION MO	DDEL			
Scenario	o: E+P					Project	Name:	Home	stead		
	e: Limonite Av					Job №	lumber:	11968			
Road Segmen	t: e/o Harrisor	ı Av.									
	SPECIFIC IN	PUT DATA							L INPUTS	3	
Highway Data				S	Site Con	ditions	(Hard =	= 10, S	oft = 15)		
Average Daily	Traffic (Adt):	20,162 vehicle	es					Autos.	15		
Peak Hour I	Percentage:	10%			Me	edium Tr	ucks (2	Axles).	15		
Peak He	our Volume:	2,016 vehicles	S		He	avy Tru	cks (3+	Axles).	15		
Vel	nicle Speed:	50 mph			/ehicle	Miv					
Near/Far Lar	ne Distance:	78 feet		-		icleType	,	Day	Evening	Night	Daily
Site Data							Autos:	74.19	6 10.3%	15.6%	89.21%
Par	rier Height:	0.0 feet			М	edium T	rucks:	69.0%	6 7.1%	23.8%	7.03%
Barrier Type (0-Wa		0.0				Heavy T	rucks:	82.1%	3.9%	13.9%	3.76%
Centerline Dis		76.0 feet		-	/- / O			/! 6	41		
Centerline Dist. t	to Observer:	76.0 feet			loise S				eet)		
Barrier Distance t	o Observer:	0.0 feet				Auto		.000			
Observer Height ()	Above Pad):	5.0 feet				m Truck		.297	0		
	d Elevation:	0.0 feet			Hear	y Truck	s: 8	.004	Grade Adj	ustmeni	r: U.U
Roa	d Elevation:	0.0 feet		L	ane Eq	uivalen	t Distar	ice (in	feet)		
F	Road Grade:	0.0%				Auto	s: 65	.422			
	Left View:	-90.0 degree	es		Mediu	m Truck	s: 65	.286			
	Right View:	90.0 degree	es		Hear	y Truck	s: 65	.299			
FHWA Noise Mode	l Calculations	;									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fres	nel	Barrier Atte	en Bei	rm Atten
Autos:	70.20	0.25		-1.85		-1.20		-4.73	0.0	00	0.000
Medium Trucks:	81.00	-10.78		-1.84		-1.20		-4.88	0.0	00	0.000
Heavy Trucks:	85.38	-13.50		-1.84	1	-1.20		-5.25	0.0	00	0.000
Unmitigated Noise	Levels (with	out Topo and	barrie	er atteni	uation)						
,,	Leq Peak Hou		_	Leq Ev			Night		Ldn		NEL
Autos:	67.	-	65.3		62.8		59.	-	67.4		67.8
Medium Trucks:	67.	-	64.8		60.9		61.		68.4		68.6
Heavy Trucks:	68.	-	67.2		60.0		60.		68.6		68.7
Vehicle Noise:	72.	6	70.7		66.2		65	5	72.9)	73.2
Centerline Distanc	e to Noise Co	ntour (in feet)								
			L	70 d			dBA	- (60 dBA		dBA
			Ldn:	11	9	2	56		552	1,	188
		_	NFI:	12			66		572		.233

	FHV	VA-RD-77-108	HIGH	HWAY N	IOISE P	REDICTIO	N MOI	DEL			
Road Nan	rio: E+P ne: Limonite Av ent: e/o Archibal					Project N Job Nu			stead		
	SPECIFIC IN	PUT DATA							L INPUTS	S	
Highway Data					Site Cor	nditions (F	Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	18,158 vehicle	es				,	Autos:	15		
Peak Hour	Percentage:	10%			Me	edium Truc	cks (2 A	xles):	15		
Peak I	lour Volume:	1,816 vehicle	s		He	avy Truck	is (3+ A	xles):	15		
Ve	ehicle Speed:	50 mph			Vehicle	Miv					
Near/Far La	ane Distance:	78 feet		F'		icleType		Day	Evening	Night	Daily
Site Data								74.1%	-	15.6%	
D-	rrier Height:	0.0 feet			М	edium Tru	icks:	69.0%	7.1%	23.8%	7.02%
Barrier Type (0-V		0.0 1001				Heavy Tru	icks:	82.1%	3.9%	13.9%	3.80%
	ist. to Barrier:	76.0 feet									
Centerline Dist.	to Observer:	76.0 feet		- /	Noise S	ource Ele		•	eet)		
Barrier Distance	to Observer:	0.0 feet				Autos:					
Observer Height	(Above Pad):	5.0 feet				m Trucks:		297	Grade Ad	i i i o 4 m o m	4 0 0
P	ad Elevation:	0.0 feet			неа	vy Trucks:	8.0	004	Grade Au	usunen	. 0.0
Ro	ad Elevation:	0.0 feet		I	Lane Eq	uivalent l	Distand	e (in	feet)		
	Road Grade:	0.0%				Autos:	65.4	122			
	Left View:	-90.0 degree	es		Mediu	m Trucks:	65.2	286			
	Right View:	90.0 degree	es		Hear	vy Trucks:	65.2	299			
FHWA Noise Mod	el Calculations	S									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresn		Barrier Att	en Be	rm Atten
Autos:		-0.20		-1.8	-	-1.20		-4.73		000	0.000
Medium Trucks:	81.00	-11.24		-1.84		-1.20		-4.88		000	0.000
Heavy Trucks:	85.38	-13.91		-1.84	4	-1.20		-5.25	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barri	er atten	uation)						
VehicleType	Leq Peak Hou	r Leq Day	/	Leg E	vening	Leq N	light		Ldn		NEL
Autos:			64.9		62.3		59.3		67.0		67.3
Medium Trucks:			64.3		60.5		61.0		67.9		68.1
Heavy Trucks:			66.8		59.6		60.3		68.2		68.3
Vehicle Noise:	72	.2	70.2		65.7		65.0		72.5	5	72.7
Centerline Distan	ce to Noise Co	ntour (in feet)			ı					
				70 c	3BA	65 di	BA	(60 dBA	55	dBA

Thursday, August 8, 2019

	FH	WA-RD-77-108	HIGH	WAY I	NOISE PE	REDICT	ION M	ODEL			
Road Na	ario: E+P me: Limonite A ent: e/o Sumne							Home: 11968	stead		
SITE	SPECIFIC IN	IDIIT DATA				N	IOISE	MODE	L INPUT	S	
Highway Data	SI ECII IC II	WI OI BAIA			Site Con						
Average Dail	y Traffic (Adt):	21.624 vehicle	25					Autos	15		
	ır Percentage:	10%			Me	dium Tr	ucks (2	Axles)	15		
	Hour Volume:	2.162 vehicle	s			avy Tru					
	'ehicle Speed:	50 mph		-				/			
	ane Distance:	78 feet			Vehicle I			D	I Constant	Mintel	D-16.
Site Data					ven	icleType	Autos:	Day 74.19	Evening 10.3%	Night 15.6%	Daily 89.22%
						edium T		69.09		23.8%	
	arrier Height:	0.0 feet				Heavy T				13.9%	
Barrier Type (0-		0.0			,	icavy i	rucks.	02.17	3.570	13.576	3.7370
	Dist. to Barrier:	76.0 feet			Noise Sc	ource E	levatio	ns (in f	eet)		
Centerline Dis		76.0 feet				Auto	s: (0.000			
Barrier Distanc		0.0 feet			Mediu	m Truck	is: 2	2.297			
Observer Heigh	(Above Pad): Pad Flevation:	5.0 feet 0.0 feet			Heav	y Truck	s: 8	3.004	Grade Ad	justmen:	: 0.0
	oad Elevation:	0.0 feet		H	Lane Eq	uivalen	t Dista	nce (in	feet)		
Α.	Road Grade:	0.0 feet		ŀ	Larro Lq	Auto		5.422	1001)		
	I eft View:	-90.0 degree	20		Madiu	m Truck		5.286			
	Right View:	90.0 degree				y Truck		5.299			
FHWA Noise Mo	del Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fre	snel	Barrier Att	en Be	m Atten
Autos	: 70.20	0.56		-1.8	5	-1.20		-4.73	0.0	000	0.000
Medium Trucks	: 81.00	-10.47		-1.8	4	-1.20		-4.88	0.0	000	0.000
Heavy Trucks	: 85.38	-13.22		-1.8	4	-1.20		-5.25	0.0	000	0.000
Inmitigated Noi	se Levels (with	out Topo and	barrie	er atter	nuation)						
VehicleType	Leq Peak Ho	ur Leq Day	/	Leq E	vening	Leq	Night		Ldn	С	NEL
Autos	: 67	7.7	65.6		63.1		60	.1	67.	7	68.1
Medium Trucks	s: 67	7.5	65.1		61.2		61	.7	68.	7	68.9
Heavy Trucks	: 69).1	67.5		60.3		61	.0	68.8	В	69.0
Vehicle Noise	2: 72	2.9	71.0		66.5		65	.8	73.	2	73.4
Centerline Dista	nce to Noise C	ontour (in feet)								
-		-	T		dBA		dBA		60 dBA		dBA
			Ldn:		24		68		577		244
		C	NEL:	1	29	2	78		599	1,	291

	FH\	WA-RD-77-108	HIGHW	VAY N	OISE PI	REDICT	ION MO	DDEL			
Road Nar	rio: E+P me: Limonite Av ent: e/o Scholar						t Name: lumber:		stead		
SITE	SPECIFIC IN	IPUT DATA				١	NOISE	MODE	L INPUT	S	
Highway Data				5	Site Con	ditions	(Hard:	= 10, S	oft = 15)		
Average Daily	Traffic (Adt):	24,578 vehicle	es					Autos:	15		
Peak Hou	r Percentage:	10%			Me	edium Tr	ucks (2	Axles).	15		
Peak I	Hour Volume:	2,458 vehicles	8		He	avy Tru	cks (3+	Axles).	15		
V	ehicle Speed:	50 mph		,	/ehicle	Miv					
Near/Far La	ane Distance:	78 feet		Η,		icleType	9	Dav	Evening	Night	Daily
Site Data					1011		Autos:	74.1%		15.6%	
D.	arrier Height:	0.0 feet			М	edium T	rucks:	69.0%	7.1%	23.8%	7.05%
Barrier Type (0-V		0.0				Heavy T	rucks:	82.1%	3.9%	13.9%	3.69%
	ist to Barrier:	76.0 feet		L							
Centerline Dist	to Observer:	76.0 feet		,	Voise S				eet)		
Barrier Distance	to Observer:	0.0 feet				Auto		.000			
Observer Height	(Above Pad):	5.0 feet				m Truck		.297	0	r	
	Pad Elevation:	0.0 feet			Hear	y Truck	rs: 8	.004	Grade Ad	justmen	t: 0.0
Ro	ad Elevation:	0.0 feet		L	ane Eq	uivalen	t Distai	nce (in	feet)		
	Road Grade:	0.0%				Auto	s: 65	.422			
	Left View:	-90.0 degree	es		Mediu	m Truck	rs: 65	.286			
	Right View:	90.0 degree	es		Hear	y Truck	s: 65	.299			
FHWA Noise Mod	lel Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fres		Barrier Att	en Be	rm Atten
Autos.		1.12		-1.85	-	-1.20		-4.73		000	0.000
Medium Trucks.		-9.90		-1.84		-1.20		-4.88		000	0.000
Heavy Trucks.	85.38	-12.72		-1.84	1	-1.20		-5.25	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier	atten	uation)						
VehicleType	Leq Peak Hou			Leq Ev	rening		Night		Ldn		NEL
Autos.			66.2		63.6		60		68.3		68.7
Medium Trucks.			65.7		61.8		62	-	69.2	_	69.4
Heavy Trucks. Vehicle Noise			68.0 71.5		60.8		61 66		69.3 73.3		69.5 74.0
Centerline Distan					07.0		00	.0	13.	'	74.0
Centernine Distan	ce to Noise Co	ontour (iii reet		70 c	IRA	65	dBA	Т.	60 dBA	55	dBA
			I dn:	13			91	<u> </u>	627		.351
			VEL:	14	-	_	02		651		.402
		0.			170 302 031 1,				,		

	FHV	/A-RD-77-108	HIGH	1 YAWI	NOISE P	REDICTION	ON MC	DDEL			
	io: OY le: Archibald A nt: n/o Chino A					Project I Job Nu		Homes 11968	tead		
SITE S	SPECIFIC IN	PUT DATA				N	OISE	MODE	L INPUT	S	
Highway Data					Site Cor	nditions (Hard =	= 10, So	ft = 15)		
Average Daily	Traffic (Adt):	29,960 vehicle	es					Autos:	15		
Peak Hour	Percentage:	10%			Me	edium Tru	icks (2	Axles):	15		
Peak H	lour Volume:	2,996 vehicle	s		He	eavy Truc	ks (3+	Axles):	15		
Vei	hicle Speed:	55 mph			Vehicle	Miv					
Near/Far Lai	ne Distance:	93 feet		ŀ		icleType		Dav	Evening	Night	Daily
Site Data							utos:	74.1%			89.659
Rar	rrier Heiaht:	0.0 feet			M	ledium Tri	ucks:	69.0%	7.1%	23.8%	7.029
Barrier Type (0-W		0.0				Heavy Tr	ucks:	82.1%	3.9%	13.9%	3.339
Centerline Dis		74.0 feet		-	Maine C	ource Ele	n codio s	an (in fo	na41		
Centerline Dist.	to Observer:	74.0 feet		H	Noise 3	Autos		.000	ei)		
Barrier Distance	to Observer:	0.0 feet			Modiu	m Trucks		.297			
Observer Height (Above Pad):	5.0 feet				vy Trucks		.291	Grade Ad	liustmen	- 0.0
Pa	ad Elevation:	0.0 feet								juourrorn	. 0.0
Roa	ad Elevation:	0.0 feet		L	Lane Eq	uivalent			eet)		
F	Road Grade:	0.0%				Autos		.782			
	Left View:	-90.0 degree				m Trucks		.629			
	Right View:	90.0 degree	es		Hea	vy Trucks	: 57	.644			
FHWA Noise Mode	el Calculation:	ì									
VehicleType	REMEL	Traffic Flow	Dis	stance		Road	Fres		Barrier Att		m Atten
Autos:	71.78	1.58		-1.0		-1.20		-4.73		000	0.00
Medium Trucks:	82.40	-9.48		-1.0	-	-1.20		-4.88		000	0.00
Heavy Trucks:	86.40	-12.72		-1.0		-1.20		-5.25	0.0	000	0.00
Unmitigated Noise			_								
,,,	Leq Peak Hou	.,.,	_	Leq E	vening	Leq N		_	Ldn		NEL
Autos: Medium Trucks:	71 70	-	69.0 68.3		66.5 64.4		63. 64.	-	71. ⁻ 71. ⁻		71. 72.
	70	-	69.8		62.6		63	-	71.3	-	72. 71.
Heavy Trucks: Vehicle Noise:	75		73.9		69.6		68.	-	76.2		76.
Centerline Distance	e to Noise Co	ntour (in feet)								
		,		70	dBA	65 d	lBA	6	0 dBA	55	dBA
	Ldn:				91	41			886	1,	910
	CNEL:					198 428 921 1,984					984

	E.B.										
Scenari								Homes	stead		
	e: Limonite Av					JOD IN	iumber:	11968			
Road Seginer	nt: e/o Hamnei	AV.									
	SPECIFIC IN	PUT DATA							L INPUT	S	
Highway Data				S	ite Cor	ditions	(Hard :	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	27,223 vehicle	es					Autos:			
Peak Hour	Percentage:	10%			Me	edium Tr	ucks (2	Axles):	15		
Peak H	our Volume:	2,722 vehicle	S		He	eavy Tru	cks (3+	Axles):	15		
Ve	hicle Speed:	45 mph		v	ehicle	Mix					
Near/Far Lai	ne Distance:	78 feet		-		icleType	,	Day	Evening	Night	Daily
Site Data							Autos:	74.1%	- 0	15.6%	
Rai	rier Heiaht:	0.0 feet			М	edium T	rucks:	69.0%	7.1%	23.8%	7.089
Barrier Type (0-W		0.0				Heavy T	rucks:	82.1%	3.9%	13.9%	3.67
Centerline Dis		76.0 feet									
Centerline Dist.		76.0 feet		N	oise S	ource El			eet)		
Barrier Distance		0.0 feet				Auto		.000			
Observer Height (5.0 feet				m Truck		.297			
	ad Elevation:	0.0 feet			Hear	vy Truck	s: 8	.004	Grade Ad	justment	0.0
Roa	ad Elevation:	0.0 feet		L	ane Eq	uivalen	Distar	nce (in i	feet)		
ı	Road Grade:	0.0%				Auto	s: 65	.422			
	Left View:	-90.0 degree	es		Mediu	m Truck	s: 65	.286			
	Right View:	90.0 degre	es		Hear	vy Truck	s: 65	.299			
FHWA Noise Mode	el Calculation:	S									
VehicleType	REMEL	Traffic Flow		tance	Finite	Road	Fres		Barrier Att	_	m Atter
Autos:	68.46	2.02		-1.85		-1.20		-4.73		000	0.00
Medium Trucks:	79.45	-8.99		-1.84		-1.20		-4.88	0.0	000	0.00
Heavy Trucks:	84.25	-11.84		-1.84		-1.20		-5.25	0.0	000	0.00
Unmitigated Noise										1	
	Leq Peak Hou	, ,		Leg Eve			Night		Ldn		VEL
Autos:	67		65.3		62.8		59	-	67.4		67
Medium Trucks:	67		65.0		61.2		61		68.0	-	68
Heavy Trucks:	69		67.7		60.6		61		69.		69
Vehicle Noise:	72		71.0		66.4		65	.8	73.	2	73
Centerline Distanc	e to Noise Co	ntour (in feet)	70 dl	24	65	dBA		60 dBA		dBA
			I dn:	70 at			<i>aBA</i> 68		577		ава 242
						2				,	
			NFI:	129)	2	78		598	4 1	288

Thursday, August 8, 2019

FI	IWA-	RD-77-108	HIGH	WAY	NOISE P	REDICT	ION M	ODEL			
Scenario: OY Road Name: Archibald Road Segment: s/o Chino								: Home : 11968			
SITE SPECIFIC	NPU	T DATA				Ν	IOISE	MODE	L INPUT	S	
Highway Data					Site Con	ditions	(Hard	= 10, S	oft = 15)		
Average Daily Traffic (Adt):	27.	248 vehicle	s					Autos.	: 15		
Peak Hour Percentage:		10%			Me	dium Tr	ucks (2	Axles).	: 15		
Peak Hour Volume:	2,7	25 vehicles			He	avy Tru	cks (3+	Axles).	: 15		
Vehicle Speed:		55 mph									
Near/Far Lane Distance:		93 feet			Vehicle I		. 1	Dav	E	Alledon	D-#-
Site Data					ven	icleType	Autos:	74.19	Evening 10.3%	Night 15.6%	Daily 89.65%
						, edium T				23.8%	
Barrier Height:		0.0 feet									
Barrier Type (0-Wall, 1-Berm):		0.0			,	Heavy T	rucks:	82.17	0 3.9%	13.9%	3.33%
Centerline Dist. to Barrier.		4.0 feet			Noise Sc	ource El	levatio	ns (in f	eet)		
Centerline Dist. to Observer.		4.0 feet				Auto	s: I	0.000			
Barrier Distance to Observer:		0.0 feet			Mediu	m Truck	s:	2.297			
Observer Height (Above Pad):		5.0 feet			Heav	y Truck	s:	B.004	Grade Ad	justmen	t: 0.0
Pad Elevation:		0.0 feet									
Road Elevation:		0.0 feet			Lane Eq				teet)		
Road Grade:		0.0%				Auto		7.782			
Left View:	-	0.0 degree				m Truck		7.629			
Right View:	9	0.0 degree	s		Heav	y Truck	s: 5	7.644			
FHWA Noise Model Calculation											
VehicleType REMEL		affic Flow	Dis	stance	Finite		Fre.	snel	Barrier Att		rm Atten
Autos: 71.7	-	1.17		-1.0		-1.20		-4.73		000	0.000
Medium Trucks: 82.4	-	-9.89		-1.0		-1.20		-4.88		000	0.000
Heavy Trucks: 86.4	-	-13.13		-1.0		-1.20		-5.25	0.0	000	0.000
Inmitigated Noise Levels (wi			oarrie					_			
VehicleType Leq Peak H		Leq Day		Leq E	vening	Leq	Night		Ldn	_	NEL
	0.7		8.8		66.1		63		70.		71.1
	0.3		37.9		64.0		64		71.	-	71.7
	71.0		73.4		62.2			2.9	70.8 75.8		70.9 76.0
Centerline Distance to Noise			J							-	, 5.0
		(
Jointoi milo Diotanio to Moloc.				70	dBA	65	dBA		60 dBA	55	dBA
Johnson Diotalios to Noise		L	dn:		dBA 79		dBA 86		60 dBA 832		793

	FH\	WA-RD-77-108	HIGHW	AY NO	DISE PI	REDICT	ION MO	DEL			
Road Nar	rio: OY ne: Archibald A ent: s/o Schaefe						t Name: lumber:		stead		
SITE	SPECIFIC IN	IPUT DATA				١	IOISE	MODE	L INPUT	S	
Highway Data				S	ite Cor	ditions	(Hard =	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	25,560 vehicle	es					Autos:	15		
Peak Hou	r Percentage:	10%			Me	edium Tr	ucks (2	Axles):	15		
Peak I	Hour Volume:	2,556 vehicle	S		He	avy Tru	cks (3+	Axles):	15		
V	ehicle Speed:	55 mph		V	ehicle	Miv					
Near/Far La	ane Distance:	93 feet				icleType	9	Dav	Evening	Night	Daily
Site Data					1011		Autos:	74.1%		15.6%	
D.	arrier Height:	0.0 feet			М	edium T	rucks:	69.0%	7.1%	23.8%	7.02%
Barrier Type (0-V		0.0				Heavy T	rucks:	82.1%	3.9%	13.9%	3.33%
	ist. to Barrier:	74.0 feet		-							
Centerline Dist.	to Observer:	74.0 feet		N	oise S	ource E			eet)		
Barrier Distance	to Observer:	0.0 feet				Auto		.000			
Observer Height	(Above Pad):	5.0 feet				m Truck		.297	Crada Ad	li rotmon	4 0 0
	Pad Elevation:	0.0 feet			Hear	y Truck	s: 8	.004	Grade Ad	justmen	0.0
Ro	ad Elevation:	0.0 feet		L	ane Eq	uivalen	t Distar	ce (in	feet)		
	Road Grade:	0.0%				Auto	s: 57	.782			
	Left View:	-90.0 degree	es		Mediu	m Truck	s: 57	.629			
	Right View:	90.0 degree	es		Hear	y Truck	s: 57	.644			
FHWA Noise Mod	lel Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista			Road	Fres		Barrier Att		rm Atten
Autos.		0.89		-1.05		-1.20		-4.73		000	0.000
Medium Trucks.		-10.17		-1.03		-1.20		-4.88		000	0.000
Heavy Trucks.	86.40	-13.41		-1.03		-1.20		-5.25	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier a	attenu	ıation)						
VehicleType	Leq Peak Hou			.eq Ev			Night		Ldn		NEL
Autos.			68.3		65.8		62.		70.4		70.8
Medium Trucks.			67.6		63.8		64.	_	71.2	_	71.4
Heavy Trucks.			69.1		61.9		62.		70.		70.6
Vehicle Noise		i.2	73.2		68.9		68	.1	75.	0	75.7
Centerline Distan	ce to Noise Co	ontour (in feet	,	70 di	DΛ	65	dBA	Τ,	60 dBA	56	dBA
			I dn:	172			70		797		718
		0	NEL:	178	_	-	85		829		785
		C.		170	-	J			020		. 50

	FHW	/A-RD-77-108	HIGHWA	Y NOISE P	REDICTION	ON MOD	DEL			
Scenari	o: OY				Project I	lame: F	lomes	tead		
Road Nam	e: Archibald Av	<i>/</i> .			Job Nu	mber: 1	1968			
Road Segmer	nt: s/o Eucalypt	us Av.								
SITE S	SPECIFIC IN	PUT DATA			N	DISE N	IODE	L INPUTS	S	
Highway Data				Site Cor	nditions (Hard =	10, So	ft = 15)		
Average Daily	Traffic (Adt):	27,793 vehicle	es			A	Autos:	15		
Peak Hour	Percentage:	10%		Me	edium Tru	cks (2 A	xles):	15		
Peak H	our Volume:	2,779 vehicles	8	He	eavy Truc	rs (3+ A	xles):	15		
Ve	hicle Speed:	55 mph		Vehicle	Miv					
Near/Far Lai	ne Distance:	93 feet			icleType		Day	Evening	Night	Daily
Site Data							74.1%	-	15.6%	
Par	rier Height:	0.0 feet		- M	ledium Tru	icks:	69.0%	7.1%	23.8%	7.029
Barrier Type (0-W		0.0			Heavy Tru	icks:	32.1%	3.9%	13.9%	3.339
Centerline Dis	. ,	74.0 feet		M-1 0			/! f-	-41		
Centerline Dist.	to Observer:	74.0 feet		Noise S	ource Ele		•	et)		
Barrier Distance	to Observer:	0.0 feet			Autos					
Observer Height (Above Pad):	5.0 feet			m Trucks					
	d Elevation:	0.0 feet		Hea	vy Trucks	8.0	104	Grade Adj	ustmen	t: 0.0
Roa	d Elevation:	0.0 feet		Lane Eq	uivalent	Distanc	e (in f	eet)		
F	Road Grade:	0.0%			Autos	57.7	'82			
	Left View:	-90.0 degree	es	Mediu	m Trucks	57.6	29			
	Right View:	90.0 degree	es	Hea	vy Trucks	57.6	44			
FHWA Noise Mode	l Calculations	:								
VehicleType	REMEL	Traffic Flow	Distanc	ce Finite	Road	Fresn	e/	Barrier Atte	en Be	rm Atten
Autos:	71.78	1.26	-	1.05	-1.20	-	4.73	0.0	000	0.00
Medium Trucks:	82.40	-9.81	-	1.03	-1.20		4.88	0.0	000	0.00
Heavy Trucks:	86.40	-13.05	-	1.03	-1.20		5.25	0.0	000	0.00
Unmitigated Noise	Levels (witho	ut Topo and	barrier at	tenuation)						
,,	Leq Peak Houi			q Evening	Leq N			Ldn	_ ~	NEL
Autos:	70.	-	68.7	66.1		63.2		70.8		71.
Medium Trucks:	70.		68.0	64.1		64.6		71.5		71.
Heavy Trucks:	71.		69.5	62.3		63.0		70.9		71.
Vehicle Noise:	75.	5	73.5	69.2	!	68.4		75.9)	76.
Centerline Distanc	e to Noise Co	ntour (in feet,								
				70 dBA	65 d		6	0 dBA		5 dBA
			I dn:							.817
			Lan: VEL:	182 189	39 40			843 876		.887

Barrier Height: D.0 feet Barrier Type (0-Wall, 1-Berm): O.0 feet Heavy Trucks: 69.0% 7.1% 23.8% 7.02% Heavy Trucks: 82.1% 3.9% 13.9% 3.33% Noise Source Elevations (in feet)		FH'	WA-RD-77-108	HIGHW	AY NO	DISE PRE	DICTI	ON MOI	EL			
Average Daily Traffic (Adt): 28,619 vehicles Peak Hour Percentage: 10% Medium Trucks (2A Aksles): 15 Medium Trucks (3A Aksles): 15 Medium Trucks: 14 Medium Trucks: 15 Medium Trucks: 15 Medium Trucks: 16 Mediu	Road Nan	ne: Archibald A								stead		
Average Daily Traffic (Adt): 28,619 vehicles Peak Hour Potentage: 10% Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 16,6% and Axles (4+ Axles): 16,6% and Axles (SPECIFIC IN	NPUT DATA								6	
Peak Hour Percentage:	Highway Data				S	ite Condi	tions	(Hard =	10, Sc	oft = 15)		
Peak Hour Volume: Vehicle Speed: Near/Far Lane Distance: 93 feet St mph Near/Far Lane Distance: 93 feet Vehicle Mix Vehicle Type Day Evening Night Daily Daily Night Daily D	Average Daily	Traffic (Adt):	28,619 vehicle	es								
Vehicle Near/Far Lane Distance: 93 feet Vehicle Mix Vehicle Type Day Evening Night Daily Daily Night Daily Near/Far Lane Distance: 93 feet Vehicle Type Day Evening Night Daily Night Daily Near/Far Lane Distance: 74.1	Peak Hour	Percentage:	10%						,			
Near/Far Lane Distance: 93 feet VehicleType Day Evening Night Daily			2,862 vehicle	S		Heav	ry Truc	cks (3+ A	xles):	15		
Site Data Sarrier Height: Data Sarrier Height: Data Sarrier Height: Data Sarrier Height: Data Sarrier Height: Data Sarrier Type (0-Wall, 1-Barm): O.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Dbserver: 74.0 feet Centerline Dist. to D					ν	ehicle Mi	x					
Barrier Height: 0.0 feet Medium Trucks: 69.0% 7.1% 23.8% 7.02% Heavy Trucks: 82.1% 3.9% 13.9% 3.33% Noise Source Elevations (in feet) Medium Trucks: 82.1% 3.9% 13.9% 3.33% Noise Source Elevations (in feet) Noise Source Elevations (in feet) Medium Trucks: 22.297 Medium Trucks: 22.297 Medium Trucks: 22.297 Medium Trucks: 8.004 Grade Adjustment: 0.0 feet Heavy Trucks: 8.004 Grade Adjustment: 0.0 feet Heavy Trucks: 8.004 Grade Adjustment: 0.0 feet Heavy Trucks: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.629 Heavy Trucks: 57.629 Heavy Trucks: 57.644 Medium Trucks: 57.644 Medium Trucks: 57.644 Medium Trucks: 57.649 Heavy Trucks: 57.649	Near/Far La	ne Distance:	93 feet			Vehicl	еТуре		Day	Evening	Night	Daily
Barrier Type (Pwall, 1-Berm): 0.0 test Centerline Dist. to Observer: 74.0 feet Centerline Dist. to Observer: 0.0 feet Centerline Dist. to Observer: 0.0 feet Centerline Distance to Observer: 0.0 feet Centerline Distance to Observer: 0.0 feet Centerline Distance to Observer: 0.0 feet Centerline Distance to Observer: 0.0 feet Centerline Distance to Observer: 74.0 feet Centerline Distance feet Centerline Distan	Site Data						A	lutos:	74.1%	10.3%	15.6%	89.65%
Barrier Type (0-Wall, 1-Berm):	Ва	rrier Heiaht:	0.0 feet			Mea	lium Tr	rucks:	9.0%	7.1%	23.8%	7.02%
Centerline Dist. to Observer: Barrier Distance to Observer: Barrier Distance to Observer: Dosever Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0%			0.0			He	avy Tr	rucks:	32.1%	3.9%	13.9%	3.33%
Autos: 0.000	Centerline Di	st. to Barrier:	74.0 feet			oico Sou	roo El	ovations	(in fe	201		
Barrier Distance to Observer: 0.0 feet Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0 feet Heavy Trucks: 8.004 Grade Adjustment: 0.0 feet Heavy Trucks: 8.004 Grade Adjustment: 0.0 feet Heavy Trucks: 57.629 Heavy Trucks: 57.629 Heavy Trucks: 57.629 Heavy Trucks: 57.629 Heavy Trucks: 57.644 Heavy Trucks: 57.644 Heavy Trucks: 57.629 Heavy Truc	Centerline Dist.	to Observer:	74.0 feet		/*	oise sou			•	ei)		
Diserver Height (Above Pad):	Barrier Distance	to Observer:	0.0 feet			Madium						
Pad Elevation:	Observer Height	(Above Pad):	5.0 feet							Grade Adi	ustment	: 0.0
Road Grade:			0.0 feet						•			
Left View:					L	ane Equi			_	feet)		
FHWA Noise Model Calculations Vehicle Type REMEL Traffic Flow Distance Finite Road Fresnet Barrier Atten Berm Atten								. 01.0				
VehicleType		•		es		Heavy	Trucks	s: 57.6	44			
Autos: 71.78 1.38 -1.05 -1.20 -4.73 0.000 0.000 Medium Trucks: 82.40 -9.68 -1.03 -1.20 -4.88 0.000 0.000 Medium Trucks: 86.40 -12.92 -1.03 -1.20 -5.25 0.000 0.000 Medium Trucks: 86.40 -12.92 -1.03 -1.20 -5.25 0.000 0.000 Medium Trucks: 86.40 -12.92 -1.03 -1.20 -5.25 0.000 0.000 Medium Trucks: Without Topo and barrier attenuation) Vehicle Type Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 70.9 68.8 66.3 63.3 70.9 71.1 Medium Trucks: 70.5 68.1 64.2 64.7 71.7 71.1 Medium Trucks: 71.2 69.6 62.4 63.2 71.0 71.1 Medium Trucks: 75.7 73.7 69.4 68.6 76.0 76.0 76.0 Medium Trucks: 75.7 73.7 69.4 68.6 76.0 76.0 Medium Trucks: 75.7 73.7 73.7 75.0 75.0 Medium Trucks: 75.0 76.0 Medium Trucks: 75.0 76.0 Medium Trucks: 75.0 76.0 Medium Trucks: 75.0 Medium Trucks: 75.0 Medium Trucks: 75.0 Medium Trucks: 75.0 Medium Trucks: 70.9 Medi												
Medium Trucks: 82.40 -9.68 -1.03 -1.20 -4.88 0.000 0.000 Heavy Trucks: 86.40 -12.92 -1.03 -1.20 -5.25 0.000 0.000 Unmitigated Noise Levels (without Topo and barrier attenution)	,,								_		_	
Heavy Trucks: 86.40 -12.92 -1.03 -1.20 -5.25 0.000 0.000												
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL												
VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 70.9 68.8 66.3 63.3 70.9 71.7 Medium Trucks: 70.5 68.1 64.2 64.7 71.7 71.5 Heavy Trucks: 71.2 69.6 62.4 63.2 71.0 71. Vehicle Noise: 75.7 73.7 69.4 68.6 76.0 76.2 Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 185 399 860 1,852							-1.20		0.20	0.0	00	0.000
Autos: 70.9 68.8 66.3 63.3 70.9 71.3 Medium Trucks: 70.5 68.1 64.2 64.7 71.7 71.5 Heavy Trucks: 71.2 69.6 62.4 63.2 71.0 71.5 Vehicle Noise: 75.7 73.7 69.4 68.6 76.0 76.2 Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 185 399 860 1,852				_			1001	Nioshi		I do		NICI
Medium Trucks: 70.5 68.1 64.2 64.7 71.7 71.5 Heavy Trucks: 71.2 69.6 62.4 63.2 71.0 71.7 Vehicle Noise: 75.7 73.7 69.4 68.6 76.0 76.0 Centerline Distance to Noise Contour (in feet) Ldn: 185 399 860 1,852	,,	- 1	. , . ,		ey ⊏v		Leq					
Heavy Trucks: 71.2 69.6 62.4 63.2 71.0 71.1												71.9
Vehicle Noise: 75.7 73.7 69.4 68.6 76.0 76.2 Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 185 399 860 1,852												71.1
70 dBA 65 dBA 60 dBA 55 dBA Ldn: 185 399 860 1,852		75	5.7	73.7		69.4		68.6		76.0		76.2
Ldn: 185 399 860 1,852	Centerline Distan	ce to Noise C	ontour (in feet)								
					70 di	BA	65 (dBA	6	60 dBA	55	dBA
CNEL: 192 415 893 1,925		Ldn:					185 399 860 1			852		
			C	NEL:	192 415 893 1,925					925		

Thursday, August 8, 2019

	FH\	WA-RD-77-108	HIGH	WAY	NOISE PI	REDICT	ION M	ODEL			
Road Nar	rio: OY ne: Archibald A ent: s/o Merrill A							: Home : 11968			
SITE	SPECIFIC IN	IPUT DATA				1	NOISE	MODE	L INPUT	S	
Highway Data					Site Con	ditions	(Hard	= 10, S	oft = 15)		
Average Daily	Traffic (Adt):	29,249 vehicle	es					Autos.	15		
Peak Hou	Percentage:	10%			Me	dium Tr	ucks (2	2 Axles).	: 15		
Peak I	Hour Volume:	2,925 vehicle	s		He	avy Tru	cks (3-	+ Axles).	: 15		
Ve	ehicle Speed:	55 mph			Vehicle						
Near/Far La	ane Distance:	93 feet				icleType	. 1	Day	Evening	Night	Daily
Site Data					Veri		Autos:	74.19		15.6%	,
					М	edium T				23.8%	
	rrier Height:	0.0 feet				Heavy T				13.9%	
Barrier Type (0-V		0.0			,	icavy i	rucks.	02.17	0 0.570	10.070	0.007
	ist. to Barrier:	74.0 feet			Noise So	ource E	levatio	ns (in f	eet)		
Centerline Dist.		74.0 feet				Auto	s:	0.000			
Barrier Distance		0.0 feet			Mediu	m Truck	s:	2.297			
Observer Height		5.0 feet			Heav	y Truck	s:	8.004	Grade Ad	ljustment	: 0.0
-	ad Elevation: ad Elevation:	0.0 feet 0.0 feet			Lane Eq	uivələn	t Dieta	nce (in	foot)		
RO	Road Grade:	0.0 feet 0.0%			Lane Lq	Auto		7.782	1001)		
	Left View:				Modiu	m Truck		7.629			
		-90.0 degree				vy Truck		7.644			
	Right View:	90.0 degree	25		rical	ry IIuch	.s. J	7.044			
HWA Noise Mod	lel Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fre	snel	Barrier At	en Ber	m Atten
Autos:		1.48		-1.0		-1.20		-4.73		000	0.000
Medium Trucks.		-9.58		-1.0		-1.20		-4.88		000	0.000
Heavy Trucks:	86.40	-12.82		-1.0	03	-1.20		-5.25	0.	000	0.000
Inmitigated Nois	e Levels (with	out Topo and	barri	er atte	nuation)						
VehicleType	Leq Peak Hou	ır Leq Day	/	Leq E	Evening	Leq	Night		Ldn	C	NEL
Autos	71	.0	68.9		66.4		63	3.4	71.	0	71.4
Medium Trucks.	70	1.6	68.2		64.3		64	1.8	71.	В	72.0
Heavy Trucks:	71	.3	69.7		62.5		63	3.2	71.	1	71.2
Vehicle Noise.	75	5.8	73.7		69.5		68	3.7	76.	1	76.3
Centerline Distan	ce to Noise Co	ontour (in feet)								
			L		dBA		dBA		60 dBA		dBA
			Ldn:	-	188		05		872	,	880
		C	NEL:	1	195	4	21		906	1,	953

FF	WA-RD-77-108	HIGHV	VAY N	IOISE PI	REDICT	ION MO	DEL			
Scenario: OY Road Name: Archibald Road Segment: s/o Limon						Name: I lumber:		stead		
SITE SPECIFIC I	NPUT DATA				١	IOISE N	ЛОDE	L INPUT	S	
Highway Data			5	Site Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily Traffic (Adt):	27,861 vehicl	es					Autos:	15		
Peak Hour Percentage:	10%			Me	edium Tr	ucks (2 /	Axles):	15		
Peak Hour Volume:	2,786 vehicle	:S		He	avy Tru	cks (3+ A	Axles):	15		
Vehicle Speed:	50 mph		,	Vehicle I	Miv					
Near/Far Lane Distance:	78 feet		Ε,		icleType		Day	Evening	Night	Daily
Site Data						Autos:	74.1%		15.69	
Barrier Height:	0.0 feet			М	edium T	rucks:	69.0%	7.1%	23.89	% 7.02%
Barrier Type (0-Wall, 1-Berm):	0.0			1	Heavy T	rucks:	82.1%	3.9%	13.99	% 3.33%
Centerline Dist. to Barrier:	76.0 feet		-							
Centerline Dist. to Observer:	76.0 feet		,	Voise So		levation	_	eet)		
Barrier Distance to Observer:	0.0 feet				Auto		000			
Observer Height (Above Pad):	5.0 feet				m Truck		297	0	E 4	-4-00
Pad Elevation:	0.0 feet			Heav	y Truck	s: 8.	004	Grade Ad	justmei	nt: 0.0
Road Elevation:	0.0 feet		L	Lane Eq	uivalen	t Distan	ce (in	feet)		
Road Grade:	0.0%				Auto	s: 65.	422			
Left View:	-90.0 degre	es		Mediu	m Truck	s: 65.	286			
Right View:	90.0 degre	es		Heav	y Truck	s: 65.	299			
FHWA Noise Model Calculation	ns									
VehicleType REMEL	Traffic Flow	Dista		_	Road	Fresn	_	Barrier Att	_	erm Atten
Autos: 70.2			-1.85	-	-1.20		-4.73		000	0.000
Medium Trucks: 81.0			-1.84		-1.20		-4.88		000	0.000
Heavy Trucks: 85.3	3 -12.62		-1.84	4	-1.20		-5.25	0.0	000	0.000
Unmitigated Noise Levels (with		barrier	atten	uation)					,	
VehicleType Leq Peak Ho			Leq Ev			Night		Ldn		CNEL
	8.8	66.7		64.2		61.2		68.8		69.2
	8.6	66.2		62.3		62.8		69.8	-	70.0
Heavy Trucks: 6	9.7	68.1		60.9		61.6		69.4		69.6
	2.0	71.0								
Vehicle Noise: 7	3.8	71.8		67.5		66.7		74.	1	74.4
			70.0			66.7 dBA		74. 60 dBA		74.4 5 dBA
Vehicle Noise: 7			70 a	iBA	65				5	

_	FHV	VA-RD-77-108	HIGH	1 YAW	NOISE PI	REDICT	ION MC	DEL			
Road Nar	rio: OY ne: Kimball Av. ent: w/o Hellma					Project	Name: lumber:	Homes	stead		
SITE	SPECIFIC IN	PUT DATA				١	IOISE I	MODE	L INPUTS	3	
Highway Data					Site Con	nditions	(Hard =	: 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	15,022 vehicle	es					Autos:	15		
Peak Hou	Percentage:	10%			Me	edium Tr	ucks (2	Axles):	15		
Peak I	Hour Volume:	1,502 vehicles	3		He	eavy Tru	cks (3+.	Axles):	15		
Ve	ehicle Speed:	50 mph		H	Vehicle	Mix					
Near/Far La	ane Distance:	51 feet				icleType		Day	Evening	Night	Daily
Site Data							Autos:	74.1%	10.3%	15.6%	89.65%
Ra	rrier Height:	0.0 feet			М	ledium T	rucks:	69.0%	7.1%	23.8%	7.02%
Barrier Type (0-V		0.0				Heavy T	rucks:	82.1%	3.9%	13.9%	3.33%
., .	ist. to Barrier:	49.0 feet		-					-1		
Centerline Dist.	to Observer:	49.0 feet		-	Noise S				eet)		
Barrier Distance	to Observer:	0.0 feet				Auto		.000			
Observer Height	(Above Pad):	5.0 feet				m Truck		.297			
	ad Elevation:	0.0 feet			Hear	vy Truck	s: 8.	.004	Grade Adj	ustmen	0.0
Ro	ad Elevation:	0.0 feet			Lane Eq	uivalen	Distan	ce (in i	feet)		
	Road Grade:	0.0%				Auto	s: 42	.140			
	Left View:	-90.0 degree	es		Mediu	m Truck	s: 41	.929			
	Right View:	90.0 degree	es		Hear	vy Truck	s: 41	.950			
FHWA Noise Mod	lel Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresi	nel	Barrier Atte	en Bei	rm Atten
Autos:	70.20	-1.00		1.0	1	-1.20		-4.64	0.0	00	0.000
Medium Trucks:	81.00	-12.06		1.0	4	-1.20		-4.87	0.0	00	0.000
Heavy Trucks:	85.38	-15.30		1.0	4	-1.20		-5.44	0.0	00	0.000
Unmitigated Nois											
VehicleType	Leq Peak Hou		_	Leq E	vening	,	Night		Ldn	_	NEL
Autos:			66.9		64.4		61.		69.0		69.4
Medium Trucks:			66.4		62.5		63.		70.0		70.2
Heavy Trucks: Vehicle Noise:			68.3 72.0		61.1 67.6		61.		69.6 74.3		69.8 74.6
Centerline Distan	ce to Noise Co	ntour (in feet)								
	0 00	(70	dBA	65	dBA	6	0 dBA	55	dBA
			Ldn:	9	95	2	05		442	6	952
		CI	VEL:	9	9	2	13		459	9	989

	FHWA	-RD-77-108 H	IGHWAY	NOISE PI	REDICTI	ON MODE	L		
	io: OY ne: Archibald Av. nt: s/o 65th St.					Name: Hoi umber: 119			
	SPECIFIC INPU	JT DATA					DEL INPUT	S	
Highway Data				Site Con	ditions (Hard = 10	Soft = 15)		
Average Daily	Traffic (Adt): 31	,647 vehicles				Aut	os: 15		
Peak Hour	Percentage:	10%		Me	dium Tru	icks (2 Axle	es): 15		
Peak H	lour Volume: 3,	165 vehicles		He	avy Truc	ks (3+ Axle	es): 15		
Ve	hicle Speed:	50 mph		Vehicle	Wix				
Near/Far La	ne Distance:	78 feet		Veh	icleType	Da	y Evening	Night	Daily
Site Data					Α	utos: 74	1% 10.3%	15.6%	89.65%
Ra	rrier Height:	0.0 feet		М	edium Tr	ucks: 69	.0% 7.1%	23.8%	7.02%
Barrier Type (0-W		0.0			Heavy Tr	ucks: 82	1% 3.9%	13.9%	3.33%
Centerline Di		76.0 feet	-	N-1 0		evations (i	f1)		
Centerline Dist.	to Observer:	76.0 feet	-	Noise So					
Barrier Distance	to Observer:	0.0 feet			Autos				
Observer Height (Above Pad):	5.0 feet			m Trucks			liuctmont	
Pa	ad Elevation:	0.0 feet		Heat	y Trucks	8: 8.004	. Grade Ac	ijusurierit	0.0
Roa	ad Elevation:	0.0 feet		Lane Eq	uivalent	Distance ('in feet)		
	Road Grade:	0.0%			Autos	65.422	2		
	Left View: -	90.0 degrees		Mediu	m Trucks	65.286	6		
	Right View:	90.0 degrees		Heav	y Trucks	65.299)		
FHWA Noise Mod							_		
VehicleType			Distance		Road	Fresnel	Barrier At		m Atten
Autos:	70.20	2.23	-1.8		-1.20	-4.		000	0.000
Medium Trucks:	81.00	-8.83	-1.8		-1.20	-4.		000	0.000
Heavy Trucks:	85.38	-12.07	-1.8	34	-1.20	-5.	25 0.	000	0.000
Unmitigated Noise		t Topo and ba	arrier atte	nuation)					
	Leq Peak Hour	Leq Day		vening	Leq I		Ldn		VEL
Autos:	69.4	67		64.7		61.8	69.		69.8
Medium Trucks:	69.1	66		62.9		63.4	70.		70.5
Heavy Trucks:	70.3	68	1.6	61.5		62.2	70.	0	70.2
Vehicle Noise:	74.4	72	2.4	68.0		67.3	74.	7	74.9
Centerline Distand	ce to Noise Cont	our (in feet)							

Thursday, August 8, 2019

FHV	VA-RD-77-108 HIGH	HWAY NO	DISE PREDICT	ION MODE	L	
Scenario: OY				Name: Ho		
Road Name: Limonite Av			Job N	umber: 119	968	
Road Segment: e/o Hellmar	ı Av.					
SITE SPECIFIC IN	PUT DATA				DEL INPUT	5
Highway Data		Si	ite Conditions	(Hard = 10)	, Soft = 15)	
Average Daily Traffic (Adt):	466 vehicles			Au	tos: 15	
Peak Hour Percentage:	10%		Medium Tr	ucks (2 Axl	es): 15	
Peak Hour Volume:	47 vehicles		Heavy True	cks (3+ Axl	es): 15	
Vehicle Speed:	50 mph	V	ehicle Mix			
Near/Far Lane Distance:	78 feet		VehicleType	Da	y Evening	Night Daily
Site Data			,	Autos: 74	.1% 10.3%	15.6% 89.65%
Barrier Height:	0.0 feet		Medium T	rucks: 69	.0% 7.1%	23.8% 7.02%
Barrier Type (0-Wall, 1-Berm):	0.0		Heavy T	rucks: 82	.1% 3.9%	13.9% 3.33%
Centerline Dist. to Barrier:	76.0 feet	N	oise Source El	evations (i	in feet)	
Centerline Dist. to Observer:	76.0 feet	-	Auto			
Barrier Distance to Observer:	0.0 feet		Medium Truck	s: 2.297	7	
Observer Height (Above Pad):	5.0 feet		Heavy Truck	s: 8.004	Grade Ad	ustment: 0.0
Pad Elevation:	0.0 feet		,			
Road Elevation:	0.0 feet	La	ane Equivalent			
Road Grade:	0.0%		Auto		=	
Left View:	-90.0 degrees		Medium Truck		-	
Right View:	90.0 degrees		Heavy Truck	s: 65.299	9	
FHWA Noise Model Calculation						
VehicleType REMEL		stance	Finite Road	Fresnel	Barrier Att	
Autos: 70.20	-16.09	-1.85	-1.20	-4.		0.000
Medium Trucks: 81.00	-27.15	-1.84	-1.20	-4.		0.000
Heavy Trucks: 85.38	-30.39	-1.84	-1.20	-5.	25 0.0	0.000
Inmitigated Noise Levels (with						
VehicleType Leq Peak Hou Autos: 51		Leq Eve	ening Leq	Night 43.5	Ldn 51.1	CNEL 51.5
			46.4 44.6	43.5 45.0	51.1 52.0	
Medium Trucks: 50 Heavy Trucks: 51			44.6	45.0 43.9	52.0	
					•	
			49.7	48.9	56.4	56.6
Centerline Distance to Noise Co	ontour (in feet)	70 dE	24 65	dBA	60 dBA	55 dBA
	Ldn: CNFI:	9 10	_	:0 :1	44 45	94 97

Thursday, August 8, 2019

	FH\	WA-RD-77-108	HIGH	WAY N	IOISE PI	REDICT	ION MO	DEL			
Road Nar	rio: OY ne: Limonite Av ent: e/o Archiba						t Name: lumber:		stead		
SITE	SPECIFIC IN	IPUT DATA				١	NOISE	MODE	L INPUT	S	
Highway Data					Site Con	nditions	(Hard =	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	19,833 vehicle	es					Autos:	15		
Peak Hou	r Percentage:	10%			Me	edium Tr	rucks (2	Axles):	15		
Peak I	Hour Volume:	1,983 vehicles	S		He	eavy Tru	cks (3+	Axles):	15		
Ve	ehicle Speed:	50 mph			Vehicle	Miv					
Near/Far La	ane Distance:	78 feet				icleType	2	Dav	Evening	Night	Daily
Site Data							Autos:	74.1%		15.6%	
D.	arrier Height:	0.0 feet			М	ledium T	rucks:	69.0%	7.1%	23.8%	7.02%
Barrier Type (0-V		0.0 1001				Heavy T	rucks:	82.1%	3.9%	13.9%	
	ist to Barrier:	76.0 feet		L							
Centerline Dist.		76.0 feet		4	Noise S				eet)		
Barrier Distance		0.0 feet				Auto		.000			
Observer Height		5.0 feet				m Truck		.297			
	Pad Elevation:	0.0 feet			Hear	vy Truck	rs: 8	.004	Grade Ad	justmen	t: 0.0
	ad Flevation:	0.0 feet			Lane Eq	uivalen	t Distar	ce (in	feet)		
	Road Grade:	0.0%				Auto	s: 65	.422			
	Left View:	-90.0 degree	es		Mediu	m Truck	s: 65	.286			
	Right View:	90.0 degree			Hear	vy Truck	s: 65	.299			
FHWA Noise Mod	lel Calculation	s									
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fres	nel	Barrier Att	en Bei	rm Atten
Autos:	70.20	0.20		-1.8	5	-1.20		-4.73	0.0	000	0.000
Medium Trucks:	81.00	-10.86		-1.8	4	-1.20		-4.88	0.0	000	0.000
Heavy Trucks:	85.38	-14.10		-1.8	4	-1.20		-5.25	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrie	atten	uation)						
VehicleType	Leq Peak Hou	ır Leq Day	′	Leq E	vening	Leq	Night		Ldn	С	NEL
Autos:	: 67	.4	65.3		62.7		59.	7	67.4	4	67.7
Medium Trucks:	67	11	64.7		60.9		61.	3	68.3	3	68.5
Heavy Trucks:	68	1.2	66.6		59.4		60.	1	68.0)	68.1
Vehicle Noise:	72	2.4	70.4		66.0		65	2	72.	7	72.9
Centerline Distan	ce to Noise Co	ontour (in feet)								
					dBA		dBA	(60 dBA		dBA
			Ldn:		14	_	46		530		143
		Ci	NEL:	11	19	2	56		551	1,	187

	FHW	/A-RD-77-108	HIGH	N YAW	IOISE PI	REDICTI	OM MO	DEL			
Scenario Road Name Road Segmen	e: Limonite Av					Project . Job No	Name: I Imber:		tead		
SITE S	SPECIFIC IN	PUT DATA				N	OISE N	/ODE	L INPUT	S	
Highway Data					Site Con	ditions (Hard =	10, So	ft = 15)		
Average Daily	Fraffic (Adt):	23,434 vehicle	es					Autos:	15		
Peak Hour I	Percentage:	10%			Me	edium Tru	cks (2 A	Axles):	15		
Peak He	our Volume:	2,343 vehicles	S		He	avy Truc	ks (3+ A	Axles):	15		
Vel	nicle Speed:	50 mph		H	Vehicle	Miv					
Near/Far Lar	ne Distance:	78 feet		-		icleType		Dav	Evening	Night	Daily
Site Data							utos:	74.1%		15.6%	
Rar	rier Height:	0.0 feet			М	edium Tr	ucks:	69.0%	7.1%	23.8%	7.029
Barrier Type (0-Wa		0.0				Heavy Tr	ucks:	82.1%	3.9%	13.9%	3.339
Centerline Dis		76.0 feet		-	M-1 0	FI		- /! 6-	-41		
Centerline Dist. t	o Observer:	76.0 feet		H.	Noise S	ource Ele			et)		
Barrier Distance t	o Observer:	0.0 feet			A de elle	Autos m Trucks		000 297			
Observer Height (/	Above Pad):	5.0 feet				m Trucks vy Trucks		297 004	Grade Ad	i rotmont	
Pa	d Elevation:	0.0 feet			пеа	ry Trucks	. 0.0	004	Grade Au,	usunen	0.0
Roa	d Elevation:	0.0 feet			Lane Eq	uivalent	Distano	ce (in f	eet)		
F	Road Grade:	0.0%				Autos	: 65.4	422			
	Left View:	-90.0 degree	es		Mediu	m Trucks	: 65.	286			
	Right View:	90.0 degree	es		Hear	y Trucks	: 65.	299			
FHWA Noise Mode	I Calculations										
VehicleType	REMEL	Traffic Flow	Dis	stance		Road	Fresn		Barrier Att		m Atten
Autos:	70.20	0.93		-1.8	-	-1.20		-4.73	0.0		0.00
Medium Trucks:	81.00	-10.13		-1.8		-1.20		-4.88		000	0.00
Heavy Trucks:	85.38	-13.37		-1.8	4	-1.20		-5.25	0.0	000	0.00
Unmitigated Noise			barrie	er atten	uation)						
,,	Leq Peak Hou		_	Leq E	vening	Leq I			Ldn		VEL
Autos:	68.	-	66.0		63.4		60.5		68.1		68.
Medium Trucks:	67.	-	65.4		61.6		62.1		69.0		69.
Heavy Trucks: Vehicle Noise:	69. 73.	•	67.3 71.1		60.2		60.9		68.7 73.4		68. 73.
					00.7		00.0	,	13.4	+	13.
Centerline Distanc	e to Noise Co	ntour (in feet)	70	dBA	65 0	IRA	6	0 dBA	55	dBA
						000					
			Ldn:	11	28	27	5		593	1 1	277

	FHV	VA-RD-77-108	HIGHW	AY NO	ISE PREDI	CTION N	MODEL			
Scenario. Road Name. Road Segment	Limonite Av						e: Home er: 11968			
SITE SI	PECIFIC IN	IPUT DATA				NOIS	E MODE	L INPUT	S	
Highway Data				Sit	e Conditio	ns (Harc	1 = 10, S	oft = 15)		
Average Daily Ti	raffic (Adt):	21,923 vehicle	es				Autos.	15		
Peak Hour P	ercentage:	10%			Medium	Trucks (2 Axles).	15		
Peak Ho	ur Volume:	2,192 vehicle	8		Heavy T	rucks (3	+ Axles)	15		
	cle Speed:	50 mph		Ve	hicle Mix					
Near/Far Lane	Distance:	78 feet			VehicleT	rpe	Dav	Evening	Night	Daily
Site Data						Autos.	74.19		15.6%	
Barr	ier Heiaht:	0.0 feet			Mediun	Trucks.	69.09	7.1%	23.8%	7.029
Barrier Type (0-Wa	II, 1-Berm):	0.0			Heav	Trucks.	82.19	3.9%	13.9%	3.33%
Centerline Dist.		76.0 feet		No	ise Source	Elevati	ons (in f	eet)		
Centerline Dist. to		76.0 feet			A	itos:	0.000			
Barrier Distance to		0.0 feet			Medium Tru	cks:	2.297			
Observer Height (A		5.0 feet			Heavy Tru	cks:	8.004	Grade Ad	ljustmen	t: 0.0
	l Elevation: l Flevation:	0.0 feet 0.0 feet		10	ne Equival	nt Dict	anco (in	foot)		
	nad Grade:	0.0 feet 0.0%		La			35.422	1001)		
/\tag{\tag{\tag{\tag{\tag{\tag{\tag{	Left View:	-90.0 degree			Medium Tri		35.286			
I	Right View:	90.0 degree			Heavy Tru		35.299			
FHWA Noise Model	Calculation									
VehicleType	REMEL	Traffic Flow	Distan		Finite Road		esnel	Barrier At		rm Atten
Autos:	70.20	0.64		-1.85	-1.2	-	-4.73		000	0.00
Medium Trucks:	81.00	-10.42		-1.84	-1.2	-	-4.88		000	0.00
Heavy Trucks:	85.38	-13.66		-1.84	-1.2	!0	-5.25	0.	000	0.00
Unmitigated Noise						All-d-1		I do		
VehicleType L Autos:	eq Peak Hou 67		65.7	eq Ever	63.1	eq Night	0.2	Ldn 67.		NEL 68.
Medium Trucks:	67		65.1		61.3	-	1.8	68.	-	68.
Heavy Trucks:	68		67.0		59.9	-	0.6	68.		68.
Vehicle Noise:	72		70.8		66.4		5.7	73.		73.
Centerline Distance	to Noise Co	ontour (in feet)							
·				70 dB	4	65 dBA		60 dBA	55	dBA
			Ldn:	122		263		567	1	,222
			VFI:	127		273		589		,269

Thursday, August 8, 2019

	FH'	WA-RD-77-108	HIGH	YAW	IOISE PI	REDICTI	ON M	ODEL			
Road Na	nrio: OY me: Limonite A ent: e/o Schola							: Homes	stead		
SITE	SPECIFIC IN	NPUT DATA		I		N	OISE	MODE	L INPUT	S	
Highway Data					Site Con	ditions (Hard	= 10, Sc	oft = 15)		
Average Dail	Traffic (Adt):	26,756 vehicle	es					Autos:	15		
Peak Hou	r Percentage:	10%			Me	dium Tru	icks (2	Axles):	15		
Peak	Hour Volume:	2,676 vehicle	S		He	avy Truc	ks (3-	Axles):	15		
ν	ehicle Speed:	50 mph		ŀ	Vehicle i	Miss					
Near/Far L	ane Distance:	78 feet		-		icleType		Dav	Evening	Night	Daily
Site Data				+	VCII		utos:	74.1%	-	15.6%	
					М	edium Tr		69.0%		23.8%	7.02%
Barrier Type (0-	arrier Height:	0.0 feet 0.0				Heavy Tr		82.1%		13.9%	3.33%
	nist. to Barrier:	76.0 feet		L							
Centerline Dis		76.0 feet			Noise So	ource Ele			eet)		
Barrier Distance		0.0 feet				Autos		0.000			
Observer Height		5.0 feet				m Trucks		2.297			
	Pad Flevation:	0.0 feet			Heav	y Trucks		B.004	Grade Ad	ljustment	: 0.0
	ad Elevation:	0.0 feet			Lane Eq	uivalent	Dista	nce (in	feet)		
	Road Grade:	0.0%		Ī		Autos	: 6	5.422			
	Left View:	-90.0 degree	es		Mediu	m Trucks	: 6	5.286			
	Right View:	90.0 degree	es		Heav	y Trucks	: 6	5.299			
FHWA Noise Mo	del Calculation	ıs									
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fre	snel	Barrier Att	ten Ber	m Atten
Autos	70.20	1.50		-1.8	5	-1.20		-4.73	0.	000	0.000
Medium Trucks	: 81.00	-9.56		-1.8	4	-1.20		-4.88	0.	000	0.000
Heavy Trucks	: 85.38	-12.80		-1.8	4	-1.20		-5.25	0.	000	0.000
Unmitigated Noi:											
VehicleType	Leq Peak Ho			Leq E	vening	Leq I			Ldn		VEL
Autos			66.6		64.0		-	1.0	68.	•	69.0
Medium Trucks			66.0		62.2			2.6	69.	-	69.8
Heavy Trucks			67.9		60.7		_	1.4	69.		69.4
Vehicle Noise			71.7		67.3		66	6.5	74.	0	74.2
Centerline Distar	nce to Noise C	ontour (in feet)	- Table 1	10.4		10.4	1 .		T ==	10.4
			Later		dBA	65 0		(60 dBA		dBA
			Ldn:		10	30			648	,	395
		C	VEL:	14	15	31	2		672	1,	449

Thursday, August 8, 2019

	FH\	WA-RD-77-108	HIGH	NAY 1	NOISE P	REDICT	ION MC	DEL			
Road Nar	rio: OY ne: Limonite A ent: e/o Hamne						t Name: lumber:		stead		
SITE	SPECIFIC IN	IPUT DATA				1	NOISE I	MODE	L INPUT	S	
Highway Data					Site Cor	nditions	(Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt):	29,589 vehicle	es					Autos:	15		
Peak Hou	r Percentage:	10%			Me	edium Ti	ucks (2	Axles).	15		
Peak I	Hour Volume:	2,959 vehicles	3		He	eavy Tru	cks (3+	Axles).	15		
V	ehicle Speed:	45 mph			Vehicle	Miv					
Near/Far La	ane Distance:	78 feet		H		icleType	2	Day	Evening	Night	Daily
Site Data							Autos:	74.1%		15.6	-
D.	arrier Height:	0.0 feet			M	ledium 7	rucks:	69.0%	7.1%	23.89	% 7.02%
Barrier Type (0-V		0.0 1001				Heavy 7	rucks:	82.1%	3.9%	13.99	% 3.33%
	ist to Barrier:	76.0 feet		-							
Centerline Dist		76.0 feet		-	Noise S				eet)		
Barrier Distance	to Observer:	0.0 feet				Auto		000			
Observer Height	(Above Pad):	5.0 feet				m Truck		297			
	Pad Elevation:	0.0 feet			Hea	vy Truck	rs: 8.	004	Grade Ad	justmei	nt: 0.0
	ad Elevation:	0.0 feet		Ī	Lane Eq	uivalen	t Distan	ce (in	feet)		
	Road Grade:	0.0%				Auto	s: 65	422			
	Left View:	-90.0 degree	es		Mediu	m Truck	s: 65	286			
	Right View:	90.0 degree	es		Hea	vy Truck	s: 65	299			
FHWA Noise Mod	lel Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresi	nel	Barrier Att	en B	erm Atten
Autos.	68.46	2.40		-1.8	15	-1.20		-4.73	0.0	000	0.000
Medium Trucks.	79.45	-8.66		-1.8	34	-1.20		-4.88	0.0	000	0.000
Heavy Trucks.	84.25	-11.90		-1.8	14	-1.20		-5.25	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier	atter	nuation)						
VehicleType	Leq Peak Hou	ır Leq Day	,	Leq E	vening	Leq	Night		Ldn	(CNEL
Autos.	: 67	.8	65.7		63.2		60.	2	67.8	3	68.2
Medium Trucks.	67	.7	65.3		61.5		62.)	68.9	9	69.1
Heavy Trucks.			67.7		60.5		61.		69.0		69.2
Vehicle Noise	: 73	3.1	71.1		66.6		66.)	73.4	4	73.6
Centerline Distant	ce to Noise C	ontour (in feet)					,		,	
					dBA		dBA	(60 dBA	_	5 dBA
			Ldn:		28		76		594		1,280
		Ci	VEL:	1	33	2	86		617		1,328

	FHV	VA-RD-77-108	HIGI	YAWH	IOISE P	REDICT	ION MO	DEL			
Road Nam	io: OY+P e: Archibald A nt: s/o Chino A						t Name: lumber:	Homes 11968	tead		
SITE S	SPECIFIC IN	IPUT DATA				1	IOISE	MODE	L INPUTS	3	
Highway Data					Site Cor	nditions	(Hard =	= 10, So	ft = 15)		
Average Daily	Traffic (Adt):	27,557 vehicle	es					Autos:	15		
Peak Hour	Percentage:	10%			Me	edium Tr	ucks (2	Axles):	15		
Peak H	our Volume:	2,756 vehicles	s		He	eavy Tru	cks (3+	Axles):	15		
Ve	hicle Speed:	55 mph		-	Vehicle	Miv					
Near/Far Lai	ne Distance:	93 feet		F		icleType	9	Dav	Evening	Night	Daily
Site Data							Autos:	74.1%	10.3%	15.6%	,
Rar	rier Height:	0.0 feet			M	ledium 7	rucks:	69.0%	7.1%	23.8%	7.129
Barrier Type (0-W		0.0				Heavy 7	rucks:	82.1%	3.9%	13.9%	3.689
Centerline Dis	st. to Barrier:	74.0 feet			Noise S	ource F	levation	ns (in fe	et)		
Centerline Dist.	to Observer:	74.0 feet		F	110/30 0	Auto		.000	<i>UI)</i>		
Barrier Distance	to Observer:	0.0 feet			Madiu	m Truck		.297			
Observer Height (Above Pad):	5.0 feet				vy Truck			Grade Ad	iustment	. 0 0
Pa	ad Elevation:	0.0 feet								dolimom	. 0.0
Roa	ad Elevation:	0.0 feet			Lane Eq	uivalen	t Distar	ice (in f	eet)		
F	Road Grade:	0.0%				Auto	s: 57	.782			
	Left View:	-90.0 degree	es		Mediu	m Truck	s: 57	.629			
	Right View:	90.0 degree	es		Hea	vy Truck	s: 57	.644			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Di	stance	Finite	Road	Fres		Barrier Atte	en Ber	m Atten
Autos:	71.78	1.20		-1.0	-	-1.20		-4.73	0.0		0.00
Medium Trucks:	82.40	-9.78		-1.0	3	-1.20		-4.88	0.0	000	0.00
Heavy Trucks:	86.40	-12.64		-1.0	3	-1.20		-5.25	0.0	000	0.00
Unmitigated Noise								,		,	
,,	Leq Peak Hou			Leq E	vening		Night		Ldn		NEL
Autos:	70		68.6		66.1		63.		70.7		71.
Medium Trucks:	70		68.0		64.1		64.	-	71.6		71.
Heavy Trucks: Vehicle Noise:	71 75		69.9 73.7		62.7 69.3		63. 68.		71.3 76.0		71.4 76.1
Centerline Distance					00.0				70.0	,	70
Cemeriine Distanc	e to Noise Co	miour (in feet	,	70	dBA	65	dBA	6	0 dBA	55	dBA
			L								
			Ldn:	18	35	3	99		859	1,	851

	FHV	VA-RD-77-108	HIGHW	AY NO	ISE PI	REDICT	ION MO	ODEL			
	o: OY+P e: Archibald A t: n/o Chino A					Project Job N		Home: 11968	stead		
SITE S	PECIFIC IN	PUT DATA							L INPUT	S	
Highway Data				Si	te Con	ditions	(Hard :	= 10, S	oft = 15)		
Average Daily 7	raffic (Adt):	30,252 vehicle	es					Autos:	15		
Peak Hour F	Percentage:	10%			Me	dium Tri	ucks (2	Axles):	15		
Peak Ho	our Volume:	3,025 vehicle	s		He	avy Truc	cks (3+	Axles):	15		
Veh	icle Speed:	55 mph		Ve	ehicle i	Miv					
Near/Far Lan	e Distance:	93 feet		,		icleType		Day	Evening	Night	Daily
Site Data							Autos:	74.1%	10.3%	15.6%	89.23
Rari	rier Heiaht:	0.0 feet			М	edium T	rucks:	69.0%	7.1%	23.8%	7.11
Barrier Type (0-Wa	all, 1-Berm):	0.0			-	Heavy Ti	rucks:	82.1%	3.9%	13.9%	3.65
Centerline Dis		74.0 feet		No	oise So	ource El	evatio	ns (in f	eet)		
Centerline Dist. to		74.0 feet				Auto	s: C	0.000			
Barrier Distance to		0.0 feet			Mediu	m Truck	s: 2	.297			
Observer Height (A	,	5.0 feet			Heav	y Truck	s: 8	3.004	Grade Ad	djustmen	t: 0.0
	d Elevation:	0.0 feet			no Fa	uivalent	Diotos	ann (in	foot)		
	d Elevation:	0.0 feet		La	ine Eq	Auto		7.782	reet)		
H	Road Grade: Left View:	0.0%			Modiu	Auto: m Truck		7.629			
	Right View:	-90.0 degree				y Truck	-	7.644			
FHWA Noise Mode	I Calculations	3									
VehicleType	REMEL	Traffic Flow	Distar	псе	Finite	Road	Fres	inel	Barrier At	ten Be	rm Atte
Autos:	71.78	1.60		-1.05		-1.20		-4.73	0.	000	0.0
Medium Trucks:	82.40	-9.38		-1.03		-1.20		-4.88	0.	000	0.0
Heavy Trucks:	86.40	-12.27		-1.03		-1.20		-5.25	0.	000	0.0
Inmitigated Noise	•										
	Leq Peak Hou			eq Eve		Leq	Night		Ldn		NEL
Autos:	71.		69.0		66.5		63		71.		71
Medium Trucks:	70.	-	68.4		64.5		65		72.	-	72
Heavy Trucks:	71.		70.2		63.1		63		71.	-	71
-	76	.1	74.1		69.7		68	.9	76.	4	76
Vehicle Noise:											
Vehicle Noise: Centerline Distance		ntour (in feet)	70 dF	RA.	65	dRA	1	SO dBA	55	dBA
		ntour (in feet	Ldn:	70 dB			dBA	(60 dBA 912		966

Thursday, August 8, 2019

Scenario: OY+P Road Name: Archibald Av.		Drainat N			
Road Segment: s/o Schaefer Av.			ame: Home nber: 11968		
SITE SPECIFIC INPUT DATA		NC	ISE MOD	EL INPUTS	
Highway Data	Site Con	ditions (H	lard = 10, S	oft = 15)	
Average Daily Traffic (Adt): 25,886 vehicles			Autos	s: 15	
Peak Hour Percentage: 10%	Me	dium Truc	ks (2 Axles): 15	
Peak Hour Volume: 2,589 vehicles	He	avy Truck	s (3+ Axles): 15	
Vehicle Speed: 55 mph	Vehicle				
Near/Far Lane Distance: 93 feet		icleType	Day	Evening N	light Daily
Site Data	ven		tos: 74.1°		15.6% 89.18%
	-	Au edium Tru			23.8% 7.12%
Barrier Height: 0.0 feet		Heavy Tru			13.9% 3.71%
Barrier Type (0-Wall, 1-Berm): 0.0		icavy ira	UNG. 02.1	70 0.570	10.570 0.7170
Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet	Noise So	ource Elev	ations (in	feet)	
Barrier Distance to Observer: 74.0 feet		Autos:	0.000		
	Mediu	m Trucks:	2.297		
Observer Height (Above Pad): 5.0 feet Pad Flevation: 0.0 feet	Heav	y Trucks:	8.004	Grade Adjus	stment: 0.0
Road Flevation: 0.0 feet	I ano Ea	uivalent Γ	istance (in	foot)	
Road Grade: 0.0%	Lane Lq	Autos:	57.782	recty	
Left View: -90.0 degrees	Madiu	m Trucks:	57.629		
Right View: 90.0 degrees		y Trucks:	57.644		
FHWA Noise Model Calculations					
VehicleType REMEL Traffic Flow Dista	ance Finite	Road	Fresnel	Barrier Atten	Berm Atten
Autos: 71.78 0.92	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks: 82.40 -10.06	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks: 86.40 -12.89	-1.03	-1.20	-5.25	0.000	0.000
Inmitigated Noise Levels (without Topo and barrier	attenuation)				
VehicleType Leq Peak Hour Leq Day L	Leq Evening	Leq Ni	ght	Ldn	CNEL
Autos: 70.5 68.4	65.8		62.9	70.5	70.9
Medium Trucks: 70.1 67.7	63.9		64.4	71.3	71.5
Heavy Trucks: 71.3 69.6	62.5		63.2	71.0	71.2
Vehicle Noise: 75.4 73.4	69.0		68.3	75.7	76.0
Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dE	3A	60 dBA	55 dBA
Ldn: CNEL:	178 185	383 398		825 857	1,777 1.846

Thursday, August 8, 2019

	FHW	/A-RD-77-108	HIGH	WAY I	NOISE PI	REDICT	ION MOI	DEL			-
Road Nam	io: OY+P ne: Archibald Av nt: s/o Ontario I						t Name: I lumber:				
SITE	SPECIFIC IN	PUT DATA				1	NOISE N	/ODE	L INPUTS	3	
Highway Data					Site Con	ditions	(Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt):	29,063 vehicle	es				,	Autos	: 15		
Peak Hour	Percentage:	10%			Me	dium Ti	ucks (2 A	(xles	: 15		
Peak H	lour Volume:	2,906 vehicles	S		He	avy Tru	cks (3+ A	(xles	: 15		
Ve	hicle Speed:	55 mph		ŀ	Vehicle I	Miv					
Near/Far La	ne Distance:	93 feet		ŀ		icleType		Dav	Evening	Night	Daily
Site Data					*011			74.19		15.6%	-
Par	rrier Height:	0.0 feet			М	edium 7	rucks:	69.09	6 7.1%	23.8%	7.08%
Barrier Type (0-W		0.0			1	Heavy 7	rucks:	82.19	6 3.9%	13.9%	3.65%
Centerline Di		74.0 feet									
Centerline Dist.	to Observer:	74.0 feet			Noise So				eet)		
Barrier Distance	to Observer:	0.0 feet				Auto		000			
Observer Height ((Above Pad):	5.0 feet				m Truck		297	0		
	ad Elevation:	0.0 feet			Heav	y Truck	s: 8.0	004	Grade Adj	ustmen	t: 0.0
Roa	ad Elevation:	0.0 feet		Ī	Lane Eq	uivalen	t Distand	e (in	feet)		
	Road Grade:	0.0%		Ī		Auto	s: 57.	782			
	Left View:	-90.0 degree	es		Mediu	m Truck	s: 57.0	629			
	Right View:	90.0 degree			Heav	ry Truck	s: 57.	644			
FHWA Noise Mode	el Calculations	;									
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fresn	el	Barrier Atte	en Be	rm Atten
Autos:	71.78	1.43		-1.0)5	-1.20		-4.73	0.0	00	0.000
Medium Trucks:	82.40	-9.58		-1.0)3	-1.20		-4.88	0.0	00	0.000
Heavy Trucks:	86.40	-12.45		-1.0)3	-1.20		-5.25	0.0	00	0.000
Unmitigated Noise	e Levels (witho	out Topo and	barrie	er atter	nuation)						
VehicleType	Leq Peak Hou	r Leq Day	′	Leq E	vening	Leq	Night		Ldn	-	NEL
Autos:	71.		68.9		66.3		63.4		71.0		71.4
Medium Trucks:	70.	-	68.2		64.3		64.8		71.8		72.0
Heavy Trucks:	71.	7	70.1		62.9		63.6	i .	71.4		71.6
Vehicle Noise:	75.	9	73.9		69.5		68.8		76.2		76.4
Centerline Distance	ce to Noise Co	ntour (in feet)								
					dBA		dBA		60 dBA		5 dBA
			Ldn:		91		12		887		,912
		Ci	NEL:	1	99	4	28		921	1	,985

	FH\	WA-RD-77-108	HIGHV	VAY N	OISE PI	REDICT	ION MO	DEL			
Road Nar	rio: OY+P me: Archibald A ent: s/o Merrill A					.,	t Name: lumber:		stead		
SITE	SPECIFIC IN	IPUT DATA				١	IOISE	MODE	L INPUT	S	
Highway Data				S	ite Cor	ditions	(Hard =	= 10, S	oft = 15)		
Average Daily	Traffic (Adt):	29,880 vehicle	es					Autos.	15		
Peak Hou	r Percentage:	10%			Me	edium Tr	ucks (2	Axles).	15		
Peak I	Hour Volume:	2,988 vehicles	S		He	avy Tru	cks (3+	Axles).	15		
V	ehicle Speed:	55 mph		1/	ehicle	Miv					
Near/Far La	ane Distance:	93 feet		-		icleType	9	Dav	Evening	Night	Daily
Site Data							Autos:	74.1%		15.6%	,
D.	arrier Height:	0.0 feet			М	edium T		69.0%		23.8%	
Barrier Type (0-V		0.0 1001				Heavy T	rucks:	82.1%	3.9%	13.9%	3.62%
	ist to Barrier:	74.0 feet									
Centerline Dist		74.0 feet		Λ	loise So	ource E		٠,	eet)		
Barrier Distance	to Observer:	0.0 feet				Auto		.000			
Observer Height		5.0 feet				m Truck		.297			
	Pad Flevation:	0.0 feet			Hea	y Truck	:s: 8	.004	Grade Ad	ijustmeni	. 0.0
Ro	ad Elevation:	0.0 feet		L	ane Eq	uivalen	t Distar	ce (in	feet)		
	Road Grade:	0.0%				Auto	s: 57	.782			
	Left View:	-90.0 degree	es		Mediu	m Truck	s: 57	.629			
	Right View:	90.0 degree	es		Hear	y Truck	s: 57	.644			
FHWA Noise Mod	lel Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fres	nel	Barrier Att	en Bei	rm Atten
Autos.	71.78	1.56		-1.05		-1.20		-4.73	0.0	000	0.000
Medium Trucks.	82.40	-9.48		-1.03		-1.20		-4.88	0.	000	0.000
Heavy Trucks.	86.40	-12.37		-1.03		-1.20		-5.25	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier	attenu	ıation)						
VehicleType	Leq Peak Hou			Leq Ev			Night		Ldn		NEL
Autos.			69.0		66.4		63.	-	71.		71.5
Medium Trucks.			68.3		64.4		64.	-	71.	-	72.1
Heavy Trucks.			70.2		63.0		63.		71.		71.7
Vehicle Noise			74.0		69.6		68	9	76.	3	76.5
Centerline Distan	ce to Noise Co	ontour (in feet)	70 '	D.4		-10.4		20 -/ 0.4		-104
			Later	70 d			dBA		60 dBA		dBA
			Ldn:	194			18		901		941
		Ci	NEL:	202	4	4	34		936	2,	,016

	FHV	VA-RD-77-108	HIGH	WAY NO	DISE P	REDICTIO	ON MOE	EL			
	o: OY+P e: Archibald A					Project I	Vame: H		tead		
Road Name Road Seamen						JOD IVU	mber: 1	1968			
	,,										
	SPECIFIC IN	PUT DATA							L INPUT	S	
Highway Data				Si	te Cor	iditions (i					
Average Daily	Traffic (Adt):	28,254 vehicle	es				-	utos:	15		
Peak Hour I	Percentage:	10%				edium True			15		
Peak H	our Volume:	2,825 vehicle	S		He	avy Truck	ks (3+ A	xles):	15		
Vel	hicle Speed:	55 mph		V	ehicle	Mix					
Near/Far Lar	ne Distance:	93 feet			Veh	icleType	L	Day	Evening	Night	Daily
Site Data						A	ıtos: T	74.1%	10.3%	15.6%	89.27%
Rar	rier Heiaht:	0.0 feet			М	edium Tru	icks: 6	9.0%	7.1%	23.8%	7.08%
Barrier Type (0-Wa	all, 1-Berm):	0.0				Heavy Tru	icks: 8	32.1%	3.9%	13.9%	3.66%
Centerline Dis		74.0 feet		N	oise S	ource Ele	vations	(in fe	et)		
Centerline Dist. t		74.0 feet				Autos	0.0	00			
Barrier Distance t		0.0 feet			Mediu	m Trucks.	2.2	97			
Observer Height (/	,	5.0 feet			Hear	vy Trucks:	8.0	04	Grade Ad	justmen	t: 0.0
	d Elevation:	0.0 feet		-							
	d Elevation:	0.0 feet		Li	ane Eq	uivalent l		_	eet)		
F	Road Grade:	0.0%				Autos:					
	Left View:	-90.0 degre				m Trucks.					
	Right View:	90.0 degre	es		Hear	vy Trucks.	57.6	44			
FHWA Noise Mode	l Calculation:	S									
VehicleType	REMEL	Traffic Flow	Dist	tance	Finite	Road	Fresne	_	Barrier Att		rm Atten
Autos:	71.78	1.31		-1.05		-1.20		4.73		000	0.00
Medium Trucks:	82.40	-9.70		-1.03		-1.20		4.88		000	0.000
Heavy Trucks:	86.40	-12.57		-1.03		-1.20	-	5.25	0.0	000	0.00
Unmitigated Noise											
	Leq Peak Hou 70		68.7	Leq Eve		Leq N	light 63.2		Ldn		NEL 71.
Autos:					66.2				70.9		
Medium Trucks:	70 71		68.1 70.0		64.2 62.8		64.7		71.7		71.9
Heavy Trucks:							63.5		71.3		71.5
Vehicle Noise:	75		73.8		69.4		68.6		76.1	ı	/6.3
Centerline Distanc	e to Noise Co	ontour (in feet)	70 dE	24	65 d	RΔ	6	0 dBA	55	i dBA
			Ldn:	188		404		- 0	871		.877
		0	NFI:	195		420			905		,949
		C	•	130		+21	-		000	1,	,0 10

Thursday, August 8, 2019

	FHV	VA-RD-77-108	HIGH	HWAY	NOISE PE	REDICTI	ON M	ODEL			
Scenario: OY+ Road Name: Arch Road Segment: s/o l	hibald A					Project Job N		: Home : 11968	stead		
SITE SPECI	IFIC IN	IPUT DATA				N	OISE	MODE	L INPUT	S	
Highway Data					Site Con	ditions (Hard	= 10, S	oft = 15)		
Average Daily Traffic	(Adt):	28,225 vehicle	es					Autos.	15		
Peak Hour Percen	ntage:	10%			Me	dium Tru	icks (2	Axles).	15		
Peak Hour Vo.	lume:	2,823 vehicles	S		He	avy Truc	ks (3+	- Axles).	15		
Vehicle Si	peed:	50 mph			Vehicle I	187					
Near/Far Lane Dist	ance:	78 feet				icleType		Day	Evening	Night	Daily
Site Data					VCII		lutos:	74.19		15.6%	,
					1.4	edium Tr		69.09		23.8%	
Barrier He		0.0 feet 0.0				Heavy Tr		82.19		13.9%	
Barrier Type (0-Wall, 1-B Centerline Dist. to Ba		0.0 76.0 feet			,	icavy ii	ucns.	02.17	0.570	10.070	0.407
Centerline Dist. to Obs		76.0 feet			Noise Sc	ource Ele	evatio	ns (in f	eet)		
Barrier Distance to Obsi		0.0 feet				Autos	s: (0.000			
		5.0 feet			Mediu	m Trucks	s: 2	2.297			
Observer Height (Above Pad Flev		0.0 feet			Heav	y Trucks	s: 8	3.004	Grade Ac	ljustment	: 0.0
Road Flev		0.0 feet			Lane Eq	uivalent	Dista	nce (in	feet)		
Road G		0.0%				Autos		5.422	,		
	View:	-90.0 degree	00		Madiu	m Trucks		5.286			
Right		90.0 degree				y Trucks		5.299			
FHWA Noise Model Calc	ulation	s									
VehicleType REN		Traffic Flow	Dis	stance	Finite	Road	Fres	snel	Barrier At	en Bei	m Atten
Autos:	70.20	1.73		-1.8	35	-1.20		-4.73	0.	000	0.000
Medium Trucks:	81.00	-9.34		-1.8	34	-1.20		-4.88	0.	000	0.000
Heavy Trucks:	85.38	-12.43		-1.8	34	-1.20		-5.25	0.	000	0.000
Unmitigated Noise Level			barri	er atte	nuation)						
,,	eak Hou			Leq E	vening	Leq I			Ldn		NEL
Autos:	68		66.8		64.2		61		68.	-	69.3
Medium Trucks:	68		66.2		62.4		62		69.	-	70.0
Heavy Trucks:	69		68.3		61.1		61 66		69. 74.	_	69.8 74.5
Vehicle Noise:	73	.9	71.9		67.5				74.		
Vehicle Noise:					67.5		00	1.0	74.		74.0
Vehicle Noise:				70	dBA	65 (74. 60 dBA		dBA
		ontour (in feet				65 d 31	iBA			55	

Thursday, August 8, 2019

	FH\	WA-RD-77-108	HIGH	WAY N	IOISE P	REDICT	ION MC	DEL			
Road Nan	io: OY+P ne: Archibald A nt: s/o 65th St.						t Name: Number:		tead		
SITE	SPECIFIC IN	IPUT DATA				1	NOISE I	MODE	L INPUT	S	
Highway Data					Site Cor	nditions	(Hard =	: 10, Sc	ft = 15)		
Average Daily	Traffic (Adt):	31,884 vehicle	es					Autos:	15		
Peak Hour	Percentage:	10%			Me	edium Ti	rucks (2	Axles):	15		
Peak H	lour Volume:	3,188 vehicle	s		He	eavy Tru	icks (3+.	Axles):	15		
Ve	hicle Speed:	50 mph		H	Vehicle	Mix					
Near/Far La	ne Distance:	78 feet		F		icleTyp	е	Day	Evening	Night	Daily
Site Data							Autos:	74.1%	0	15.69	_
Ra	rrier Height:	0.0 feet			M	ledium 7	rucks:	69.0%	7.1%	23.89	6.97%
Barrier Type (0-W	/all, 1-Berm):	0.0				Heavy 1	rucks:	82.1%	3.9%	13.99	6 3.31%
Centerline Di		76.0 feet		1	Noise S	ource E	levation	s (in fe	et)		
Centerline Dist.		76.0 feet				Auto	os: 0.	.000			
Barrier Distance		0.0 feet			Mediu	m Truck	ks: 2.	297			
Observer Height	. ,	5.0 feet			Hea	vy Truck	ks: 8.	.004	Grade Ad	justmer	nt: 0.0
	ad Elevation:	0.0 feet		H			t Distan	//	41		
	ad Elevation:	0.0 feet		Ľ.	Lane Eq	Auto		422	eet)		
	Road Grade:	0.0%			Modiu	Auto m Truck		.422			
		-90.0 degree				vy Truci	00	299			
	Right View:	90.0 degree	es		rica	vy much	10. 00	.299			
FHWA Noise Mod											
VehicleType	REMEL	Traffic Flow	Dis	stance	_	Road	Fresi		Barrier Att		erm Atten
Autos: Medium Trucks:	70.20 81.00	2.27 -8.83		-1.8 -1.8	-	-1.20 -1.20		-4.73 -4.88		000	0.000
Heavy Trucks:		-8.83 -12.07		-1.8		-1.20		-4.88 -5.25		000	0.000
Unmitigated Noise		.=				-1.20		-5.25	0.0	J00	0.000
VehicleType	Leg Peak Hou				vening	100	Night		Ldn		ONEL
Autos:	69		67.3	LUY L	64.8		61.	8	69.4		69.8
Medium Trucks:	69	.1	66.7		62.9		63.	4	70.3	3	70.5
Heavy Trucks:	70	.3	68.6		61.5		62.	2	70.0)	70.2
Vehicle Noise:	74	.4	72.4		68.0		67.	3	74.	7	74.9
Centerline Distant	ce to Noise Co	ontour (in feet)								
				70 (dBA	65	dBA	6	0 dBA	5.	5 dBA
			Ldn:	15		-	37		726		1,563
		C	NEL:	16	32	3	350		753	1	1,623

	FH\	WA-RD-77-108	HIGH	1 YAWH	NOISE P	REDICT	ION MC	DEL			
Road Nam	io: OY+P le: Limonite A nt: e/o Hellma						Name: lumber:				
SITE S	SPECIFIC IN	IPUT DATA				Ν	IOISE	MODE	L INPUT	S	
Highway Data					Site Cor	nditions	(Hard =	: 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	934 vehicl	es					Autos:	15		
Peak Hour	Percentage:	10%			Me	edium Tr	ucks (2	Axles):	15		
Peak H	lour Volume:	93 vehicle	s		He	eavy True	cks (3+	Axles):	15		
Ve	hicle Speed:	50 mph		 	Vehicle	Mix					
Near/Far La	ne Distance:	78 feet		F		icleType	9	Day	Evening	Night	Daily
Site Data							Autos:	74.1%	10.3%	15.6%	86.499
Bai	rrier Height:	0.0 feet			M	ledium T	rucks:	69.0%	7.1%	23.8%	6.07%
Barrier Type (0-W		0.0				Heavy T	rucks:	82.1%	3.9%	13.9%	7.449
Centerline Dis	st. to Barrier:	76.0 feet			Noise S	ource Fl	lovation	e (in f	oof)		
Centerline Dist.	to Observer:	76.0 feet		F	140/36 0	Auto		.000	501)		
Barrier Distance	to Observer:	0.0 feet			Madiu	m Truck		297			
Observer Height (Above Pad):	5.0 feet				vy Truck		.004	Grade Ad	liustmen	t· 0.0
Pa	ad Elevation:	0.0 feet		L						,	
Ros	ad Elevation:	0.0 feet			Lane Eq				feet)		
I	Road Grade:	0.0%				Auto		.422			
	Left View:	-90.0 degre				m Truck		.286			
	Right View:	90.0 degre	es		Hea	vy Truck	s: 65	.299			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow		stance		Road	Fres		Barrier Att		rm Atten
Autos:	70.20			-1.8	-	-1.20		-4.73		000	0.00
Medium Trucks:	81.00			-1.8		-1.20		-4.88		000	0.00
Heavy Trucks:	85.38	-23.87		-1.8	4	-1.20		-5.25	0.0	000	0.00
Unmitigated Noise				er atten	nuation)						
VehicleType	Leq Peak Hou	. , . ,		Leq E	vening	,	Night		Ldn	_	NEL
Autos:		3.9	51.8		49.3		46.	-	53.	-	54.
Medium Trucks:		3.2	50.8		47.0		47.		54.		54.
Heavy Trucks: Vehicle Noise:		3.5	56.8 58.8		49.7 53.6		50. 53.	•	58.: 60.:		58. 60.
					33.0	'	33.	۷.	60.	'	60.
Centerline Distance	e to Noise C	ontour (in fee	t)	70	dBA	65	dBA		60 dBA	55	5 dBA
			Ldn:		8		39		85		183
		С	NEL:	1	9	4	11		88		189

FH	IWA-RD-77-108	HIGHWA	Y NOISE	PREDICTIO	N MODEL			
Scenario: OY+P Road Name: Kimball A Road Segment: w/o Hellm					lame: Home mber: 1196			
SITE SPECIFIC I	NPUT DATA			NC	ISE MOD	EL INPUT	S	
Highway Data			Site Co	onditions (F	lard = 10, S	Soft = 15)		
Average Daily Traffic (Adt):	15,405 vehicle	es			Auto	s: 15		
Peak Hour Percentage:	10%		1	∕ledium Truc	ks (2 Axles): 15		
Peak Hour Volume:	1,541 vehicle	s	1	Heavy Truck	s (3+ Axles): 15		
Vehicle Speed:	50 mph		Vehicl	o Miv				
Near/Far Lane Distance:	51 feet			ehicleType	Dav	Evening	Night	Dailv
Site Data			-		tos: 74.1	Ü	15.6%	. ,
Barrier Height:	0.0 feet			Medium Tru	cks: 69.0	% 7.1%	23.8%	7.00%
Barrier Type (0-Wall, 1-Berm):	0.0			Heavy Tru	cks: 82.1	% 3.9%	13.9%	3.60%
Centerline Dist. to Barrier:	49.0 feet		Noise	Source Elev	ations (in	feet)		
Centerline Dist. to Observer:	49.0 feet			Autos:	0.000			
Barrier Distance to Observer:	0.0 feet		Med	ium Trucks:	2.297			
Observer Height (Above Pad):	5.0 feet		He	avy Trucks:	8.004	Grade Ad	justment	0.0
Pad Elevation:	0.0 feet				N-4 (!-			
Road Elevation:	0.0 feet		Lane E	quivalent E		reet)		
Road Grade:	0.0%			Autos:	42.140			
Left View:	-90.0 degree			ium Trucks: avy Trucks:	41.929			
Right View:	90.0 degree	es	П	avy Trucks.	41.950			
FHWA Noise Model Calculation								
VehicleType REMEL	Traffic Flow	Distanc		te Road	Fresnel	Barrier Att		m Atten
Autos: 70.20			1.01	-1.20	-4.64		000	0.00
Medium Trucks: 81.00 Heavy Trucks: 85.3			1.04	-1.20 -1.20	-4.87 -5.44		000	0.00
					-5.44	<i>i</i> 0.0	J00	0.00
VehicleType Leg Peak Ho			tenuation g Evening	,	ioht	Ldn		NEL
., ., ., .		67.0	y ⊑veriiriy 64		61.5	69.1		69
		66.5	62		63.1	70.		70.
Heavy Trucks: 7	0.4	68.7	61	.6	62.3	70.	1	70.
· —	4.3	72.3	67	.8	67.1	74.	5	74.
Centerline Distance to Noise C	Contour (in feet)						
			70 dBA	65 dE	BA	60 dBA	55	dBA
		Ldn:	98	212		457		985
		Luii.	90	212		437	٤	,00

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FH	WA-RD-77-108	HIGHWA	Y NOISE P	REDICTION	ON MO	DDEL			
Scenario: OY+P Road Name: Limonite A Road Segment: e/o Archib				Project I Job No		Home: 11968	stead		
SITE SPECIFIC II	NPUT DATA			N	OISE	MODE	L INPUT	S	
Highway Data			Site Cor	ditions (Hard:	= 10, Sc	oft = 15)		
Average Daily Traffic (Adt):	20,515 vehicle	es				Autos:	15		
Peak Hour Percentage:	10%		Me	edium Tru	cks (2	Axles):	15		
Peak Hour Volume:	2,051 vehicles	S	He	avy Truc	ks (3+	Axles):	15		
Vehicle Speed:	50 mph		Vehicle						
Near/Far Lane Distance:	78 feet			icleType		Day	Evening	Night	Daily
Site Data			Ven		utos:	74.1%	-	15.6%	,
			- M	edium Tr		69.0%		23.8%	
Barrier Height:	0.0 feet 0.0			Heavy Tr		82.1%		13.9%	
Barrier Type (0-Wall, 1-Berm): Centerline Dist. to Barrier:	76.0 feet							10.070	0.107
Centerline Dist. to Observer:	76.0 feet		Noise S	ource Ele			eet)		
Barrier Distance to Observer:	0.0 feet			Autos		.000			
Observer Height (Above Pad):	5.0 feet			m Trucks		.297			
Pad Flevation:	0.0 feet		Hear	vy Trucks	: 8	.004	Grade Ad	justment	: 0.0
Road Flevation:	0.0 feet		Lane Eq	uivalent	Distar	nce (in	feet)		
Road Grade:	0.0%			Autos		422			
Left View:	-90.0 degree	95	Mediu	m Trucks	: 65	.286			
Right View:	90.0 degree		Hear	vy Trucks	: 65	5.299			
FHWA Noise Model Calculation	ns								
VehicleType REMEL	Traffic Flow	Distano	e Finite	Road	Fres	nel	Barrier Att	en Ber	m Atten
Autos: 70.20	0.33	-1	1.85	-1.20		-4.73	0.0	000	0.000
Medium Trucks: 81.00	-10.71	-1	1.84	-1.20		-4.88	0.0	000	0.000
Heavy Trucks: 85.38			1.84	-1.20		-5.25	0.0	000	0.000
Inmitigated Noise Levels (with									
VehicleType Leq Peak Ho			Evening	Leq I			Ldn	-	NEL
		65.4	62.8		59	-	67.	-	67.9
Medium Trucks: 6		64.8	61.0		61	-	68.4		68.6
	8.9	67.2	60.1		60 65	-	68.0 73.0		68.8 73.2
	2.7	70.7	66.2						10.4
Vehicle Noise: 7.			66.2		00	.5	73.	,	13.2
)	0 dBA	65 0			60 dBA		dBA
Vehicle Noise: 7.	contour (in feet)			IBA			55	

Thursday, August 8, 2019

	FHW <i>F</i>	A-RD-77-108	HIGHWA	AY N	IOISE PE	REDICT	ION MO	DEL			
Scenario: (Road Name: L Road Segment: e	imonite Av.	Av.					Name: I lumber:				
SITE SPE	CIFIC INP	UT DATA				1	NOISE N	/ODE	L INPUT	S	
Highway Data					Site Con	ditions	(Hard =	10, S	oft = 15)		
Average Daily Trai	ffic (Adt): 2:	2,571 vehicle	s					Autos	: 15		
Peak Hour Per	centage:	10%			Me	dium Tı	ucks (2 /	Axles)	: 15		
Peak Hour	Volume: 2	,257 vehicles			He	avy Tru	cks (3+ /	Axles)	: 15		
Vehicle	e Speed:	50 mph		١,	Vehicle I	Miv					
Near/Far Lane I	Distance:	78 feet		Η,		icleType		Dav	Evening	Night	Daily
Site Data				+	*0//		Autos:	74.19		15.6%	
Parrio	r Height:	0.0 feet			Me	edium 7	rucks:	69.09	6 7.1%	23.8%	7.03%
Barrier Type (0-Wall,	-	0.0			F	leavy 7	rucks:	82.19	6 3.9%	13.9%	3.71%
Centerline Dist. to		76.0 feet		L							
Centerline Dist. to C	Observer:	76.0 feet		-	Voise Sc				eet)		
Barrier Distance to C	Observer:	0.0 feet				Auto		000			
Observer Height (Abo	ove Pad):	5.0 feet				m Truck		297	0		
	levation:	0.0 feet			Heav	y Truck	s: 8.	004	Grade Ad	ustmen	0.0
Road E	levation:	0.0 feet		L	Lane Eq	uivalen	t Distan	ce (in	feet)		
Roa	d Grade:	0.0%				Auto	s: 65.	422			
L	.eft View:	-90.0 degree	s		Mediui	m Truck	s: 65.	286			
Rig	ght View:	90.0 degree	s		Heav	y Truck	s: 65.	299			
FHWA Noise Model C	alculations										
VehicleType F	REMEL 7	Fraffic Flow	Distan	се	Finite	Road	Fresr	iel	Barrier Att	en Bei	rm Atten
Autos:	70.20	0.75		-1.85	5	-1.20		-4.73	0.0	000	0.000
Medium Trucks:	81.00	-10.29		-1.84	4	-1.20		-4.88	0.0	000	0.000
Heavy Trucks:	85.38	-13.06		-1.84	4	-1.20		-5.25	0.0	000	0.000
Unmitigated Noise Le	•		_	tten	uation)						
	g Peak Hour	Leq Day		eg Ev	/ening	Leq	Night		Ldn	_	NEL
Autos:	67.9		55.8		63.3		60.3		67.9		68.3
Medium Trucks:	67.7		55.3		61.4		61.9		68.8	-	69.1
Heavy Trucks: Vehicle Noise:	69.3 73.1		67.6 71.1		60.5 66.6		61.2 65.9		69.0 73.4		69.2 73.6
					30.0		00.0		70	•	70.0
Centerline Distance to	n Noise Con										
Centerline Distance to	o Noise Con	tour (in feet)		70 a	1BA	65	dBA		60 dBA	55	dBA
Centerline Distance to	o Noise Con			70 d			dBA 75		60 dBA 593		dBA 277

	FH\	WA-RD-77-10	8 HIGI	HWAY N	IOISE P	REDICT	ION MO	DDEL			
	o: OY+P e: Limonite A nt: e/o Scholar						t Name: lumber:				
SITE S	SPECIFIC IN	IPUT DATA				1	NOISE	MODE	L INPUTS	3	
Highway Data				,	Site Cor	nditions	(Hard:	= 10, S	oft = 15)		
Average Daily	Traffic (Adt):	27,319 vehic	les					Autos	15		
Peak Hour	Percentage:	10%			Me	edium Tı	ucks (2	Axles)	15		
Peak H	our Volume:	2,732 vehicle	es		He	eavy Tru	cks (3+	Axles)	15		
Vel	hicle Speed:	50 mph		-	Vehicle	Mix					
Near/Far Lar	ne Distance:	78 feet		i i		icleType	9	Day	Evening	Night	Daily
Site Data							Autos:	74.19	6 10.3%	15.6%	89.29%
Bar	rier Height:	0.0 feet			M	ledium 7	rucks:	69.09	7.1%	23.8%	7.05%
Barrier Type (0-W		0.0				Heavy 7	rucks:	82.19	3.9%	13.9%	3.66%
Centerline Dis	st. to Barrier:	76.0 feet			Noise S	ource F	levatio	ns (in f	eet)		
Centerline Dist.	to Observer:	76.0 feet		F	10,00	Auto		.000	001)		
Barrier Distance t	to Observer:	0.0 feet			Madiu	m Truck		.297			
Observer Height (Above Pad):	5.0 feet				vy Truck		.004	Grade Ad	iustment	0.0
Pa	ad Elevation:	0.0 feet									
Roa	nd Elevation:	0.0 feet		1	Lane Eq				feet)		
F	Road Grade:	0.0%				Auto		5.422			
	Left View:	-90.0 degre				m Truck		5.286			
	Right View:	90.0 degre	ees		Hea	vy Truck	rs: 65	5.299			
FHWA Noise Mode	l Calculation	s									
VehicleType	REMEL	Traffic Flow		stance		Road	Fres		Barrier Atte		m Atten
Autos:	70.20	1.58	-	-1.8	-	-1.20		-4.73	0.0		0.000
Medium Trucks:	81.00			-1.8		-1.20		-4.88		000	0.000
Heavy Trucks:	85.38	-12.30)	-1.8	4	-1.20		-5.25	0.0	000	0.000
Unmitigated Noise											
,,,	Leq Peak Ho	. , .	,	Leq E	vening		Night		Ldn		NEL
Autos:		3.7	66.6		64.1		61		68.7		69.
Medium Trucks:		3.5	66.1		62.3		62		69.7		69.9
Heavy Trucks: Vehicle Noise:		3.9	68.4 71.9		61.2 67.5		61 66		69.8 74.2		69.9 74.4
					07.0		- 00		17.2	-	14.
Centerline Distanc	e to Noise C	ontour (in fee	τ)	70 0	dBA	65	dBA	Т.	60 dBA	55	dBA
			Ldn:		15		12	-1	671		447

	FHWA	-RD-77-108 H	HIGHWAY	NOISE P	REDICTIO	N MODEL			
Road Nam	io: OY+P ne: Limonite Av. nt: e/o Sumner A	v.				lame: Home mber: 11968			
	SPECIFIC INPU	JT DATA				ISE MOD		S	
Highway Data				Site Con	ditions (F	lard = 10, S	oft = 15)		
Average Daily	Traffic (Adt): 24	1,048 vehicles	3			Autos	: 15		
Peak Hour	Percentage:	10%		Me	dium Truc	ks (2 Axles,	: 15		
Peak H	lour Volume: 2,	405 vehicles		He	avy Truck	s (3+ Axles,	: 15		
Ve	hicle Speed:	50 mph		Vehicle I	Mix				
Near/Far La	ne Distance:	78 feet			icleType	Day	Evening	Night	Daily
Site Data					AL	itos: 74.1	% 10.3%	15.6%	89.27%
Ra	rrier Height:	0.0 feet		M	edium Tru	cks: 69.0°	% 7.1%	23.8%	7.04%
Barrier Type (0-W	-	0.0		F	Heavy Tru	cks: 82.19	% 3.9%	13.9%	3.69%
Centerline Di		76.0 feet		Noice Se	urco Elo	vations (in	foot)		
Centerline Dist.	to Observer:	76.0 feet		NOISE SC	Autos:		eei)		
Barrier Distance	to Observer:	0.0 feet		Modiu	m Trucks:				
Observer Height ((Above Pad):	5.0 feet			v Trucks:		Grade Ad	iustment	. 0 0
Pa	ad Elevation:	0.0 feet			•			douriorit	0.0
Roa	ad Elevation:	0.0 feet		Lane Eq	uivalent L	Distance (in	feet)		
	Road Grade:	0.0%			Autos:				
	Left View: -	90.0 degrees	3		m Trucks:	00.200			
	Right View:	90.0 degrees	3	Heav	y Trucks:	65.299			
FHWA Noise Mode	el Calculations								
VehicleType	REMEL T	raffic Flow	Distance	Finite	Road	Fresnel	Barrier Att	en Ber	m Atten
Autos:	70.20	1.02	-1.8		-1.20	-4.73		000	0.000
Medium Trucks:	81.00	-10.01	-1.8		-1.20	-4.88		000	0.000
Heavy Trucks:	85.38	-12.81	-1.3	84	-1.20	-5.25	0.0	000	0.000
Unmitigated Noise		t Topo and b							
VehicleType	Leq Peak Hour	Leq Day		evening	Leq N	_	Ldn		VEL
Autos:	68.2		6.1	63.5		60.6	68.2		68.6
Medium Trucks:	68.0	-	5.6	61.7		62.2	69.1		69.3
Heavy Trucks:	69.5		7.9	60.7		61.4	69.3		69.4
Vehicle Noise:	73.4		1.4	66.9		66.2	73.7	7	73.9
Centerline Distant	ce to Noise Cont	our (in feet)							

Thursday, August 8, 2019

	FH\	VA-RD-77-108 HI	GHWAY	NOISE PE	REDICTIO	N MC	DEL			
Scenario: Road Name: Road Segment:		Project Name: Homestead Job Number: 11968								
SITE SF	NOISE MODEL INPUTS									
Highway Data		Site Conditions (Hard = 10, Soft = 15)								
Average Daily Traffic (Adt): 30,050 vehicles				Autos: 15						
Peak Hour Percentage: 10%				Medium Trucks (2 Axles): 15						
Peak Hour Volume: 3,005 vehicles				Heavy Trucks (3+ Axles): 15						
Vehi	cle Speed:	45 mph		Vehicle I	Miv					
Near/Far Lane	Distance:	78 feet			icleType		Day	Evening	Night	Daily
Site Data				1011		itos:	74.1%	-	15.6%	89.29%
				Me	edium Tru		69.0%		23.8%	7.07%
	er Height:	0.0 feet 0.0			leavy Tru		82.1%		13.9%	3.64%
Barrier Type (0-Wal		76.0 feet							10.070	0.017
Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet				Noise Source Elevations (in feet)						
Barrier Distance to		0.0 feet			Autos:	-	.000			
Observer Height (Al		5.0 feet			n Trucks:	_	.297			
Pad Flevation: 0.0 feet				Heav	y Trucks:	8.	.004	Grade Ad	justment.	0.0
Road Flevation: 0.0 feet				Lane Equivalent Distance (in feet)						
Road Grade: 0.0%				Autos: 65.422						
Left View: -90.0 degrees				Mediui	n Trucks:	65	.286			
F	Right View:	90.0 degrees		Heav	y Trucks:	65	.299			
FHWA Noise Model	Calculation	s		1						
VehicleType	REMEL	Traffic Flow	Distance	Finite	Road	Fresi		Barrier At	en Ber	m Atten
Autos:	68.46	2.45	-1.		-1.20		-4.73		000	0.000
Medium Trucks:	79.45	-8.56	-1.		-1.20		-4.88	0.	000	0.000
Heavy Trucks:	84.25	-11.45	-1.	84	-1.20		-5.25	0.	000	0.000
Unmitigated Noise L			_							
,,	eq Peak Hou			Evening	Leq Ni	~		Ldn		IEL
Autos:			.8	63.2	60.2		_	67.		
Medium Trucks: 67.8				61.6		62.1		69.0		69.2
Heavy Trucks: 69.8				61.0		61.7		69.5		69.7
Vehicle Noise:	73		.4	66.8		66.	2	73.	6	73.9
Centerline Distance	to Noise Co	ontour (in feet)	7/) dBA	05 -15	24		00 -ID4		-ID 4
		l d		132	65 dE			60 dBA 614		dBA 324
		La CNF		132 137	285 296			637	,	324 373
		CNE	L.	131	290			031	1,	010

Thursday, August 8, 2019

	FH\	WA-RD-77-108	HIGHV	VAY N	OISE PI	REDICT	ION MO	DDEL			
	rio: IY ne: Archibald A ent: n/o Chino A						t Name: lumber:		stead		
SITE	SPECIFIC IN	IPUT DATA				N	IOISE	MODE	L INPUT	S	
Highway Data				S	Site Con	ditions	(Hard =	= 10, S	oft = 15)		
Average Daily	Traffic (Adt):	32,221 vehicle	es					Autos.	15		
Peak Hou	r Percentage:	10%			Me	edium Tr	ucks (2	Axles).	15		
Peak I	Hour Volume:	3,222 vehicles	3		He	avy Tru	cks (3+	Axles).	15		
V	ehicle Speed:	55 mph		-	/ehicle	Miss					
Near/Far La	ane Distance:	93 feet		-		icleType		Dav	Evening	Night	Daily
Site Data					¥ C//		Autos:	74.19		15.6%	
					M	edium T				23.8%	
	arrier Height:	0.0 feet				Heavy T				13.9%	
Barrier Type (0-V	vall, 1-Berm): ist. to Barrier:	0.0 74.0 feet				noury n	ruono.	02.17	0.070	10.07	0.0070
Centerline Dist		74.0 feet		٨	loise S	ource E	levatio	ns (in f	eet)		
Barrier Distance		0.0 feet				Auto	s: 0	.000			
Observer Height		5.0 feet			Mediu	m Truck	s: 2	.297			
	Pad Elevation:	0.0 feet			Hear	vy Truck	:s: 8	.004	Grade Ad	justmen	t: 0.0
	ad Elevation:	0.0 feet		L	ane Eq	uivalen	t Distar	nce (in	feet)		
710	Road Grade:	0.0%				Auto		.782			
	Left View:	-90.0 degree	ae .		Mediu	m Truck		629			
	Right View:	90.0 degree			Hear	y Truck		.644			
FHWA Noise Mod	lel Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fres	nel	Barrier Att	en Be	rm Atten
Autos.	71.78	1.90		-1.05	5	-1.20		-4.73	0.0	000	0.000
Medium Trucks.	82.40	-9.16		-1.03	3	-1.20		-4.88	0.0	000	0.000
Heavy Trucks.	86.40	-12.40		-1.03	3	-1.20		-5.25	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier	atteni	uation)						
VehicleType	Leq Peak Hou	ır Leq Day	, I	Leq Ev	ening	Leq	Night		Ldn	С	NEL
Autos.	: 71	.4	69.3		66.8		63.	.8	71.4	4	71.8
Medium Trucks.	: 71	.0	68.6		64.8		65.	.2	72.2	2	72.4
Heavy Trucks.	71	.8	70.1		63.0		63.	.7	71.	5	71.7
Vehicle Noise	: 76	i.2	74.2		69.9		69	.1	76.	5	76.7
Centerline Distan	ce to Noise C	ontour (in feet)								
				70 d			dBA	- (60 dBA		dBA
			Ldn:	20	-		32		931		,005
		C	VEL:	20	8	4	49		967	2	,083

	FHW	A-RD-77-108	HIGH	WAY N	IOISE P	REDICT	ION MC	DEL				
	io: IY e: Archibald Av nt: s/o Schaefer						Name: lumber:	Homes 11968	tead			
SITE S	SPECIFIC INF	PUT DATA				N	IOISE	MODE	L INPUT	S		
Highway Data				,	Site Cor	nditions	(Hard =	: 10, So	ft = 15)			
Average Daily	Traffic (Adt): 2	7,730 vehicle	s					Autos:	15			
Peak Hour	Percentage:	10%			Me	edium Tru	ucks (2	Axles):	15			
Peak H	our Volume:	2,773 vehicles			He	eavy Truc	cks (3+	Axles):	15			
Ve	hicle Speed:	55 mph			Vehicle	Miv						
Near/Far Lai	ne Distance:	93 feet		F		icleType		Dav	Evening	Night	Daily	
Site Data							Autos:	74.1%	v	15.6%		
Rar	rier Height:	0.0 feet			M	ledium Ti	rucks:	69.0%	7.1%	23.8%	7.029	
Barrier Type (0-W		0.0				Heavy Ti	rucks:	82.1%	3.9%	13.9%	3.339	
Centerline Dis	st. to Barrier:	74.0 feet		1	Noise S	ource El	evation	s (in fe	et)			
Centerline Dist.	to Observer:	74.0 feet		F		Auto		000	/			
Barrier Distance	to Observer:	0.0 feet			Mediu	m Truck		297				
Observer Height (Above Pad):	5.0 feet			Heavy Trucks: 8.004 Grade Adjustment: 0.0							
Pa	ad Elevation:	0.0 feet		L						,		
Roa	ad Elevation:	0.0 feet		1	Lane Eq	uivalent			eet)			
F	Road Grade:	0.0%				Auto		.782				
	Left View:	-90.0 degree	S			m Truck		.629				
	Right View:	90.0 degree	:S		Hea	vy Truck	s: 57	.644				
FHWA Noise Mode	el Calculations											
VehicleType		Traffic Flow	Dist	ance		Road	Fres		Barrier Att		m Atten	
Autos:	71.78	1.25		-1.0	-	-1.20		-4.73		000	0.00	
Medium Trucks:	82.40	-9.82		-1.0		-1.20		-4.88		000	0.00	
Heavy Trucks:	86.40	-13.06		-1.0	3	-1.20		-5.25	0.0	000	0.00	
Unmitigated Noise								,				
,,	Leq Peak Hour			Leq E	vening	,	Night		Ldn		NEL	
Autos:	70.8		38.7		66.1		63.	-	70.	-	71.	
Medium Trucks:	70.4		0.86		64.1		64.	-	71.	-	71.	
Heavy Trucks: Vehicle Noise:	71.1 75.5		73.5		62.3 69.2		63. 68.	-	70. 75.	-	71. 76.	
					05.2		00.	7	75.		70.	
Centerline Distanc	e to Noise Col	nour (in reet)		70 0	dBA	65	dBA	6	0 dBA	55	dBA	
			Ldn:	18	31	39	91	1	842	1,	814	
		CI	IEL:	18	38	40	06		875	1,	885	

FH	WA-RD-77-10	8 HIGHW	AY NOIS	E PREDICTION	ON MODE	L		
Scenario: IY Road Name: Archibald Road Segment: s/o Chino					Name: Ho umber: 119			
SITE SPECIFIC I	NPUT DATA					DEL INPU	TS	
Highway Data			Site	Conditions (Hard = 10	, Soft = 15)		
Average Daily Traffic (Adt):	29,473 vehic	les			Au	tos: 15		
Peak Hour Percentage:	10%			Medium Tru				
Peak Hour Volume:	2,947 vehicle	es		Heavy Truc	ks (3+ Axl	es): 15		
Vehicle Speed:	55 mph		Vehic	cle Mix				
Near/Far Lane Distance:	93 feet			VehicleType	Da	y Evening	Night	Daily
Site Data				A	utos: 74	.1% 10.3%	15.6%	89.65
Barrier Height:	0.0 feet			Medium Tr	ucks: 69	.0% 7.1%	23.8%	7.02
Barrier Type (0-Wall, 1-Berm):	0.0			Heavy Tr	ucks: 82	.1% 3.9%	13.9%	3.33
Centerline Dist. to Barrier:	74.0 feet		Nois	e Source Ele	evations (in feet)		
Centerline Dist. to Observer:	74.0 feet			Autos	: 0.000)		
Barrier Distance to Observer:	0.0 feet		Me	edium Trucks	2.29	7		
Observer Height (Above Pad):	5.0 feet		F	leavy Trucks	8.004	4 Grade A	djustmen	t: 0.0
Pad Elevation: Road Elevation:	0.0 feet		Lano	Equivalent	Distance	(in foot)		
Road Elevation: Road Grade:	0.0 feet 0.0%		Laile	Autos		. ,		
Left View:	-90.0 degre	200	Me	edium Trucks		_		
Right View:	90.0 degre			leavy Trucks		-		
FHWA Noise Model Calculation	าร							
VehicleType REMEL	Traffic Flow	Distai	nce Fi	nite Road	Fresnel	Barrier A	tten Be	rm Atter
Autos: 71.78	3 1.51		-1.05	-1.20	-4.	.73 0	.000	0.0
Medium Trucks: 82.4			-1.03	-1.20			.000	0.0
Heavy Trucks: 86.4			-1.03	-1.20	-5.	.25 0	.000	0.0
Unmitigated Noise Levels (with								
VehicleType Leq Peak Ho			eq Evenir			Ldn 71		NEL 71
	1.0 0.6	69.0 68.2		66.4 64.4	63.4 64.9	71 71		
	0.6 1.4	69.7		64.4 62.6	63.3	/1 71		72 71
	5.8	73.8		9.5	68.7	71	• •	71
		4)						
Centerline Distance to Noise C	Contour (in fee							
Centerline Distance to Noise C	Contour (in fee	1)	70 dBA	65 c	IBA	60 dBA	55	5 dBA
Centerline Distance to Noise C	Contour (in fee	Ldn:	70 dBA 189	65 d	_	60 dBA 877		5 dBA ,889

Thursday, August 8, 2019

	FH'	WA-RD-77-108	HIGH	WAY	NOISE PI	REDICTI	ON M	ODEL			
	ario: IY me: Archibald A	۸.,						: Home			
	ent: s/o Ontario					300 11	umber	. 11900			
SITE	SPECIFIC IN	NPUT DATA				N	OISE	MODE	L INPUT	S	
Highway Data					Site Con	ditions	(Hard	= 10, S	oft = 15)		
Average Dail	y Traffic (Adt):	30,734 vehicle	es					Autos.	15		
Peak Hou	ır Percentage:	10%			Me	dium Tru	ıcks (2	Axles).	: 15		
Peak	Hour Volume:	3,073 vehicles	S		He	avy Truc	ks (3+	Axles).	: 15		
V	ehicle Speed:	55 mph			Vehicle	Miv					
Near/Far L	ane Distance:	93 feet				icleType		Dav	Evening	Night	Daily
Site Data							lutos:	74.19	-	15.6%	,
P	arrier Height:	0.0 feet			М	edium Ti	ucks:	69.0%	6 7.1%	23.8%	7.02%
Barrier Type (0-		0.0 1661				Heavy Tr	ucks:	82.19	6 3.9%	13.9%	3.33%
	Dist. to Barrier:	74.0 feet			Noise So	51		/:- 6			
Centerline Dis	t. to Observer:	74.0 feet			Noise So	Auto:		0.000	eet)		
Barrier Distance	e to Observer:	0.0 feet			Modiu	Auto: m Truck:		2.297			
Observer Height	t (Above Pad):	5.0 feet				m Truck: vy Truck:		2.29 <i>1</i> B.004	Grade Ad	liuetmon	- 0.0
_	Pad Elevation:	0.0 feet			пеан	ry Trucks	S. (5.004	Grade Ad	ijusurierii	. 0.0
R	oad Elevation:	0.0 feet			Lane Eq	uivalent	Dista	nce (in	feet)		
	Road Grade:	0.0%				Autos	s: 5	7.782			
	Left View:	-90.0 degree	es		Mediu	m Truck	s: 5	7.629			
	Right View:	90.0 degree	es		Heav	y Truck	s: 5	7.644			
FHWA Noise Mo	del Calculation	18									
VehicleType	REMEL	Traffic Flow	Dis	tance		Road	Fre	snel	Barrier At		m Atten
Autos				-1.0		-1.20		-4.73		000	0.00
Medium Trucks				-1.0		-1.20		-4.88		000	0.000
Heavy Trucks				-1.0		-1.20		-5.25	0.	000	0.000
Unmitigated Noi:	- '										
VehicleType	Leq Peak Ho		_	Leq E	vening	Leq	Night		Ldn		NEL
Autos			69.1		66.6			3.6	71.	_	71.0
Medium Trucks: 70.8 68.4					64.6			5.0	72.	-	72.2
Heavy Trucks Vehicle Noise			69.9 74.0		62.7 69.7			3.5 3.9	71. 76.	-	71.4 76.5
Centerline Distar					09.7		00	J. J	70.	J	70.3
Senteriine Distai	ice to Noise C	ontour (in feet,	, 	70	dBA	65 (dBA		60 dBA	55	dBA
			Ldn:		94	4			902		943
		CI	VEL:	2	02	43	35		937	2,	018

	FHV	WA-RD-77-108	HIGH	IWAY N	IOISE P	REDICT	ION MC	DEL			
	io: IY ne: Archibald A nt: s/o Eucalyp						t Name: lumber:		tead		
SITE S	SPECIFIC IN	IPUT DATA				1	NOISE I	MODE	L INPUT	S	
Highway Data				5	Site Cor	nditions	(Hard =	10, So	ft = 15)		
Average Daily	Traffic (Adt):	29,882 vehicle	es					Autos:	15		
Peak Hour	Percentage:	10%			Me	edium Tr	ucks (2	Axles):	15		
Peak H	lour Volume:	2,988 vehicle	s		He	eavy Tru	cks (3+	Axles):	15		
Ve	hicle Speed:	55 mph		1	Vehicle	Mix					
Near/Far La	ne Distance:	93 feet		F		nicleType	9	Day	Evening	Night	Daily
Site Data							Autos:	74.1%	0	15.69	-
Rai	rrier Height:	0.0 feet			M	ledium 7	rucks:	69.0%	7.1%	23.89	6 7.02%
Barrier Type (0-W	/all, 1-Berm):	0.0				Heavy 7	rucks:	82.1%	3.9%	13.99	6 3.33%
Centerline Dis		74.0 feet		1	Voise S	ource E	levation	s (in fe	et)		
Centerline Dist.		74.0 feet				Auto	s: 0.	000			
Barrier Distance		0.0 feet			Mediu	ım Truck	rs: 2.	297			
Observer Height (5.0 feet			Hea	vy Truck	rs: 8.	004	Grade Ad	justmer	t: 0.0
	ad Elevation:	0.0 feet			one Fe	ii.colon	t Distan	oo (in i	in n 4 l		
	ad Elevation: Road Grade:	0.0 feet		-	Lane Eq	Auto		782	eet)		
'	Road Grade: Left View:	0.0%			Modiu	m Truck		629			
	Right View:	-90.0 degree				vy Truck		644			
FHWA Noise Mode	al Calculation	e									
VehicleType	RFMFI	Traffic Flow	Dis	tance	Finite	Road	Fresi	nel	Barrier Att	en Be	rm Atten
Autos:	71.78	1.57		-1.0		-1.20		-4.73		000	0.000
Medium Trucks:	82.40	-9.49		-1.03	3	-1.20		-4.88	0.0	000	0.000
Heavy Trucks:	86.40	-12.73		-1.03	3	-1.20		-5.25	0.0	000	0.000
Unmitigated Noise	e Levels (with	out Topo and	barrie	er atten	uation)						
VehicleType	Leq Peak Hou	ır Leq Day	/	Leg Ev	/ening	Leq	Night		Ldn	(CNEL
Autos:	71	.1	69.0		66.5	i	63.	5	71.		71.5
Medium Trucks:	70		68.3		64.4		64.	-	71.9	-	72.1
Heavy Trucks: Vehicle Noise:	71 75		69.8 73.8		62.6 69.6		63.	-	71.2		71.3 76.4
					09.0	'	08.	'	10.		10.4
Centerline Distance	e to Noise Co	ontour (in reet		70 c	1BA	65	dBA	6	0 dBA	5	5 dBA
			Ldn:	19	91	4	11		885	1	,907
		C	NEL:	19	8	4	27		919	1	,981

	FH\	WA-RD-77-108	HIGH	A YAWI	IOISE P	REDICTI	ои мо	DEL			
Scenari Road Nam Road Segmen	e: Archibald A					Project Job N	Name: umber:		tead		
SITE S	SPECIFIC IN	IPUT DATA				N	OISE I	MODE	L INPUT	S	
Highway Data				;	Site Cor	ditions (
Average Daily	Traffic (Adt):	33,476 vehicl	es					Autos:	15		
Peak Hour	Percentage:	10%			Me	edium Tru	icks (2	Axles):	15		
Peak H	our Volume:	3,348 vehicle	:S		He	eavy Truc	ks (3+)	Axles):	15		
Vel	hicle Speed:	50 mph		,	Vehicle	Mix					
Near/Far Lar	ne Distance:	78 feet				icleType		Day	Evening	Night	Daily
Site Data						Α.	utos:	74.1%	10.3%	15.6%	89.65%
Rar	rier Height:	0.0 feet			M	ledium Tr	ucks:	69.0%	7.1%	23.8%	7.029
Barrier Type (0-W		0.0				Heavy Tr	ucks:	82.1%	3.9%	13.9%	3.339
Centerline Dis		76.0 feet			Noisa S	ource Ele	ovation	c (in fo	of)		
Centerline Dist.	to Observer:	76.0 feet		1	V0/36 3	Autos		000	ei)		
Barrier Distance t	to Observer:	0.0 feet			Madiu	m Trucks		297			
Observer Height (Above Pad):	5.0 feet			Heavy Trucks: 8.004 Grade Adjustment: 0.0						
Pa	ad Elevation:	0.0 feet									
	ad Elevation:	0.0 feet		1	Lane Eq	uivalent			eet)		
F	Road Grade:	0.0%				Autos		422			
	Left View:	-90.0 degre				m Trucks		286			
	Right View:	90.0 degre	es		Hea	vy Trucks	8: 65.	299			
FHWA Noise Mode		s									
VehicleType	REMEL	Traffic Flow		stance		Road	Fresi		Barrier Att		m Atten
Autos:	70.20	2.48		-1.8	-	-1.20		-4.73		000	0.00
Medium Trucks:	81.00			-1.8		-1.20		-4.88		000	0.00
Heavy Trucks:	85.38	-11.82		-1.8	4	-1.20		-5.25	0.0	000	0.00
Unmitigated Noise								,			
,,,	Leq Peak Hou	.,.,		Leq E	vening	Leq I			Ldn		VEL
Autos:	69		67.5		65.0		62.0	-	69.0	-	70.
Medium Trucks:	69		67.0		63.1		63.0	-	70.6	-	70.
Heavy Trucks: Vehicle Noise:	70		68.9 72.6		61.7 68.3		62.4	•	70.2 74.9		70. 75.
					00.0		07.	,	74.	,	75.
Centerline Distanc	e to Noise Co	ontour (in feet	1)	70 0	dBA	65 (iBA	6	0 dBA	55	dBA
			Ldn:	16	52	34	19		752	1,0	620

	FHV	/A-RD-77-108	HIGHW	AY NO	DISE P	REDICT	TON MC	DDEL			
Scenario							t Name:		stead		
	e: Archibald A					Job I	Vumber:	11968			
Road Segmen	it: s/o ivierrili A	v.									
	SPECIFIC IN	PUT DATA							L INPUT	S	
Highway Data				S	ite Cor	ditions	(Hard =	: 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	31,258 vehicle	es					Autos:	15		
Peak Hour I	Percentage:	10%			Me	edium T	rucks (2	Axles):	15		
Peak He	our Volume:	3,126 vehicles	3		He	eavy Tru	icks (3+	Axles):	15		
Vel	hicle Speed:	55 mph		V	ehicle	Miv					
Near/Far Lar	ne Distance:	93 feet				icleTyp	е	Day	Evening	Night	Daily
Site Data							Autos:	74.1%	Ü	15.6%	,
Ran	rier Height:	0.0 feet			М	edium 1	rucks:	69.0%	7.1%	23.8%	7.02
Barrier Type (0-Wa		0.0				Heavy T	rucks:	82.1%	3.9%	13.9%	3.33
Centerline Dis	t. to Barrier:	74.0 feet		N	loise Si	nurce F	levation	s (in f	oet)		
Centerline Dist. t	to Observer:	74.0 feet		- 1	0.00 0	Auto		.000	,,,		
Barrier Distance t	to Observer:	0.0 feet			Madiu	m Truci		.297			
Observer Height (/	Above Pad):	5.0 feet				vy Truci		.004	Grade Ad	liustment	: 0.0
Pa	d Elevation:	0.0 feet			1100	ry maci	10. 0	.004		,	. 0.0
Roa	d Elevation:	0.0 feet		L	ane Eq	uivalen	t Distan	ce (in	feet)		
F	Road Grade:	0.0%				Auto	os: 57	.782			
	Left View:	-90.0 degree	es			m Truci		.629			
	Right View:	90.0 degree	es		Hear	vy Truci	ks: 57	.644			
FHWA Noise Mode	l Calculations	5									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fres	nel	Barrier At	en Ber	m Atte
Autos:	71.78	1.77		-1.05		-1.20		-4.73	0.	000	0.0
Medium Trucks:	82.40	-9.30		-1.03		-1.20		-4.88	0.	000	0.0
Heavy Trucks:	86.40	-12.53		-1.03		-1.20		-5.25	0.	000	0.0
Unmitigated Noise	•										
	Leq Peak Hou			eq Eve			Night		Ldn		NEL _
Autos:	71.	-	69.2		66.7		63.		71.	-	71
Medium Trucks:	70.	-	68.5		64.6		65.		72.		72
Heavy Trucks: Vehicle Noise:	71. 76.		70.0 74.0		62.8		63. 68.	-	71. 76.		71 76
					09.8		08.	5	/6.	•	76
	e to Noise Co	ntour (in feet,	'				10.4				
Centerline Distanc				70 dl	BA .	65	aba		60 dBA	55	dBA
Centerline Distanc			l dn:	70 dl			dBA		912	-	<i>dBA</i> 965

Thursday, August 8, 201

	FH\	WA-RD-77-108	HIGH	-WAY	NOISE PE	REDICTI	ON M	ODEL			
	rio: IY ne: Archibald A ent: s/o 65th St							: Homes : 11968	stead		
SITE	SPECIFIC IN	IPUT DATA				N	OISE	MODE	L INPUT	S	
Highway Data					Site Con	ditions (Hard	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	33,456 vehicle	:S					Autos:	15		
Peak Hou	r Percentage:	10%			Me	dium Tru	icks (2	Axles):	15		
Peak	Hour Volume:	3,346 vehicles	,		He	avy Truc	ks (3-	Axles):	15		
V	ehicle Speed:	50 mph		ŀ	Vehicle I	Miv					
Near/Far L	ane Distance:	78 feet		-		icleType		Day	Evening	Night	Daily
Site Data							utos:	74.1%		15.6%	
D.	arrier Height:	0.0 feet			Me	edium Tr	ucks:	69.0%	7.1%	23.8%	7.02%
Barrier Type (0-1		0.0			F	Heavy Tr	ucks:	82.1%	3.9%	13.9%	3.33%
,, ,	ist. to Barrier:	76.0 feet		-							
Centerline Dist	to Observer:	76.0 feet		-	Noise Sc				eet)		
Barrier Distance	to Observer:	0.0 feet			A de elle	Autos m Trucks		0.000 2.297			
Observer Height	(Above Pad):	5.0 feet						2.297 B.004	Grade Ad	livotmont	. 0 0
F	Pad Elevation:	0.0 feet			Heav	y Trucks		8.004	Grade Ad	ijusimem	0.0
Ro	oad Elevation:	0.0 feet			Lane Equ	uivalent	Dista	nce (in	feet)		
	Road Grade:	0.0%				Autos	: 6	5.422			
	Left View:	-90.0 degree	s		Mediur	m Trucks	:: 6	5.286			
	Right View:	90.0 degree	s		Heav	y Trucks	: 6	5.299			
FHWA Noise Mod	lel Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite		Fre	snel	Barrier At		m Atten
Autos		2.48		-1.8	-	-1.20		-4.73		000	0.000
Medium Trucks		-8.59		-1.8		-1.20		-4.88		000	0.000
Heavy Trucks	85.38	-11.83		-1.8	14	-1.20		-5.25	0.	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barri	er atter	nuation)						
VehicleType	Leq Peak Hou			Leq E	vening	Leq I			Ldn		VEL
Autos			37.5		65.0			2.0	69.	-	70.0
Medium Trucks			67.0		63.1			3.6	70.	-	70.8
Heavy Trucks			68.9		61.7			2.4	70.		70.4
Vehicle Noise			72.6		68.2		67	7.5	74.	9	75.2
Centerline Distar	ce to Noise Co	ontour (in feet)						-			
			L		dBA	65 c		(60 dBA		dBA
			Ldn:		62	34	-		752		619
		CI	VEL:	1	68	36	12		781	1,	682

	FH\	WA-RD-77-108	HIGH	1 YAW	NOISE P	REDICT	ION MO	DEL			
	rio: IY ne: Kimball Av. ent: w/o Hellma						t Name: lumber:		stead		
SITE	SPECIFIC IN	IPUT DATA				1	NOISE	MODE	L INPUT	S	
Highway Data					Site Cor	nditions	(Hard =	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	15,792 vehicle	es					Autos:	15		
Peak Hou	r Percentage:	10%			Me	edium Ti	rucks (2	Axles):	15		
Peak I	Hour Volume:	1,579 vehicle	S		He	eavy Tru	cks (3+	Axles):	15		
V	ehicle Speed:	50 mph		H	Vehicle	Miv					
Near/Far La	ane Distance:	51 feet		F		icleType	۵ .	Dav	Evening	Night	Daily
Site Data					101		Autos:	74.1%		15.6%	
D.	arrier Height:	0.0 feet			M	ledium 7	rucks:	69.0%	7.1%	23.8%	7.02%
Barrier Type (0-V		0.0				Heavy 7	rucks:	82.1%	3.9%	13.9%	3.33%
	ist to Barrier:	49.0 feet		-							
Centerline Dist.	to Observer:	49.0 feet			Noise S				eet)		
Barrier Distance	to Observer:	0.0 feet				Auto		.000			
Observer Height	(Above Pad):	5.0 feet				m Truck		.297	0	r	
	Pad Elevation:	0.0 feet			Hea	vy Truck	rs: 8	.004	Grade Ad	justmen	t: 0.0
Ro	ad Elevation:	0.0 feet			Lane Eq	uivalen	t Distar	ce (in	feet)		
	Road Grade:	0.0%				Auto	s: 42	.140			
	Left View:	-90.0 degree	es		Mediu	m Truck	s: 41	.929			
	Right View:	90.0 degree	es		Hea	vy Truck	s: 41	.950			
FHWA Noise Mod	lel Calculation	s									
VehicleType	REMEL	Traffic Flow	Dist	tance	Finite	Road	Fres	nel	Barrier Att	en Be	rm Atten
Autos.		-0.79		1.0		-1.20		-4.64		000	0.000
Medium Trucks.		-11.85		1.0		-1.20		-4.87		000	0.000
Heavy Trucks.	85.38	-15.09		1.0	4	-1.20		-5.44	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrie	r atter	nuation)						
VehicleType	Leq Peak Hou			Leq E	vening	Leq	Night		Ldn		NEL
Autos.			67.1		64.6		61.		69.2		69.6
Medium Trucks.			66.6		62.7		63.	_	70.2	_	70.4
Heavy Trucks.			68.5		61.3		62.		69.9		70.0
Vehicle Noise		1.3	72.3		67.9	1	67	.1	74.	0	74.8
Centerline Distan	ce to Noise Co	ontour (in feet	,	70	dBA	C.F	dBA	Τ.	60 dBA		i dBA
			I dn:		<i>aBA</i> 18		112		457		985
		0	Lan: NEL:	_	02		20		457		.022
		C.	VEL.	- 1	UZ		20		410	1	,022

	FHW	/A-RD-77-108	HIGH	WAY NOISI	E PREDIC	TION M	ODEL			
	o: IY e: Limonite Av nt: e/o Archibal					ct Name Number		stead		
SITE S	SPECIFIC IN	PUT DATA				NOISE	MODE	L INPUT	S	
Highway Data				Site (Condition	s (Hard	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	21,611 vehicle	es				Autos:	15		
Peak Hour I	Percentage:	10%			Medium	Trucks (2	Axles):	15		
Peak He	our Volume:	2,161 vehicles	3		Heavy Ti	ucks (3+	- Axles):	15		
Vel	nicle Speed:	50 mph		Vehic	le Mix					
Near/Far Lar	ne Distance:	78 feet			VehicleTy	oe .	Dav	Evening	Night	Dailv
Site Data					, ,	Autos:	74.1%	-	15.6%	89.65%
Rar	rier Height:	0.0 feet			Medium	Trucks:	69.0%	7.1%	23.8%	7.02%
Barrier Type (0-Wa		0.0			Heavy	Trucks:	82.1%	3.9%	13.9%	3.339
Centerline Dis		76.0 feet		Maio	Source	Elovatio	no (in fe	2041		
Centerline Dist. t	to Observer:	76.0 feet		NOIS				et)		
Barrier Distance t	o Observer:	0.0 feet		140	Au dium True		0.000 2.297			
Observer Height (/	Above Pad):	5.0 feet			leavy Trud		3.004	Grade Ad	iuetmant	
Pa	d Elevation:	0.0 feet			icavy IIu	no.	3.004	Orade Ad	ustment	0.0
Roa	d Elevation:	0.0 feet		Lane	Equivale	nt Dista	nce (in :	feet)		
F	Road Grade:	0.0%			Au	tos: 6	5.422			
	Left View:	-90.0 degree	es		edium Truc		5.286			
	Right View:	90.0 degree	es	H	leavy Trud	cks: 6	5.299			
FHWA Noise Mode	l Calculations	;								
VehicleType	REMEL	Traffic Flow	Dista		nite Road			Barrier Att		m Atten
Autos:	70.20	0.58		-1.85	-1.2	-	-4.73		000	0.00
Medium Trucks:	81.00	-10.48		-1.84	-1.2	-	-4.88		000	0.00
Heavy Trucks:	85.38	-13.72		-1.84	-1.2)	-5.25	0.0	000	0.00
Unmitigated Noise				attenuatio	on)					
,,	Leq Peak Hou			Leq Evenin	•	q Night		Ldn		VEL
Autos:	67.		65.6	-	3.1	60		67.		68.
Medium Trucks:	67.	-	65.1	-	1.2	61		68.6	-	68.
Heavy Trucks:	68. 72.	-	67.0 70.7		9.8 6.4	65		68.3 73.0		68. 73.
· · · · · ·		,	10.1		10.4	00	1.0	73.	,	13.
Vehicle Noise:			١							
· · · · · ·		ntour (in feet)	70 dBA	6	5 dBA	6	60 dBA	55	dBA
Vehicle Noise:		,	Ldn:	70 dBA 121	6	5 dBA 261	6	60 dBA 562		<i>dBA</i> 210

	FHW.	A-RD-77-108	HIGH	WAY N	IOISE P	REDICT	TION MC	DEL			
Scenario: IY Road Name: Limonii Road Segment: e/o Hel		Av.					t Name: Number:		stead		
SITE SPECIFION	CINE	PUT DATA							L INPUT	S	
Highway Data					Site Cor	nditions	(Hard =	: 10, Sc	oft = 15)		
Average Daily Traffic (Ad	(t):	777 vehicle	es					Autos:	15		
Peak Hour Percentag	ie:	10%			Me	edium T	rucks (2	Axles):	15		
Peak Hour Volum	ie:	78 vehicle	s		He	eavy Tru	ıcks (3+	Axles):	15		
Vehicle Spee	ed:	50 mph		- h	Vehicle	Mix					
Near/Far Lane Distant	e:	78 feet		ľ		icleTyp	e	Dav	Evening	Night	Dailv
Site Data							Autos:	74.1%		15.6%	89.65%
Barrier Heigi	ht.	0.0 feet			M	ledium 1	Trucks:	69.0%	7.1%	23.8%	7.029
Barrier Type (0-Wall, 1-Berr	n):	0.0				Heavy T	Trucks:	82.1%	3.9%	13.9%	3.33%
Centerline Dist. to Barri		76.0 feet		1	Noise S	ource E	levation	s (in fe	eet)		
Centerline Dist. to Observ		76.0 feet				Auto	os: 0	.000			
Barrier Distance to Observ		0.0 feet			Mediu	m Truci	ks: 2	297			
• ,	bserver Height (Above Pad): 5.0 f				Heavy Trucks: 8.004 Grade Adjustment: 0.0						t: 0.0
Pad Elevation		0.0 feet		-		·					
Road Elevation		0.0 feet		4	Lane Eq		t Distan		reet)		
Road Grad		0.0%				Auto		.422			
Left Vie		-90.0 degree				m Truci		.286			
Right Vie		90.0 degree	es		неа	vy Truci	KS: 65	.299			
FHWA Noise Model Calcula											
VehicleType REMEL		Traffic Flow	Dis	stance		Road	Fres		Barrier Att		rm Atten
	0.20	-13.87		-1.8	-	-1.20		-4.73		000	0.00
	1.00	-24.93		-1.84		-1.20		-4.88		000	0.00
	5.38	-28.17		-1.84		-1.20		-5.25	0.0	000	0.00
Unmitigated Noise Levels (1 0	
VehicleType Leq Peak Autos:	Hour 53.3		51.2	Leq E	vening 48.6		Night 45.	7	Ldn 53.3		NEL 53.
Medium Trucks:	53.0		50.6		46.8		45. 47.	-	54.	-	54.
Heavy Trucks:	54.2		52.5		45.4		46.		53.5		54.
Vehicle Noise:	58.3		56.3		51.9		51.		58.	_	58.
Centerline Distance to Nois	e Cor	tour (in feet)								
				70 c			dBA	(60 dBA	55	i dBA
			Ldn:	1:	3		28		61	-	132
					-						

Thursday, August 8, 2019

	FH\	WA-RD-77-10	8 HIG	HWAY	NOISE PI	REDICT	ION M	ODEL			
	rio: IY ne: Limonite A ent: e/o Harriso							: Homes	stead		
SITE	SPECIFIC IN	NPUT DATA				1	IOISE	MODE	L INPUT	S	
Highway Data					Site Con	ditions	(Hard	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	23,759 vehic	les					Autos:	15		
Peak Hour	Percentage:	10%			Me	dium Tr	ucks (2	Axles):	15		
Peak I	lour Volume:	2,376 vehicle	es		He	avy Tru	cks (3+	- Axles):	15		
Ve	ehicle Speed:	50 mph			Vehicle						
Near/Far La	ne Distance:	78 feet				icleType		Day	Evening	Night	Daily
Site Data					Veri		Autos:	74.1%	-	15.6%	
						edium T		69.0%		23.8%	
	rrier Height:	0.0 feet				Heavy T		82.1%		13.9%	
Barrier Type (0-V		0.0			,	icavy i	rucks.	02.17	0.570	10.570	0.00 /
	ist. to Barrier:	76.0 feet			Noise So	ource E	levatio	ns (in fe	eet)		
Centerline Dist.		76.0 feet				Auto	s: (0.000			
Barrier Distance		0.0 feet			Mediu	m Truck	s:	2.297			
Observer Height		5.0 feet			Heav	y Truck	s:	3.004	Grade Ad	ljustmen:	. 0.0
	ad Elevation: ad Elevation:	0.0 feet			Lane Eq	uivələn	t Nieta	nce (in	foot)		
	Road Grade:	0.0 feet 0.0%			Lane Lq	Auto		5.422	reet)		
	Left View:	-90.0 degre			Modiu	m Truck		5.286			
	Right View:	90.0 degre				y Truck		5.299			
	ragni view.	50.0 degre			77001	y much	3. 0	J.255			
FHWA Noise Mod											
VehicleType	REMEL	Traffic Flow		stance		Road	Fre	snel	Barrier Att		rm Atten
Autos:			-	-1.5		-1.20		-4.73		000	0.000
Medium Trucks:				-1.5		-1.20		-4.88		000	0.000
Heavy Trucks:				-1.8		-1.20		-5.25	0.0	000	0.000
Unmitigated Nois											
VehicleType	Leq Peak Ho		,	Leq I	Evening	Leq	Night		Ldn		NEL
Autos:		3.1	66.0		63.5).5	68.		68.5
Medium Trucks:		7.9	65.5		61.6		62		69.		69.3
Heavy Trucks:		9.0	67.4		60.2		60		68.	_	68.9
Vehicle Noise:	73	3.1	71.1		66.8		66	5.0	73.4	4	73.7
Centerline Distan	ce to Noise C	ontour (in fee	t)								
			Į		dBA		dBA	(60 dBA		dBA
			Ldn:		129	_	78		598		,289
		(ONEL:	1	134	2	88		621	1,	,339

	FHV	WA-RD-77-108	HIGH	WAY N	IOISE P	REDICT	ION MC	DEL			
	io: IY ne: Limonite Av nt: e/o Sumner						t Name: lumber:		stead		
SITE S	SPECIFIC IN	IPUT DATA				1	NOISE I	MODE	L INPUT	S	
Highway Data				,	Site Cor	nditions	(Hard =	: 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	25,299 vehicl	es					Autos:	15		
Peak Hour	Percentage:	10%			Me	edium Tr	ucks (2	Axles):	15		
Peak H	lour Volume:	2,530 vehicle	s		He	eavy Tru	cks (3+	Axles):	15		
Ve	hicle Speed:	50 mph		١,	Vehicle	Miv					
Near/Far La	ne Distance:	78 feet		F		icleType	9	Dav	Evening	Night	Daily
Site Data							Autos:	74.1%	-	15.69	
Rai	rrier Height:	0.0 feet			M	ledium 7	rucks:	69.0%	7.1%	23.89	6 7.02%
Barrier Type (0-W	'all, 1-Berm):	0.0				Heavy 7	rucks:	82.1%	3.9%	13.99	6 3.33%
Centerline Dis		76.0 feet		1	Noise S	ource E	levation	s (in fe	eet)		
Centerline Dist.		76.0 feet				Auto	s: 0.	.000			
Barrier Distance		0.0 feet			Mediu	m Truck	rs: 2.	297			
Observer Height (,	5.0 feet			Hea	vy Truck	rs: 8.	.004	Grade Ad	justmer	nt: 0.0
	ad Elevation:	0.0 feet		H			4 Di-4	//	F41		
	ad Elevation:	0.0 feet		H	Lane Eq		t Distan		eet)		
,	Road Grade:	0.0%				Auto		.422			
	Left View:	-90.0 degre				m Truck		.286			
	Right View:	90.0 degre	es		неа	vy Truck	is: 65	.299			
FHWA Noise Mode											
VehicleType	REMEL	Traffic Flow		stance		Road	Fresi		Barrier Att	_	erm Atten
Autos:	70.20	1.26		-1.8	-	-1.20		-4.73		000	0.000
Medium Trucks:	81.00	-9.80		-1.8		-1.20		-4.88		000	0.000
Heavy Trucks:	85.38	-13.04		-1.8		-1.20		-5.25	0.0	000	0.000
Unmitigated Noise								1		1 .	
VehicleType	Leq Peak Hou			Leq E			Night		Ldn		CNEL
Autos:	68		66.3 65.8		63.8		60.	-	68.		68.8
Medium Trucks:	68 69	-	67.6		61.9 60.5		62. 61.		69. 69.	-	69.5 69.2
Heavy Trucks: Vehicle Noise:	73		71.4		67.0		66.		73.	_	74.0
Centerline Distance	e to Noise Co	ontour (in feet	<u>:</u>)								
		,		70 c	dBA	65	dBA	6	0 dBA	5	5 dBA
			Ldn:	13	34	2	90		624	1	,344
		С	NEL:	14	10	3	01		648	1	,396

Thursday, Aug	ust 8, 2019
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	FHV	VA-RD-77-108	HIGH	WAY N	IOISE P	REDICTI	ON MO	DEL			
Scenario Road Name Road Segmen	e: Limonite Av					Project . Job No	Name: ımber:		stead		
SITE S	SPECIFIC IN	PUT DATA				N	OISE I	MODE	L INPUT	S	
Highway Data					Site Con	ditions (Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	31,789 vehicle	es					Autos:	15		
Peak Hour I	Percentage:	10%			Me	edium Tru	cks (2	Axles):	15		
Peak He	our Volume:	3,179 vehicles	3		He	avy Truc	ks (3+ ,	Axles):	15		
Vel	nicle Speed:	45 mph		H	Vehicle	Miss					
Near/Far Lar	ne Distance:	78 feet		-		icleType		Dav	Evening	Night	Daily
Site Data							utos:	74.1%		15.6%	
Par	rier Height:	0.0 feet			М	edium Tr	ucks:	69.0%	7.1%	23.8%	7.029
Barrier Type (0-Wa		0.0				Heavy Tr	ucks:	82.1%	3.9%	13.9%	3.339
Centerline Dis	. ,	76.0 feet		H					-1		
Centerline Dist. t		76.0 feet		Ľ	Noise S	ource Ele			eet)		
Barrier Distance t	o Observer:	0.0 feet				Autos		000			
Observer Height (/	Above Pad):	5.0 feet				m Trucks		297	0		
	d Elevation:	0.0 feet			Hear	y Trucks	: 8.	004	Grade Ad	justment.	0.0
Roa	d Elevation:	0.0 feet		1	Lane Eq	uivalent	Distan	ce (in i	feet)		
F	Road Grade:	0.0%				Autos	: 65.	422			
	Left View:	-90.0 degree	es		Mediu	m Trucks	: 65.	286			
	Right View:	90.0 degree	es		Hear	y Trucks	: 65.	299			
FHWA Noise Mode	l Calculation:	s									
VehicleType	REMEL	Traffic Flow	Dist	ance		Road	Fresi		Barrier Att		m Atten
Autos:	68.46	2.71		-1.8	-	-1.20		-4.73		000	0.00
Medium Trucks:	79.45	-8.35		-1.8		-1.20		-4.88		000	0.00
Heavy Trucks:	84.25	-11.59		-1.8	4	-1.20		-5.25	0.0	000	0.00
Unmitigated Noise	Levels (with	out Topo and	barrie	r atten	uation)						
,,	Leq Peak Hou		_	Leq E	vening	Leq I			Ldn		VEL
Autos:	68		66.0		63.5		60.	-	68.1		68.
Medium Trucks:	68		65.7		61.8		62.3	-	69.2	-	69.
Heavy Trucks:	69		68.0		60.8		61.	_	69.3		69.
Vehicle Noise:	73	.4	71.4		66.9		66.	3	73.7	7	73.
Centerline Distanc	e to Noise Co	ontour (in feet)								
					dBA	65 c		6	60 dBA		dBA
			Ldn:		34	28	-		623	,	343
			VEL:	4.5	39	30	n		647	1 1	393

	FHW	A-RD-77-108	HIGH	NAY N	OISE P	REDICT	TION MC	DEL			
	o: IY e: Limonite Av. nt: e/o Scholar \	Nv.					t Name: Vumber:		tead		
	SPECIFIC INF						NOISE	MODE	L INPUT:	S	
Highway Data				S	ite Cor	ditions	(Hard =	= 10, Sc	ft = 15)		
Average Daily	Traffic (Adt): 2	28,867 vehicle	s					Autos:	15		
Peak Hour I	Percentage:	10%			Me	edium T	rucks (2	Axles):	15		
Peak He	our Volume:	2,887 vehicles			He	avy Tru	icks (3+	Axles):	15		
Vel	hicle Speed:	50 mph		V	ehicle	Miv					
Near/Far Lar	ne Distance:	78 feet				icleTyp	е	Dav	Evening	Night	Daily
Site Data						,,	Autos:	74.1%	0	15.6%	
Rar	rier Heiaht:	0.0 feet			М	edium 1	rucks:	69.0%	7.1%	23.8%	7.029
Barrier Type (0-Wa		0.0				Heavy 1	rucks:	82.1%	3.9%	13.9%	3.33
Centerline Dis	t. to Barrier:	76.0 feet		٨	loise S	ource E	levation	s (in fe	et)		
Centerline Dist. t	to Observer:	76.0 feet				Auto		.000	,		
Barrier Distance t	to Observer:	0.0 feet			Mediu	m Truc		297			
Observer Height (/	Above Pad):	5.0 feet				vy Truci		.004	Grade Ad	liustment	0.0
Pa	d Elevation:	0.0 feet				•				,	
Roa	d Elevation:	0.0 feet		L	ane Eq		t Distan		eet)		
F	Road Grade:	0.0%				Auto		.422			
	Left View:	-90.0 degree	S			m Truc	00	.286			
	Right View:	90.0 degree	S		Hear	vy Truci	ks: 65	.299			
FHWA Noise Mode											
VehicleType		Traffic Flow	Dist	ance		Road	Fres		Barrier Att		m Atten
Autos:	70.20	1.83		-1.85		-1.20		-4.73		000	0.00
Medium Trucks:	81.00	-9.23		-1.84		-1.20		-4.88		000	0.00
Heavy Trucks:	85.38	-12.47		-1.84		-1.20		-5.25	0.0	000	0.00
Unmitigated Noise											
VehicleType Autos:	Leq Peak Hour 69.0		36.9	Leq Ev	ening 64.3		Night 61.	4	Ldn 69.0		VEL 69
Medium Trucks:	68.7		36.3		62.5		63.		69.0	-	70
Heavy Trucks:	69.9		38.2		61.1		61.	-	69.6	-	69
Vehicle Noise:	74.0		72.0		67.6		66.	-	74.3		74
Centerline Distanc	e to Noise Cor	ntour (in feet)									
		,		70 d	BA	65	dBA	6	i0 dBA	55	dBA
			Ldn:	14	7		316		681	1.	468
		-	IFI :	15			328		707		524

FH	WA-RD-77-108 HIG	HWAY NOISE P	REDICTION I	MODEL		
Scenario: IY+P Road Name: Archibald Road Segment: n/o Chino			Project Nam Job Numbe		stead	
SITE SPECIFIC I	NPUT DATA		NOIS	E MODE	L INPUTS	
Highway Data		Site Cor	nditions (Hare	d = 10, Sc	oft = 15)	
Average Daily Traffic (Adt):	32,513 vehicles			Autos:	15	
Peak Hour Percentage:	10%	Me	edium Trucks	(2 Axles):	15	
Peak Hour Volume:	3,251 vehicles	He	eavy Trucks (3	3+ Axles):	15	
Vehicle Speed:	55 mph	Vehicle	Miss			
Near/Far Lane Distance:	93 feet		nicleType	Dav	Evening	Night Daily
Site Data		VCI	Autos	/		15.6% 89.26%
			ledium Trucks			23.8% 7.10%
Barrier Height: Barrier Type (0-Wall, 1-Berm):	0.0 feet 0.0		Heavy Trucks			13.9% 3.63%
Centerline Dist. to Barrier:	74.0 feet					
Centerline Dist. to Observer:	74.0 feet	Noise S	ource Elevati		eet)	
Barrier Distance to Observer:	0.0 feet		Autos:	0.000		
Observer Height (Above Pad):	5.0 feet		m Trucks:	2.297		
Pad Elevation:	0.0 feet	Hea	vy Trucks:	8.004	Grade Adju	stment: 0.0
Road Elevation:	0.0 feet	Lane Eq	uivalent Dist	ance (in	feet)	
Road Grade:	0.0%		Autos:	57.782		
Left View:	-90.0 degrees	Mediu	m Trucks:	57.629		
Right View:	90.0 degrees	Hea	vy Trucks:	57.644		
FHWA Noise Model Calculation	ns					
VehicleType REMEL	Traffic Flow Di	stance Finite	Road Fr	esnel	Barrier Atte	n Berm Atten
Autos: 71.78	3 1.92	-1.05	-1.20	-4.73	0.00	0.000
Medium Trucks: 82.40		-1.03	-1.20	-4.88	0.00	
Heavy Trucks: 86.40	-11.99	-1.03	-1.20	-5.25	0.00	0.000
Unmitigated Noise Levels (with						
VehicleType Leq Peak Ho		Leq Evening	Leq Night		Ldn	CNEL
	1.5 69.4	66.8		3.8	71.5	71.8
	1.1 68.7	64.9		35.3	72.3	72.5
	2.2 70.5	63.4		34.1	71.9	72.1
	6.4 74.4	70.0	. 6	9.2	76.7	76.9
Centerline Distance to Noise C	Contour (in feet)					
		70 dBA	65 dBA	- (60 dBA	55 dBA
	Ldn: CNFI:	206 214	444 461		956 993	2,059 2.139

Thursday, August 8, 2019

	FH\	WA-RD-77-108	HIGH	YAW	NOISE P	REDICT	ION MO	DEL			
Road Nar	rio: IY+P me: Archibald A ent: s/o Chino A						t Name: lumber:		stead		
SITE	SPECIFIC IN	IPUT DATA				١	NOISE I	MODE	L INPUT	S	
Highway Data					Site Cor	nditions	(Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt):	29,782 vehicle	es					Autos:	15		
Peak Hou	r Percentage:	10%			Me	edium Tr	ucks (2	Axles):	15		
Peak I	Hour Volume:	2,978 vehicle	S		He	eavy Tru	cks (3+	Axles):	15		
V	ehicle Speed:	55 mph		H	Vehicle	Miv					
Near/Far La	ane Distance:	93 feet		F		icleType		Day	Evening	Night	Daily
Site Data							Autos:	74.1%		15.6	_
D.	arrier Height:	0.0 feet			M	ledium T	rucks:	69.0%	7.1%	23.8	% 7.11%
Barrier Type (0-V		0.0				Heavy T	rucks:	82.1%	3.9%	13.9	% 3.66%
	ist to Barrier:	74.0 feet		- 1							
Centerline Dist		74.0 feet		-	Noise S				eet)		
Barrier Distance	to Observer:	0.0 feet				Auto		000			
Observer Height	(Above Pad):	5.0 feet				m Truck		297			
	Pad Elevation:	0.0 feet			Hea	vy Truck	s: 8.	004	Grade Ad	justme	nt: 0.0
	ad Elevation:	0.0 feet			Lane Eq	uivalen	t Distan	ce (in	feet)		
	Road Grade:	0.0%				Auto	s: 57.	782			
	Left View:	-90.0 degree	es		Mediu	m Truck	s: 57.	629			
	Right View:	90.0 degree			Hea	vy Truck	s: 57.	644			
FHWA Noise Mod	lel Calculation	s									
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresi		Barrier Att	en B	erm Atten
Autos.		1.54		-1.0	-	-1.20		-4.73		000	0.000
Medium Trucks.		-9.45		-1.0	-	-1.20		-4.88		000	0.000
Heavy Trucks.	86.40	-12.34		-1.0	13	-1.20		-5.25	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrie	r atter	nuation)						
VehicleType	Leq Peak Hou	ır Leq Day	′	Leq E	vening	Leq	Night		Ldn		CNEL
Autos.			69.0		66.4		63.		71.		71.5
Medium Trucks.			68.3		64.5		65.0	-	71.9	-	72.1
Heavy Trucks.			70.2		63.0		63.		71.0		71.7
Vehicle Noise	: 76	i.0	74.0		69.6		68.9	9	76.3	3	76.5
Centerline Distan	ce to Noise Co	ontour (in feet)					,			
			L		dBA		dBA		60 dBA	_	5 dBA
		_	Ldn:	-	95		19		903		1,946
		C	NEL:	2	02	4	35		938		2,021

	FHV	VA-RD-77-108	HIGH	1 YAW	IOISE P	REDICT	ION MO	DDEL						
Road Nam	rio: IY+P ne: Archibald A nt: s/o Ontario						t Name: lumber:		stead					
SITE	SPECIFIC IN	PUT DATA				١	IOISE	MODE	L INPUT:	S				
Highway Data					Site Conditions (Hard = 10, Soft = 15)									
Average Daily	Traffic (Adt):	31,178 vehicle	es					Autos:	15					
Peak Hour	Percentage:	10%			Me	edium Tr	ucks (2	Axles):	15					
Peak H	lour Volume:	3,118 vehicles	s		Heavy Trucks (3+ Axles): 15									
Ve	hicle Speed:	55 mph			Vehicle Mix									
Near/Far La	ne Distance:	93 feet			Vehicle Mix Vehicle Type Day Evening Night									
Site Data				-	Ver		Autos:	74.1%		15.6%	Daily 89.30%			
					Medium Trucks: 69.0% 7.1% 23.8%									
	rrier Height:	0.0 feet			Medium Trucks: 69.0% 7.1% 23.8% 7.0 Heavy Trucks: 82.1% 3.9% 13.9% 3.0									
Barrier Type (0-W		0.0			Tieavy Trucks. 62.176 3.576 13.576 3									
Centerline Di		74.0 feet			Noise S	ource E	levatio	ns (in fe	eet)					
Centerline Dist.		74.0 feet			Autos: 0.000									
Barrier Distance		0.0 feet			Mediu	m Truck	s: 2	.297						
Observer Height	(Above Pad): ad Elevation:	5.0 feet 0.0 feet			Hea	vy Truck	s: 8	.004	Grade Ad	justmen	: 0.0			
	ad Elevation: ad Flevation:	0.0 feet		H	Lane Eq	uivalen	t Distar	nce (in	feet)					
	Road Grade:	0.0%		F		Auto		782						
	I eft View:	-90.0 degree	00		Madiu	m Truck		629						
	Right View:	90.0 degree				vy Truck		.644						
FHWA Noise Mode	el Calculations	5												
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fres	nel	Barrier Att	en Bei	m Atten			
Autos:	71.78	1.74		-1.0	5	-1.20		-4.73	0.0	000	0.000			
Medium Trucks:	82.40	-9.27		-1.0	3	-1.20		-4.88	0.0	000	0.000			
Heavy Trucks:	86.40	-12.17		-1.0	3	-1.20		-5.25	0.0	000	0.000			
Unmitigated Noise	e Levels (with	out Topo and	barri	er atten	uation)									
VehicleType	Leq Peak Hou			Leq E	vening		Night		Ldn		NEL			
Autos:	71.	-	69.2		66.6		63.		71.3	-	71.7			
Medium Trucks:	70	-	68.5		64.7		65.		72.1		72.3			
Heavy Trucks:	72	-	70.3		63.2		63.	-	71.7		71.9			
Vehicle Noise:		_	74.2		69.8		69	.1	76.5	5	76.7			
Centerline Distant	ce to Noise Co	ntour (in feet)	70	dBA	65	dBA	-	60 dBA	55	dBA			
			Ldn:	20			31		928		000			
			NFI:		08		48		964		077			
		O.		2.		7				-				

Barrier Height: 0.0 feet		FHWA	∖-RD-77-108 H	HIGHWAY	NOISE PI	REDICTION	ON MODEL			
Autos: 15 Steel	Road Nan	ne: Archibald Av.	Av.			.,				
Average Daily Traffic (Adt):		SPECIFIC INP	UT DATA						3	
Peak Hour Percentage:	Highway Data				Site Con	ditions (Hard = 10, S	oft = 15)		
Peak Hour Volume: Vehicle Speed: S5 mph Near/Far Lane Distance: 93 feet S mph Near/Far Lane Distance: 93 feet Vehicle Mix Vehicle Type Day Evening Night Daily Near/Far Lane Distance: 93 feet Noise Source Elevations (in feet) Noise Source Elevations	Average Daily	Traffic (Adt): 28	3,056 vehicles	;			Autos	: 15		
Vehicle Speed: S5 mph Near/Far Lane Distance: 93 feet Vehicle Mix Vehicle Type Day Evening Night Daily Site Data Autos: 74.1% 10.3% 15.6% 89.21% Medium Trucks: 69.0% 7.1% 3.9% 3.68% 7.1% No.0 Peak Hour	Percentage:	10%		Me	dium Tru	cks (2 Axles,	: 15			
	Peak F	lour Volume: 2,	,806 vehicles		He	avy Truci	ks (3+ Axles,	: 15		
Near/Far Lane Distance: 93 feet VehicleType Day Evening Night Daily	Ve	hicle Speed:	55 mph		Vehicle	Mix				
Barrier Height: D.0 feet D.0 feet D.0 feet D.0 feet D.0 feet D.0 feet D.0 D.0 feet D.0 D.0 feet D.0 D.	Near/Far La	ne Distance:	93 feet				Day	Evening	Night	Daily
Barrier Type (0-Wall, 1-Berm):	Site Data					A	utos: 74.19	% 10.3%	15.6%	89.21%
Barrier Type (0-Wall, 1-Berm):	Ra	rrier Height	0.0 feet		М	edium Tru	icks: 69.0°	% 7.1%	23.8%	7.11%
Noise Source Elevations (in feet) Noise Source Elevations (in feet)					,	Heavy Tru	icks: 82.19	% 3.9%	13.9%	3.68%
Autos: 0.000			74.0 feet		M-1 0	F1-		E4\		
Barrier Distance to Observer: 0.0 feet Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0	Centerline Dist.	to Observer:	74.0 feet		Noise 30		-	eet)		
Diserver Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Canal Elevation: 0.0 feet Canal Elevation: 0.0 feet Canal Elevation: 0.0 feet Canal Elevation: 0.0 feet Canal Elevation: 0.0 feet Canal Elevation: 0.0 feet Canal Elevation: 0.0 feet Canal Elevation: 0.0 feet Canal Elevation: 0.0 feet Canal Elevation: Canal Elevati	Barrier Distance	to Observer:	0.0 feet		A 4 15					
Pad Elevation:	Observer Height	(Above Pad):	5.0 feet					Grada Adi	iuetmant	. 0 0
Road Grade:	P	ad Elevation:	0.0 feet		пеан	ry Trucks.	0.004	Orauc Auj	usunone	0.0
Left View:	Ro	ad Elevation:	0.0 feet		Lane Eq	uivalent l	Distance (in	feet)		
Right View: 90.0 degrees		Road Grade:	0.0%			Autos.	57.782			
		Left View:	-90.0 degrees	;	Mediu	m Trucks	57.629			
VehicleType		Right View:	90.0 degrees	;	Heav	y Trucks	57.644			
Autos: 71.78 1.28 -1.05 -1.20 -4.73 0.000 0.00 Medium Trucks: 82.40 -9.71 -1.03 -1.20 -4.88 0.000 0.00 Heavy Trucks: 86.40 -12.57 -1.03 -1.20 -5.25 0.000 0.00	FHWA Noise Mod									
Medium Trucks: 82.40 -9.71 -1.03 -1.20 -4.88 0.000 0.00 Heavy Trucks: 86.40 -12.57 -1.03 -1.20 -5.25 0.000 0.00 Unmitigated Noise Levels (without Tropo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 70.8 68.7 66.2 63.2 70.8 71. Medium Trucks: 70.5 68.1 64.2 64.7 71.6 71. Heavy Trucks: 71.6 69.9 62.8 63.5 71.3 71. Vehicle Noise: 75.8 73.8 69.4 68.6 76.0 76.	,,									
Heavy Trucks: 86.40 -12.57 -1.03 -1.20 -5.25 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: 70.8 68.7 66.2 63.2 70.8 71. Medium Trucks: 70.5 68.1 64.2 64.7 71.6 71. Heavy Trucks: 71.6 69.9 62.8 63.5 71.3 71. Vehicle Noise: 75.8 73.8 69.4 68.6 76.0 76.										
VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 70.8 68.7 66.2 63.2 70.8 71. Medium Trucks: 70.5 68.1 64.2 64.7 71.6 71. Heavy Trucks: 71.6 69.9 62.8 63.5 71.3 71. Vehicle Noise: 75.8 73.8 69.4 68.6 76.0 76.	Heavy Trucks:	86.40	-12.57	-1.	03	-1.20	-5.25	0.0	100	0.000
Autos: 70.8 68.7 66.2 63.2 70.8 71. Medium Trucks: 70.5 68.1 64.2 64.7 71.6 71. Heavy Trucks: 71.6 69.9 62.8 63.5 71.3 71. Vehicle Noise: 75.8 73.8 69.4 68.6 76.0 76.	Unmitigated Noise	e Levels (withou	t Topo and b	arrier atte	nuation)					
Medium Trucks: 70.5 68.1 64.2 64.7 71.6 71. Heavy Trucks: 71.6 69.9 62.8 63.5 71.3 71. Vehicle Noise: 75.8 73.8 69.4 68.6 76.0 76.	,,					Leq N				
Heavy Trucks: 71.6 69.9 62.8 63.5 71.3 71. Vehicle Noise: 75.8 73.8 69.4 68.6 76.0 76.			-							71.2
Vehicle Noise: 75.8 73.8 69.4 68.6 76.0 76.			-							71.8
		71.6	6	9.9	62.8		63.5	71.3	3	71.5
Centerline Distance to Noise Contour (in feet)	Vehicle Noise:	75.8	7	3.8	69.4		68.6	76.0)	76.3
	Centerline Distant	ce to Noise Com	tour (in feet)							

Thursday, August 8, 2019

	FH	WA-RD-77-108	HIGH	HWAY	NOISE PE	REDICT	ION M	ODEL				
Road Na	ario: IY+P me: Archibald A ent: s/o Eucalyp							: Home: : 11968	stead			
SITE	SPECIFIC IN	JPLIT DATA				1	JOISE	MODE	L INPUT	S		
Highway Data	01 2011 10 11				Site Con							
Average Dail	y Traffic (Adt):	30.343 vehicl	29					Autos	15			
	ır Percentage:	10%	-		Me	dium Tr	ucks (2	Axles):	15			
	Hour Volume:	3.034 vehicle	s			avy Tru						
	'ehicle Speed:	55 mph					(-	/				
	ane Distance:	93 feet			Vehicle I							
	ano Biotanico.	00 1001			Veh	icleType		Day	Evening	Night	Daily 89.29%	
Site Data												
	arrier Height:	0.0 feet						69.0%		23.8%		
Barrier Type (0-	Wall, 1-Berm):	0.0			ŀ	Heavy T	rucks:	82.1%	3.9%	13.9%	3.64%	
Centerline L	Dist. to Barrier:	74.0 feet			Noise So	ource E	levatio	ns (in f	eet)			
Centerline Dis	t. to Observer:	74.0 feet				Auto		0.000	,			
Barrier Distance	e to Observer:	0.0 feet			Mediu	m Truck		2.297				
Observer Height	t (Above Pad):	5.0 feet				vy Truck		3.004	Grade Ad	liustmen	0.0	
	Pad Elevation:	0.0 feet								,		
R	oad Elevation:	0.0 feet			Lane Eq				feet)			
	Road Grade:	0.0%				Auto		7.782				
	Left View:	-90.0 degre	es		Mediu	m Truck	s: 5	7.629				
	Right View:	90.0 degre	es		Heav	y Truck	s: 5	7.644				
HWA Noise Mo	del Calculation											
VehicleType	REMEL	Traffic Flow		stance		Road	Fre	snel	Barrier Att		m Atten	
Autos	: 71.78	1.62		-1.0	05	-1.20		-4.73	0.0	000	0.000	
Medium Trucks	82.40	-9.39		-1.0	03	-1.20		-4.88	0.0	000	0.000	
Heavy Trucks				-1.0		-1.20		-5.25	0.0	000	0.000	
Inmitigated Noi:												
VehicleType	Leq Peak Ho			Leq E	vening	Leq	Night		Ldn	_	NEL	
Autos		1.2	69.1		66.5		63		71.	_	71.6	
Medium Trucks	: 70	0.8	68.4		64.5		65		72.0	0	72.2	
Heavy Trucks		1.9	70.2		63.1		63		71.0		71.8	
Vehicle Noise	e: 76	3.1	74.1		69.7		68	1.9	76.4	4	76.6	
Centerline Distai	nce to Noise C	ontour (in feet	!)									
			L		dBA		dBA	(60 dBA		dBA	
		_	Ldn:		97		23		912		965	
		С	NEL:	2	204	4	40		947	2	041	

Thursday, August 8, 2019

	FHV	VA-RD-77-108	HIGHW	AY NO	ISE PI	REDICT	ION MC	DEL			
Road Nam	io: IY+P ne: Archibald A nt: s/o Merrill A						t Name: lumber:		stead		
SITE	SPECIFIC IN	PUT DATA				١	IOISE	MODE	L INPUT	S	
Highway Data				Sit	te Con	ditions	(Hard =	: 10, S	oft = 15)		
Average Daily	Traffic (Adt):	31,889 vehicle	es					Autos.	15		
Peak Hour	Percentage:	10%			Me	edium Tr	ucks (2	Axles).	15		
Peak H	lour Volume:	3,189 vehicles	8		He	avy Tru	cks (3+	Axles).	15		
Ve	hicle Speed:	55 mph		Va	hicle I	Miv					
Near/Far La	ne Distance:	93 feet		Ve		icleType		Day	Evening	Night	Daily
Site Data							Autos:	74.19		15.6	
Po-	rrier Height:	0.0 feet			М	edium T	rucks:	69.0%	6 7.1%	23.8	% 7.03%
Barrier Type (0-W		0.0 leet			- 1	Heavy T	rucks:	82.1%	3.9%	13.9	% 3.60%
Centerline Di		74.0 feet									
Centerline Dist.		74.0 feet		No	oise So		levation		eet)		
Barrier Distance		0.0 feet				Auto		.000			
Observer Height		5.0 feet				m Truck		297			
	ad Elevation:	0.0 feet			Heav	y Truck	:s: 8	.004	Grade Ad	justme	nt: 0.0
	ad Flevation:	0.0 feet		La	ne Eq	uivalen	t Distan	ce (in	feet)		
	Road Grade:	0.0%				Auto	s: 57	.782			
	Left View:	-90.0 degree	es		Mediu	m Truck	s: 57	.629			
	Right View:	90.0 degree	es		Heav	y Truck	s: 57	.644			
FHWA Noise Mode	el Calculations	5									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fres		Barrier Att	en B	erm Atten
Autos:	71.78	1.84		-1.05		-1.20		-4.73		000	0.000
Medium Trucks:	82.40	-9.20		-1.03		-1.20		-4.88		000	0.000
Heavy Trucks:	86.40	-12.11		-1.03		-1.20		-5.25	0.0	000	0.000
Unmitigated Noise	e Levels (with	out Topo and	barrier a	attenua	ation)						
VehicleType	Leq Peak Hou	r Leq Day	L	.eq Eve	ning	Leq	Night		Ldn		CNEL
Autos:	71.	.4	69.3		66.7		63.	8	71.4	1	71.8
Medium Trucks:	71.	.0	68.6		64.7		65.	2	72.	1	72.4
Heavy Trucks:	72	.1	70.4		63.3		64.	0	71.8	3	72.0
Vehicle Noise:	76	.3	74.3		69.9		69.	1	76.0	3	76.8
Centerline Distant	ce to Noise Co	ntour (in feet)								
				70 dB	3A		dBA	1	60 dBA		55 dBA
			Ldn:	202			36		940		2,025
		Ci	VEL:	210		4	53		976		2,103

	FHV	VA-RD-77-108	HIGH	1 YAWH	NOISE P	REDICT	ION M	ODEL						
Scenari Road Nam Road Segmer	e: Archibald A							Homes 11968	stead					
SITE S	SPECIFIC IN	IPUT DATA				1	NOISE	MODE	L INPUT	S				
Highway Data					Site Conditions (Hard = 10, Soft = 15)									
Average Daily	Traffic (Adt):	33,693 vehicle	es					Autos:	15					
Peak Hour	Percentage:	10%			Me	edium Ti	ucks (2	Axles):	15					
Peak H	our Volume:	3,369 vehicles	S		He	avy Tru	cks (3+	Axles):	15					
Vei	hicle Speed:	50 mph			Vehicle	Miv								
Near/Far Lai	ne Distance:	78 feet		F		icleType	9	Dav	Evening	Night	Dailv			
Site Data							Autos:	74.1%		15.6%	89.72%			
Rar	rier Height:	0.0 feet			M	edium 7	rucks:	69.0%	7.1%	23.8%	6.97%			
Barrier Type (0-W		0.0				Heavy 7	rucks:	82.1%	3.9%	13.9%	3.319			
Centerline Dis		76.0 feet		-	Noise S	ourco E	lovatio	ne (in f	not)					
Centerline Dist.	to Observer:	76.0 feet		H.	140/36 3	Auto		0.000	, (1)					
Barrier Distance	to Observer:	0.0 feet			Madiu	m Truck		2.297						
Observer Height (Above Pad):	5.0 feet				y Truck		3.004	Grade Ad	iustment	0.0			
Pa	ad Elevation:	0.0 feet		L						,				
	ad Elevation:	0.0 feet		- 1	Lane Eq				feet)					
F	Road Grade:	0.0%				Auto		5.422						
	Left View:	-90.0 degree				m Truck		5.286						
	Right View:	90.0 degree	es		Hea	y Truck	(S. 6	5.299						
FHWA Noise Mode	l Calculation	s												
VehicleType	REMEL	Traffic Flow	Dis	stance		Road	Fres		Barrier Att		m Atten			
Autos:	70.20	2.51		-1.8	-	-1.20		-4.73		000	0.00			
Medium Trucks:	81.00	-8.59		-1.8		-1.20		-4.88		000	0.00			
Heavy Trucks:	85.38	-11.83		-1.8		-1.20		-5.25	0.0	000	0.00			
Unmitigated Noise								_						
,,	Leq Peak Hou	.,.,		Leq E	vening		Night		Ldn		NEL			
Autos: Medium Trucks:	69 69		67.6 67.0		65.0 63.1		62 63		69.1 70.1		70. 70.			
Heavy Trucks:	70		68.9		61.7		62		70.:	-	70.			
Vehicle Noise:	74		72.6		68.3		67		74.9		75.			
Centerline Distanc	e to Noise Co	ontour (in feet)											
		,		70	dBA	65	dBA	6	60 dBA	55	dBA			
			Ldn:	16	62	3	49		753	1,	622			
		C	NEL:	16	88	3	63		782	1.	684			

	FHV	/A-RD-77-108	HIGH	WAY NO	DISE P	REDICT	ION M	ODEL				
Scenario: IY+P Road Name: Archib Road Segment: s/o Lir								: Home : 11968				
SITE SPECIFI	C IN	PUT DATA				l.	IOISE	MODE	L INPU	TS		
Highway Data				S	ite Con	ditions	(Hard	= 10, S	oft = 15)			
Average Daily Traffic (A Peak Hour Percenta Peak Hour Volur	ge:	33,840 vehicle 10% 3,384 vehicle				dium Tr avy Tru			15			
Vehicle Spe	ed:	50 mph		V	ehicle l	Wix						
Near/Far Lane Distan	ce:	78 feet		-		icleType	,	Dav	Evening	g Nic	tht	Daily
Site Data							Autos:	74.19		, ,	.6%	
Barrier Heig Barrier Type (0-Wall, 1-Ber		0.0 feet 0.0				edium T Heavy T		69.09 82.19			.8% .9%	7.00%
Centerline Dist. to Barr		76.0 feet										
Centerline Dist. to Observ		76.0 feet		N	oise Sc	ource E			eet)			
Barrier Distance to Observ		0.0 feet				Auto		0.000				
Observer Height (Above Pa		5.0 feet				m Truck		2.297				
Pad Flevati		0.0 feet			Heav	ry Truck	s: 8	3.004	Grade /	Adjustr	nent:	0.0
Road Flevati		0.0 feet		La	ane Eq	uivalen	t Dista	nce (in	feet)			
Road Gra	de:	0.0%				Auto	s: 6	5.422	,			
I eft Vi	ew:	-90.0 degree	29		Mediu	m Truck	s: 6	5.286				
Right Vi	ew:	90.0 degree			Heav	y Truck	s: 6	5.299				
FHWA Noise Model Calcula	tions	i										
VehicleType REME	L	Traffic Flow	Dist	tance	Finite	Road	Fre	snel	Barrier A	Atten	Beri	m Atten
Autos: 7	0.20	2.52		-1.85		-1.20		-4.73	(0.000		0.00
Medium Trucks: 8	1.00	-8.55		-1.84		-1.20		-4.88	(0.000		0.00
Heavy Trucks: 8	5.38	-11.67		-1.84		-1.20		-5.25		0.000		0.00
Unmitigated Noise Levels	with	out Topo and	barrie	r attenu	ation)							
VehicleType Leq Pear	(Нои	r Leq Day	/	Leq Eve	ening	Leq	Night		Ldn		CI	IEL
Autos:	69.		67.6		65.0		62		-	9.7		70.
Medium Trucks:	69.	4	67.0		63.2		63	.6	7	0.6		70.
Heavy Trucks:	70.	.7	69.0		61.9		62	.6	7	0.4		70.
Vehicle Noise:	74.	.7	72.7		68.3		67	.6	7	5.0		75.
Centerline Distance to Noi:	se Co	ntour (in feet)									
				70 dE	84	65	dBA		60 dBA	1 -	55	dBA
				7 0 GL		- 00						
			Ldn:	164			53	-	761		1,6	640

Thursday, August 8, 2019

	FH\	WA-RD-77	'-108 HI	GHWAY	NOISE PI	REDICTI	ON M	ODEL			
Road Nar	rio: IY+P ne: Kimball Av ent: w/o Hellma							: Home: : 11968	stead		
SITE	SPECIFIC IN	IPUT DA	TA			N	OISE	MODE	L INPUT	S	
Highway Data					Site Con	ditions	(Hard	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	16,175 v	ehicles					Autos:	15		
Peak Hou	Percentage:	10%			Me	dium Tru	icks (2	Axles):	15		
Peak I	Hour Volume:	1,618 ve	hicles		He	avy Truc	cks (3+	- Axles):	15		
Ve	ehicle Speed:	50 m	oh		Vehicle	Misc					
Near/Far La	ane Distance:	51 fee	et			icleType		Dav	Evening	Night	Daily
Site Data					*011		lutos:	74.1%	-	15.6%	,
	rrier Heiaht:	0.0 fe			м	edium Tı		69.0%		23.8%	
Barrier Type (0-V		0.0	et		,	Heavy Tr	ucks:	82.1%	3.9%	13.9%	3.58%
	ist. to Barrier:	49.0 fe	ot								
Centerline Dist.		49.0 fe			Noise So				eet)		
Barrier Distance		0.0 fe				Autos		0.000			
Observer Height	(Above Pad):	5.0 fe	et			m Truck		2.297			
	Pad Elevation:	0.0 fe	et		Heav	y Trucks	S: 8	3.004	Grade Ad	justment	: 0.0
Ro	ad Elevation:	0.0 fe	et		Lane Eq	uivalent	Dista	nce (in	feet)		
	Road Grade:	0.0%				Autos	s: 4:	2.140			
	Left View:	-90.0 d	egrees		Mediu	m Trucks	s: 4	1.929			
	Right View:	90.0 d	egrees		Heav	y Truck	s: 4	1.950			
FHWA Noise Mod	lel Calculation	s									
VehicleType	REMEL	Traffic F		Distance		Road	Fre		Barrier Att		m Atten
Autos:			0.69		01	-1.20		-4.64		000	0.000
Medium Trucks.			1.75		04	-1.20		-4.87		000	0.000
Heavy Trucks:	85.38	-1	4.66	1.	04	-1.20		-5.44	0.0	000	0.000
Unmitigated Nois			and ba	rrier atte	nuation)						
VehicleType	Leq Peak Ho		g Day		Evening	Leq	Night		Ldn		NEL
Autos:		9.3	67.	_	64.7		61		69.3		69.7
Medium Trucks.		9.1	66.		62.8		63		70.3	-	70.5
Heavy Trucks:).6	68.		61.7		62		70.3		70.4
Vehicle Noise.		1.5	72.	.5	68.0		67	'.3	74.	3	75.0
Centerline Distan	ce to Noise C	ontour (in	feet)	1		0-	10.4	1			
			, ,		dBA	65			60 dBA		dBA
			Ld		102	2			472	,	017
			CNE	L:	106	22	21		490	1,	055

FH	WA-RD-77-108	HIGHW	AY NOISE P	REDICTI	ON MO	DEL			
Scenario: IY+P Road Name: Limonite A Road Segment: e/o Hellma					Name: I umber:		tead		
SITE SPECIFIC II	NPUT DATA			N	IOISE N	ЛОDEI	L INPUT	S	
Highway Data			Site Co.	nditions	(Hard =	10, So	ft = 15)		
Average Daily Traffic (Adt):	1,245 vehicle	es				Autos:	15		
Peak Hour Percentage:	10%		M	edium Tru	icks (2 A	Axles):	15		
Peak Hour Volume:	125 vehicle	s	H	eavy Truc	cks (3+ A	Axles):	15		
Vehicle Speed:	50 mph		Vehicle	Miv					
Near/Far Lane Distance:	78 feet			nicleType		Day	Evening	Night	Daily
Site Data						74.1%		15.6%	
Barrier Height:	0.0 feet		L.	1edium Tr	rucks:	69.0%	7.1%	23.8%	6.31%
Barrier Type (0-Wall, 1-Berm):	0.0			Heavy Tr	rucks:	82.1%	3.9%	13.9%	6.42%
Centerline Dist. to Barrier:	76.0 feet								
Centerline Dist. to Observer:	76.0 feet		Noise S	ource El			et)		
Barrier Distance to Observer:	0.0 feet			Autos		000			
Observer Height (Above Pad):	5.0 feet			ım Trucks		297	Crade Ad	livotmon	4.00
Pad Elevation:	0.0 feet		Hea	vy Trucks	s: 8.0	004	Grade Ad	justinen	ı. U.U
Road Elevation:	0.0 feet		Lane Eq	quivalent	Distanc	ce (in f	eet)		
Road Grade:	0.0%			Autos	s: 65.4	422			
Left View:	-90.0 degree	es	Mediu	ım Trucks	s: 65.	286			
Right View:	90.0 degree	es	Hea	vy Trucks	s: 65.	299			
FHWA Noise Model Calculation	ıs								
VehicleType REMEL	Traffic Flow	Distar		Road	Fresn		Barrier Att		rm Atten
Autos: 70.20			-1.85	-1.20		-4.73		000	0.000
Medium Trucks: 81.00			-1.84	-1.20		-4.88		000	0.000
Heavy Trucks: 85.38	-23.27		-1.84	-1.20		-5.25	0.0	000	0.000
Unmitigated Noise Levels (with	out Topo and	barrier a	ttenuation)						
VehicleType Leq Peak Ho			eq Evening	<u> </u>	Night		Ldn		NEL
		53.1	50.6		47.6		55.2		55.6
		52.2	48.4		48.8		55.8	-	56.0
	9.1	57.4 59.7	50.3 54.6		51.0 54.1		58.8 61.7		59.0 61.9
	1.0	39.7	34.0	,	34.1		01.4	,	01.8
	antaur (in fact	1							
Centerline Distance to Noise C	ontour (in feet)	70 dBA	65.4	dBA	6	0 dBA	55	i dBA
	ontour (in feet	Ldn:	70 dBA 21	65 (dBA 6	6	0 dBA 98		i dBA 212

	FHW	A-RD-77-108	HIGH	IWAY N	IOISE PI	REDICTI	ON MO	DEL			
	o: IY+P e: Limonite Av nt: e/o Harrison					Project . Job No	Name: I umber:		stead		
SITE S	SPECIFIC IN	PUT DATA				N	OISE N	/ODE	L INPUT	S	
Highway Data				,	Site Con	ditions (Hard =	10, So	oft = 15)		
Average Daily	Traffic (Adt):	24,407 vehicle	es					Autos:	15		
Peak Hour	Percentage:	10%			Me	dium Tru	icks (2 A	Axles):	15		
Peak H	our Volume:	2,441 vehicles	s		He	avy Truc	ks (3+ A	Axles):	15		
Vel	nicle Speed:	50 mph		Ι,	Vehicle	Miv					
Near/Far Lar	ne Distance:	78 feet		F		icleType		Dav	Evening	Night	Daily
Site Data							utos:	74.1%		15.6%	
Rar	rier Height:	0.0 feet			М	edium Tr	ucks:	69.0%	7.1%	23.8%	7.039
Barrier Type (0-W		0.0				Heavy Tr	ucks:	82.1%	3.9%	13.9%	3.689
Centerline Dis		76.0 feet		-	V-1 0	ource Ele		- /! 6-			
Centerline Dist.	to Observer:	76.0 feet		H'	voise s	Autos		000	ei)		
Barrier Distance t	o Observer:	0.0 feet			Modiu	Autos m Trucks		297			
Observer Height (Above Pad):	5.0 feet				n Trucks vy Trucks		004	Grade Ad	iuctmont	
Pa	d Elevation:	0.0 feet								usunone	0.0
Roa	d Elevation:	0.0 feet		1	Lane Eq	uivalent		_ •	feet)		
F	Road Grade:	0.0%				Autos	: 65.4	422			
	Left View:	-90.0 degree	es			m Trucks					
	Right View:	90.0 degree	es		Hear	y Trucks	: 65.	299			
FHWA Noise Mode	l Calculations										
VehicleType	REMEL	Traffic Flow	Dis	tance		Road	Fresn		Barrier Att		m Atten
Autos:	70.20	1.09		-1.8	-	-1.20		-4.73	0.0		0.00
Medium Trucks:	81.00	-9.95		-1.8		-1.20		-4.88		000	0.00
Heavy Trucks:	85.38	-12.76		-1.8	4	-1.20		-5.25	0.0	000	0.00
Unmitigated Noise											
	Leq Peak Hou			Leq E		Leq I			Ldn		VEL
Autos:	68.	=	66.1		63.6		60.6		68.2	-	68.
Medium Trucks:	68.	-	65.6		61.8		62.2	-	69.2	-	69.
Heavy Trucks: Vehicle Noise:	69. 73.	-	67.9 71.4		60.8		61.5		69.3 73.7		69. 74.
					01.0		50.0		70.1		,
Centerline Distanc	e to Noise Co	ntour (in feet	,	70 0	iBA	65 0	iBA	6	60 dBA	55	dBA
			Ldn:	13	84	28	19		623	11	343

FH	WA-RD-77-108	HIGHWA	Y NOISE	PREDICTIO	N MODEL			
Scenario: IY+P Road Name: Limonite A	v				lame: Home			
Road Segment: e/o Archiba				000710	11001			
SITE SPECIFIC II	NPUT DATA			NC	ISE MOD	EL INPUT	S	
Highway Data			Site C	onditions (F	lard = 10, S	Soft = 15)		
Average Daily Traffic (Adt):	22,293 vehicle	es			Autos	s: 15		
Peak Hour Percentage:	10%			Medium Truc				
Peak Hour Volume:	2,229 vehicles	S		Heavy Truck	s (3+ Axles): 15		
Vehicle Speed:	50 mph		Vehicl	e Mix				
Near/Far Lane Distance:	78 feet		V	ehicleType	Day	Evening	Night	Daily
Site Data				Au	tos: 74.1	% 10.3%	15.6%	89.279
Barrier Height:	0.0 feet			Medium Tru	cks: 69.0	% 7.1%	23.8%	7.029
Barrier Type (0-Wall, 1-Berm):	0.0			Heavy Tru	cks: 82.1	% 3.9%	13.9%	3.719
Centerline Dist. to Barrier:	76.0 feet		Noise	Source Elev	ations (in	feet)		
Centerline Dist. to Observer:	76.0 feet			Autos:	0.000			
Barrier Distance to Observer:	0.0 feet		Med	lium Trucks:	2.297			
Observer Height (Above Pad):	5.0 feet		He	eavy Trucks:	8.004	Grade Ad	justment	0.0
Pad Elevation:	0.0 feet		Long	Equivalent D	Notonoo (ir	foot)		
Road Elevation: Road Grade:	0.0 feet		Lane	Autos:	65.422	rreet)		
Road Grade:	0.0%		Mod	Autos. lium Trucks:	65.286			
Right View:	-90.0 degree 90.0 degree			eavy Trucks:	65.299			
FHWA Noise Model Calculation	ıs							
VehicleType REMEL	Traffic Flow	Distanc	e Fin	ite Road	Fresnel	Barrier Att	en Ber	m Atten
Autos: 70.20	0.69	-	1.85	-1.20	-4.73	3 0.0	000	0.00
Medium Trucks: 81.00	-10.35	-	1.84	-1.20	-4.88	3 0.0	000	0.00
Heavy Trucks: 85.38	-13.12	-	1.84	-1.20	-5.25	5 0.0	000	0.00
Unmitigated Noise Levels (with		barrier at	tenuation					
VehicleType Leq Peak Ho			q Evening			Ldn		VEL
		65.7	63		60.2	67.9	-	68.
		65.2	61		61.8	68.8	-	69.
		67.6 71.1	60		61.1 65.9	68.9 73.3		69. 73.
Centerline Distance to Noise C			00		30.3	75.		73.
Contentine Distance to Noise C	omour (mrieet,		70 dBA	65 dE	3A	60 dBA	55	dBA
		Ldn:	127	273	}	588	1,:	266

Thursday, August 8, 2019

	FH\	WA-RD-77-108	B HIG	HWAY	NOISE PI	REDICT	ION M	ODEL			
Road Nar	rio: IY+P ne: Limonite Av ent: e/o Sumne							: Home: : 11968	stead		
SITE	SPECIFIC IN	IPUT DATA				Ν	IOISE	MODE	L INPUT	S	
Highway Data					Site Con	ditions	(Hard	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	25.913 vehic	les					Autos:	15		
,	Percentage:	10%			Me	dium Tri	ucks (2	Axles):	15		
Peak I	Hour Volume:	2,591 vehicle	es		He	avy Truc	cks (3+	- Axles):	15		
Ve	ehicle Speed:	50 mph			Vehicle						
	ane Distance:	78 feet				viix icleType		Dav	Evening	Night	Daily
Site Data					Veri		Autos:	74.1%	-	15.6%	,
					M	edium Ti		69.0%		23.8%	
	rrier Height:	0.0 feet				Heavy Ti		82.1%		13.9%	
Barrier Type (0-V	vall, 1-Berm): ist. to Barrier:	0.0								10.570	0.07 /
Centerline D		76.0 feet 76.0 feet			Noise So	ource El	evatio	ns (in f	eet)		
Barrier Distance		0.0 feet				Auto	s: (0.000			
Observer Height		5.0 feet			Mediu	m Truck	s: 2	2.297			
	(Above Pau). Pad Flevation:	0.0 feet			Heav	y Truck	s: 8	3.004	Grade Ad	ljustment	: 0.0
	ad Elevation:	0.0 feet			Lane Eq	uivalent	Dista	nce (in	feet)		
710	Road Grade:	0.0%				Auto		5.422			
	Left View:	-90.0 degre	es		Mediu	m Truck		5.286			
	Right View:	90.0 degre			Heav	y Truck	s: 6	5.299			
FHWA Noise Mod	lel Calculation	s									
VehicleType	REMEL	Traffic Flow	Di	stance	Finite	Road	Fre	snel	Barrier Att	ten Bei	m Atten
Autos:	70.20	1.35	5	-1.8	85	-1.20		-4.73	0.0	000	0.000
Medium Trucks.				-1.8		-1.20		-4.88	0.0	000	0.000
Heavy Trucks:	85.38	-12.52	2	-1.8	84	-1.20		-5.25	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	l barri	ier atte	nuation)						
VehicleType	Leq Peak Hou	ur Leq Da	y	Leq I	Evening	Leq	Night		Ldn	C	NEL
Autos:			66.4		63.9		60		68.	-	68.9
Medium Trucks.			65.9		62.0		62		69.	-	69.7
Heavy Trucks:	69	9.8	68.2		61.0		61	.7	69.	5	69.7
Vehicle Noise.	73	3.7	71.7		67.2		66	i.5	74.0	0	74.2
Centerline Distan	ce to Noise Co	ontour (in fee	t)							,	
			Į		dBA		dBA	(60 dBA		dBA
			Ldn:		140	-	01		648		397
		C	NEL:	1	145	3	12		673	1,	450

Thursday, August 8, 2019

	FHV	VA-RD-77-108	HIGH	WAY N	IOISE P	REDICT	ION MC	DEL			
Road Nam	io: IY+P ne: Limonite Av nt: e/o Scholar						t Name: Vumber:		stead		
SITE	SPECIFIC IN	IPUT DATA				1	NOISE	MODE	L INPUT	S	
Highway Data				5	Site Cor	nditions	(Hard =	: 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	29,430 vehicle	es					Autos:	15		
Peak Hour	Percentage:	10%			Me	edium Ti	rucks (2	Axles):	15		
Peak H	lour Volume:	2,943 vehicles	s		He	eavy Tru	icks (3+	Axles):	15		
Ve	hicle Speed:	50 mph		1	Vehicle	Mix					
Near/Far La	ne Distance:	78 feet		F		icleTyp	е	Day	Evening	Night	Daily
Site Data							Autos:	74.1%	-	15.69	_
Rai	rrier Height:	0.0 feet			M	ledium 7	rucks:	69.0%	7.1%	23.89	6 7.05%
Barrier Type (0-W	/all, 1-Berm):	0.0				Heavy 1	rucks:	82.1%	3.9%	13.99	6 3.63%
Centerline Dis		76.0 feet		1	Voise S	ource E	levation	s (in fe	eet)		
Centerline Dist.		76.0 feet				Auto		.000	,		
Barrier Distance		0.0 feet			Mediu	m Truck	ks: 2	.297			
Observer Height (5.0 feet			Hea	vy Truck	ks: 8	.004	Grade Ad	ljustmer	nt: 0.0
	ad Elevation:	0.0 feet		-			4 Di-4	/!	F41		
	ad Elevation:	0.0 feet		-	Lane Eq		t Distan		eet)		
	Road Grade:	0.0%			11-4	Auto m Truck		.422			
	Left View:	-90.0 degree					00	.286			
	Right View:	90.0 degree	es		неа	vy Truck	(S: 65	.299			
FHWA Noise Mode											
VehicleType	REMEL	Traffic Flow	Dis	tance		Road	Fres		Barrier Att	_	erm Atten
Autos:	70.20	1.90		-1.8	-	-1.20		-4.73		000	0.000
Medium Trucks:	81.00	-9.13		-1.84		-1.20		-4.88		000	0.000
Heavy Trucks:	85.38	-12.00		-1.84	-	-1.20		-5.25	0.0	000	0.000
Unmitigated Noise								_			21.151
VehicleType Autos:	Leq Peak Hou		67.0	Leg E	ening 64.4		Night 61	4	Ldn 69		ONEL 69.4
Medium Trucks:	68		66.4		62.6		63.		70.		70.2
Heavy Trucks:	70		68.7		61.5		62.		70.	-	70.2
Vehicle Noise:	74		72.2		67.8		67.		74.		74.7
Centerline Distance	ce to Noise Co	ontour (in feet)								
-				70 c	iBA .	65	dBA	6	0 dBA	5	5 dBA
			Ldn:	15	52	3	327		704	1	1,518
		Ci	NEL:	15	8	3	339		731	1	1,575

	FHW	A-RD-77-108	HIGH	WAY	NOISE P	REDICT	ON MC	DDEL			
	o: HY e: Archibald Av nt: n/o Chino Av					Project Job N	Name: umber:		stead		
SITE S	SPECIFIC IN	PUT DATA				N	OISE	MODE	L INPUT	S	
Highway Data					Site Cor	nditions	(Hard =	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	37,874 vehicle	es					Autos:	15		
Peak Hour I	Percentage:	10%			Me	edium Tru	ıcks (2	Axles):	15		
Peak Ho	our Volume:	3,787 vehicles	s		He	eavy Truc	cks (3+	Axles):	15		
Vel	hicle Speed:	55 mph		-	Vehicle	Miv					
Near/Far Lar	ne Distance:	93 feet				icleType		Day	Evening	Night	Daily
Site Data							Autos:	74.1%	10.3%	15.6%	89.659
Rar	rier Height:	0.0 feet			M	ledium Ti	rucks:	69.0%	7.1%	23.8%	7.029
Barrier Type (0-Wa		0.0				Heavy Ti	rucks:	82.1%	3.9%	13.9%	3.339
Centerline Dis	st. to Barrier:	74.0 feet		-	Noise S	ource Fl	ovation	ne (in fa	not)		
Centerline Dist. t	to Observer:	74.0 feet		-	NOISE S	Auto:		.000	ei)		
Barrier Distance t	to Observer:	0.0 feet			Modiu	m Truck		.297			
Observer Height (/	Above Pad):	5.0 feet				vy Truck		.004	Grade Ad	liustment	- 0.0
Pa	d Elevation:	0.0 feet								juotimom	. 0.0
Roa	nd Elevation:	0.0 feet			Lane Eq	uivalent	Distar	ice (in i	feet)		
F	Road Grade:	0.0%				Auto	s: 57	.782			
	Left View:	-90.0 degree	es			m Truck		.629			
	Right View:	90.0 degree	es		Hea	vy Truck	s: 57	.644			
FHWA Noise Mode	l Calculations										
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fres	nel	Barrier Att	en Ber	m Atten
Autos:	71.78	2.60		-1.0		-1.20		-4.73		000	0.00
Medium Trucks:	82.40	-8.46		-1.0	03	-1.20		-4.88	0.	000	0.00
Heavy Trucks:	86.40	-11.70		-1.0	03	-1.20		-5.25	0.0	000	0.00
Unmitigated Noise	Levels (witho	ut Topo and	barri	er atte	nuation)						
,,	Leq Peak Hou			Leq E	vening	,	Night		Ldn		NEL
Autos:	72.		70.0		67.5		64.	-	72.		72.
Medium Trucks:	71.	-	69.3		65.5		65.	-	72.		73.
Heavy Trucks:	72.		70.8		63.7		64.		72.		72.
Vehicle Noise:	76.	9	74.9		70.6	i	69.	8	77.	2	77.
Centerline Distanc	e to Noise Co	ntour (in feet)								
			L		dBA		dBA		0 dBA		dBA
			Ldn:		23		31		1,036		233
		Ci	NEL:	2	32	50	00		1,077	2,	320

11111A-105-11-1001	IIGHWAY	Y NOISE P	REDICTION	MODEL			
Scenario: IY+P Road Name: Limonite Av. Road Segment: e/o Hamner Av.				ame: Home aber: 11968			
SITE SPECIFIC INPUT DATA					L INPUTS	5	
Highway Data		Site Cor	nditions (Ha	ard = 10, S	oft = 15)		
Average Daily Traffic (Adt): 32,250 vehicles	i			Autos	: 15		
Peak Hour Percentage: 10%			edium Truck				
Peak Hour Volume: 3,225 vehicles		He	eavy Trucks	(3+ Axles)	: 15		
Vehicle Speed: 45 mph		Vehicle	Mix				
Near/Far Lane Distance: 78 feet		Veh	icleType	Dav	Evening	Night	Dailv
Site Data			Aut	os: 74.19	-	15.6%	89.31%
Barrier Height: 0.0 feet		M	ledium Truc	ks: 69.09	6 7.1%	23.8%	7.07%
Barrier Type (0-Wall, 1-Berm): 0.0			Heavy Truc	ks: 82.19	6 3.9%	13.9%	3.62%
Centerline Dist. to Barrier: 76.0 feet		Noise S	ource Eleva	ations (in f	eet)		
Centerline Dist. to Observer: 76.0 feet			Autos:	0.000			
Barrier Distance to Observer: 0.0 feet		Mediu	m Trucks:	2.297			
Observer Height (Above Pad): 5.0 feet		Hea	vy Trucks:	8.004	Grade Adj	ustment	0.0
Pad Elevation: 0.0 feet Road Elevation: 0.0 feet		I ano Eo	uivalent Di	stanco (in	foot)		
Road Elevation: 0.0 feet Road Grade: 0.0%		Lane Lq	Autos:	65.422	reet)		
Left View: -90.0 degrees		Madii	m Trucks:	65.286			
Right View: 90.0 degrees			vy Trucks:	65.299			
FHWA Noise Model Calculations							
VehicleType REMEL Traffic Flow	Distance	e Finite	Road	Fresnel	Barrier Atte	en Ber	m Atten
Autos: 68.46 2.76	-1	1.85	-1.20	-4.73	0.0	100	0.00
Medium Trucks: 79.45 -8.26		1.84	-1.20	-4.88			0.00
Heavy Trucks: 84.25 -11.17		1.84	-1.20	-5.25	0.0	100	0.00
Unmitigated Noise Levels (without Topo and b							
VehicleType Leq Peak Hour Leq Day Autos: 68.2 6	6.1 Leq	Evening 63.5	Leq Nig		Ldn 68.2		VEL 68.0
	5.7	61.9		60.6 62.4	69.3		69.
	5. <i>1</i> 8.4	61.8		61.9	69.8		69.9
	1.7	67.1		66.5	73.9		74.
Vehicle Noise: 73.7 7							
Vehicle Noise: 73.7 7 Centerline Distance to Noise Contour (in feet)							
	7	'0 dBA	65 dB	4	60 dBA	55	dBA
Centerline Distance to Noise Contour (in feet)	dn:	<i>'0 dBA</i>	65 dB ₂	4	60 dBA 643		dBA 386

Thursday, August 8, 2019

FHWA-RD-77-108	HIGHWAY	NOISE PR	REDICTIO	N MODEL			
Scenario: HY Road Name: Archibald Av. Road Segment: s/o Chino Av.				ame: Hom nber: 1196			
SITE SPECIFIC INPUT DATA			NC	ISE MOE	EL INPUT	S	
Highway Data		Site Con	ditions (H	lard = 10,	Soft = 15)		
Average Daily Traffic (Adt): 35,133 vehicl	es			Auto	s: 15		
Peak Hour Percentage: 10%		Me	dium Truc	ks (2 Axle:	s): 15		
Peak Hour Volume: 3,513 vehicle	s	He	avy Truck	s (3+ Axle	s): 15		
Vehicle Speed: 55 mph		Vehicle I	Niv				
Near/Far Lane Distance: 93 feet			cleType	Dav	Evening	Night	Daily
Site Data				tos: 74.1		15.6%	89.65%
Barrier Height: 0.0 feet		Me	edium Tru	cks: 69.0	0% 7.1%	23.8%	7.02%
Barrier Type (0-Wall, 1-Berm): 0.0		F	leavy Tru	cks: 82.1	% 3.9%	13.9%	3.33%
Centerline Dist. to Barrier: 74.0 feet							
Centerline Dist. to Observer: 74.0 feet		Noise So		ations (in	feet)		
Barrier Distance to Observer: 0.0 feet			Autos:	0.000			
Observer Height (Above Pad): 5.0 feet			n Trucks:	2.297	0	# t	0.0
Pad Elevation: 0.0 feet		Heav	y Trucks:	8.004	Grade Ad	ljustment:	0.0
Road Elevation: 0.0 feet		Lane Equ	ıivalent D	istance (i	n feet)		
Road Grade: 0.0%			Autos:	57.782			
Left View: -90.0 degre	es	Mediur	n Trucks:	57.629			
Right View: 90.0 degre	es	Heav	y Trucks:	57.644			
FHWA Noise Model Calculations							
VehicleType REMEL Traffic Flow	Distance			Fresnel	Barrier At		n Atten
Autos: 71.78 2.27 Medium Trucks: 82.40 -8.79		.05	-1.20 -1.20	-4.7 -4.8		000	0.000
Heavy Trucks: 82.40 -8.79 Heavy Trucks: 86.40 -12.03		.03	-1.20	-4.8 -5.2		000	0.000
Unmitigated Noise Levels (without Topo and			-1.20	-5.2	5 0.	000	0.000
VehicleType Leg Peak Hour Leg Da		Evening	Leg Ni	oht	I dn	C	IFI
Autos: 71.8	69.7	67.2	Logivi	64.2	71.		72.2
Medium Trucks: 71.4	69.0	65.1		65.6	72.	-	72.8
Heavy Trucks: 72.1	70.5	63.3		64.0	71.	-	72.0
Vehicle Noise: 76.6	74.5	70.3		69.5	76.		77.1
Centerline Distance to Noise Contour (in fee)						
•	7	0 dBA	65 dE	3A	60 dBA	55	dBA
	Ldn:	212	458		986	2,1	124
	NFI:	221	475		1.024	2.5	207

Thursday, August 8, 2019

	FHV	VA-RD-77-108	HIGH	WAY N	OISE P	REDICT	ION MC	DEL			
	io: HY ne: Archibald A nt: s/o Schaefe						t Name: lumber:		tead		
SITE	SPECIFIC IN	IPUT DATA				1	NOISE I	MODE	L INPUT	S	
Highway Data				5	Site Con	nditions	(Hard =	: 10, Sc	ft = 15)		
Average Daily	Traffic (Adt):	33,464 vehicle	es					Autos:	15		
Peak Hour	Percentage:	10%			Me	edium Ti	ucks (2	Axles):	15		
Peak H	lour Volume:	3,346 vehicles	s		He	eavy Tru	cks (3+	Axles):	15		
Ve	hicle Speed:	55 mph		١	/ehicle	Mix					
Near/Far La	ne Distance:	93 feet				icleType	9	Day	Evening	Night	Daily
Site Data							Autos:	74.1%	Ü	15.69	_
Rai	rrier Height:	0.0 feet			М	ledium 7	rucks:	69.0%	7.1%	23.89	6 7.02%
Barrier Type (0-W	/all, 1-Berm):	0.0				Heavy 7	rucks:	82.1%	3.9%	13.99	6 3.33%
Centerline Dis		74.0 feet		1	Voise S	ource E	levation	s (in fe	et)		
Centerline Dist.		74.0 feet				Auto	s: 0.	.000			
Barrier Distance		0.0 feet			Mediu	m Truck	rs: 2.	297			
Observer Height (5.0 feet			Hear	vy Truck	rs: 8.	.004	Grade Ad	justmer	nt: 0.0
	ad Elevation:	0.0 feet		,	one Fe	ivalan	4 Dioton	oo (in i	in n 4 l		
	ad Elevation:	0.0 feet			.ane Eq	uivaien Auto	t Distan	ce (III 1 782	eet)		
	Road Grade: Left View:	0.0%			Modiu	m Truck		.782			
		-90.0 degree				vy Truck		644			
	Right View:	90.0 degree	es		пеа	vy Truck	18. 57	.044			
FHWA Noise Mode											
VehicleType	REMEL	Traffic Flow	Dist	tance		Road	Fresi		Barrier Att		erm Atten
Autos:	71.78	2.06		-1.05	-	-1.20		-4.73		000	0.000
Medium Trucks:	82.40	-9.00		-1.03	-	-1.20 -1.20		-4.88		000	0.000
Heavy Trucks:	86.40	-12.24		-1.03		-1.20		-5.25	0.0	000	0.000
VehicleType							A E In A	1	Lata	1 ,	ONEL
Autos:	Leq Peak Hou		69.5	Leq Ev	ening 67.0		Night 64	n	Ldn 71.		72.0
Medium Trucks:	71		68.8		64.9		65.	-	72.	-	72.6
Heavy Trucks:	71	-	70.3		63.1		63		71.		71.8
Vehicle Noise:	76		74.3		70.1		69.	-	76.		76.9
Centerline Distance	ce to Noise Co	ontour (in feet)								
•				70 a	IBA	65	dBA	6	0 dBA	5.	5 dBA
			Ldn:	20	16	4	43		954	2	2,056
		C	NEL:	21	4	4	60		992	2	2,136

	FHV	VA-RD-77-108	HIGH	WAY I	NOISE P	REDICTI	ON MC	DEL			
Scenario Road Namo Road Segmen	e: Archibald A					Project Job N	Name: umber:		stead		
SITE S	SPECIFIC IN	PUT DATA				N	OISE	MODE	L INPUT	S	
Highway Data					Site Cor	ditions	Hard =	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	40,418 vehicle	es					Autos:	15		
Peak Hour	Percentage:	10%			Me	edium Tru	icks (2	Axles):	15		
Peak H	our Volume:	4,042 vehicles	s		He	eavy Truc	ks (3+	Axles):	15		
Vel	hicle Speed:	55 mph		ŀ	Vehicle	Miv					
Near/Far Lar	ne Distance:	93 feet		-		icleType		Dav	Evening	Night	Daily
Site Data							utos:	74.1%	-	15.6%	/
Par	rier Height:	0.0 feet			M	ledium Tr	ucks:	69.0%	7.1%	23.8%	7.029
Barrier Type (0-W		0.0				Heavy Tr	ucks:	82.1%	3.9%	13.9%	3.339
Centerline Dis		74.0 feet		-	Maine C	ource El	overtie :	an (in f	2041		
Centerline Dist.	to Observer:	74.0 feet		-	Noise S	Auto:			et)		
Barrier Distance t	to Observer:	0.0 feet			Modis	m Trucks		.000			
Observer Height (Above Pad):	5.0 feet				m Trucks vy Trucks		.004	Grade Ad	iustmont	. 0.0
Pa	d Elevation:	0.0 feet			пеа	vy Trucks	s. o	.004	Grade Au	usunen	0.0
Roa	d Elevation:	0.0 feet			Lane Eq	uivalent	Distar	ice (in i	feet)		
F	Road Grade:	0.0%				Autos	: 57	.782			
	Left View:	-90.0 degree	es		Mediu	m Trucks	: 57	.629			
	Right View:	90.0 degree	es		Hea	vy Trucks	s: 57	.644			
FHWA Noise Mode	l Calculations	3		1							
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fres	nel	Barrier Att	en Ber	m Atten
Autos:	71.78	2.88		-1.0)5	-1.20		-4.73	0.0	000	0.00
Medium Trucks:	82.40	-8.18		-1.0		-1.20		-4.88		000	0.00
Heavy Trucks:	86.40	-11.42		-1.0	03	-1.20		-5.25	0.0	000	0.00
Unmitigated Noise	Levels (with	out Topo and	barrie	er attei	nuation)						
,,,	Leq Peak Hou	- , -,		Leq E	vening		Vight		Ldn		VEL
Autos:	72		70.3		67.8		64.	-	72.4		72.
Medium Trucks:	72	-	69.6		65.7		66.	_	73.2	-	73.
Heavy Trucks:	72	•	71.1		63.9		64.	7	72.		72.
Vehicle Noise:	77	.2	75.2		70.9	1	70.	.1	77.	5	77.
Centerline Distanc	e to Noise Co	ntour (in feet)								
			L		dBA	65 (0 dBA		dBA
			Ldn:	_	33	50	-		1,082		332
		C	NEL:	2	42	52	2		1,125	2,	423

	FHV	VA-RD-77-108	HIGHV	WAY NO	DISE PF	REDICT	ION MC	DEL			
Scenario Road Name Road Segmen	: Archibald A						Name: lumber:		stead		
SITE S	PECIFIC IN	IPUT DATA				N	NOISE I	MODE	L INPUT	S	
Highway Data				Si	ite Con	ditions	(Hard =	: 10, Sc	oft = 15)		
Average Daily 1 Peak Hour F Peak Ho	. ,	40,669 vehicle 10% 4,067 vehicle				dium Tr avy Tru	ucks (2		15		
Veh	icle Speed:	55 mph		1/	ehicle I	Miv					
Near/Far Lan	e Distance:	93 feet		-		icleType		Dav	Evening	Night	Daily
Site Data					VOIII		Autos:	74.1%		15.6%	,
	rier Heiaht:	0.0 feet			М	edium T	rucks:	69.0%	7.1%	23.8%	7.02%
Barrier Type (0-Wa	all, 1-Berm):	0.0			F	leavy T	rucks:	82.1%	3.9%	13.9%	
Centerline Dis		74.0 feet		N	oise Sc	ource El	levation	s (in f	eet)		
Centerline Dist. to		74.0 feet				Auto	s: 0.	.000			
Barrier Distance to		0.0 feet			Mediui	m Truck	s: 2	297			
Observer Height (A		5.0 feet			Heav	y Truck	s: 8	.004	Grade Ad	ljustmen	t: 0.0
	d Elevation:	0.0 feet		-				,,			
	d Elevation:	0.0 feet		Li	ane Equ	uivalen			reet)		
R	load Grade:	0.0%				Auto		.782			
	Left View: Right View:	-90.0 degree				m Truck ry Truck	0,	.629 .644			
FHWA Noise Mode	l Calculation:	s									
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresi	nel	Barrier Att	en Be	rm Atten
Autos:	71.78	2.91		-1.05		-1.20		-4.73	0.0	000	0.000
Medium Trucks:	82.40	-8.15		-1.03		-1.20		-4.88	0.0	000	0.000
Heavy Trucks:	86.40	-11.39		-1.03		-1.20		-5.25	0.0	000	0.000
Unmitigated Noise	Levels (with	out Topo and	barrier	attenu	ation)						
	Leq Peak Hou			Leq Eve		Leq	Night		Ldn		NEL
Autos:	72		70.3		67.8		64.	-	72.	-	72.8
Medium Trucks:	72		69.6		65.8		66.		73.	_	73.4
Heavy Trucks:	72		71.1		64.0		64.		72.	_	72.7
Vehicle Noise:	77		75.2		70.9		70.	1	77.	5	77.8
Centerline Distance	e to Noise Co	ontour (in feet)	70 -//		05	-/0.4		20 -/04		- 40.4
			Lalni	70 dE			dBA	_	60 dBA		5 dBA
		0	Ldn: NFI:	234			04 24		1,087		,341
		C	IVEL:	243	,	5.	24		1,129	2	,433

Thursday, August 8, 201

	FH\	WA-RD-77-108	HIGH	1 YAWI	IOISE P	REDICTION	ON MO	DDEL			
Road Na	rio: HY me: Archibald A ent: s/o Merrill A					Project I Job Nu					
SITE	SPECIFIC IN	IPUT DATA				N	DISE	MODE	L INPUT	S	
Highway Data					Site Cor	ditions (Hard =	= 10, S	oft = 15)		
Average Daily	/ Traffic (Adt):	43,131 vehicl	es					Autos.	15		
Peak Hou	r Percentage:	10%			Me	edium Tru	cks (2	Axles).	15		
Peak	Hour Volume:	4,313 vehicle	s		He	avy Truci	ks (3+	Axles).	15		
V	ehicle Speed:	55 mph		+	Vehicle	Miv					
Near/Far L	ane Distance:	93 feet		-		icleType		Dav	Evening	Night	Daily
Site Data				\rightarrow	Ven		utos:	74.19	-	15.6%	
						edium Tri		69.09		23.8%	
	arrier Height:	0.0 feet				Heavy Tru		82.19		13.9%	
Barrier Type (0-1	. ,	0.0								10.07	0.0070
Centerline L Centerline Dist	ist. to Barrier:	74.0 feet 74.0 feet			Noise S	ource Ele	vatio	ıs (in f	eet)		
						Autos.	: 0	.000			
Barrier Distance		0.0 feet			Mediu	m Trucks	: 2	.297			
Observer Height	(Above Pad): Pad Elevation:	5.0 feet 0.0 feet			Hear	vy Trucks	: 8	.004	Grade Ad	ljustmen	t: 0.0
	ad Elevation: and Flevation:	0.0 feet		H	l ano Fa	uivalent i	Dietar	nce (in	foot)		
R	Road Grade:	0.0 feet 0.0%		· F	Lane Lq	Autos		782	1001)		
	I eft View:	-90.0 degre			Modiu	m Trucks		629			
	Right View:	90.0 degre				vy Trucks.	-	.644			
	Right view.	90.0 degre	28		Tica	vy Trucks.	. 31	.044			
FHWA Noise Mod											
VehicleType	REMEL	Traffic Flow		tance		Road	Fres		Barrier Att		rm Atten
Autos				-1.0		-1.20		-4.73		000	0.000
Medium Trucks				-1.0	-	-1.20		-4.88		000	0.000
Heavy Trucks	: 86.40	-11.14		-1.0	3	-1.20		-5.25	0.0	000	0.000
Unmitigated Nois	e Levels (with			er atten	uation)						
VehicleType	Leq Peak Ho	ur Leq Daj	/	Leq E	vening	Leq ∧	light		Ldn		NEL
Autos	: 72	2.7	70.6		68.1		65	1	72.	7	73.1
Medium Trucks		2.3	69.9		66.0		66		73.		73.7
Heavy Trucks	: 73	3.0	71.4		64.2		64	9	72.	В	72.9
Vehicle Noise	: 77	7.5	75.4		71.2		70	3	77.	В	78.0
Centerline Distar	ice to Noise C	ontour (in feet)			r		,		1	
			L		dBA	65 d		- 1	60 dBA		5 dBA
		_	Ldn:	24		52	-		1,130		,435
		С	NEL:	25	53	54	5		1,174	2	,530

F	HWA-RD-77-1	08 HIGH	HWAY	NOISE P	REDICT	ION MO	DEL			
Scenario: HY Road Name: Archibalo Road Segment: s/o Limo						t Name: lumber:		stead		
SITE SPECIFIC	INPUT DATA	A.			١	NOISE I	MODE	L INPUT	S	
Highway Data				Site Con	ditions	(Hard =	10, S	oft = 15)		
Average Daily Traffic (Adt).	44,433 vehi	cles					Autos:	15		
Peak Hour Percentage.	10%			Me	edium Tr	ucks (2	Axles):	15		
Peak Hour Volume.	4,443 vehic	les		He	avy Tru	cks (3+)	Axles):	15		
Vehicle Speed.	50 mph			Vehicle	Miv					
Near/Far Lane Distance.	78 feet		ł		icleType	9	Day	Evening	Night	Daily
Site Data						Autos:	74.1%		15.69	-
Barrier Height.	0.0 feet			М	edium T	rucks:	69.0%	7.1%	23.89	6 7.02%
Barrier Type (0-Wall, 1-Berm)					Heavy T	rucks:	82.1%	3.9%	13.99	6 3.33%
Centerline Dist. to Barrier			-							
Centerline Dist. to Observer	76.0 feet			Noise S				eet)		
Barrier Distance to Observer	0.0 feet				Auto		000			
Observer Height (Above Pad)	5.0 feet				m Truck		297	Grade Ad	iuotmor	t 0.0
Pad Elevation	0.0 feet			Hear	y Truck	s: 8.	004	Grade Ad,	usuner	n. 0.0
Road Elevation	0.0 feet			Lane Eq	uivalen	t Distan	ce (in	feet)		
Road Grade	0.0%				Auto	s: 65.	422			
Left View	-90.0 deg	rees		Mediu	m Truck	s: 65.	286			
Right View	90.0 deg	rees		Hear	y Truck	s: 65.	299			
FHWA Noise Model Calculation	ons									
VehicleType REMEL	Traffic Flov	_	stance		Road	Fresi		Barrier Att	_	erm Atten
Autos: 70.2			-1.8		-1.20		-4.73		000	0.000
Medium Trucks: 81.0			-1.8		-1.20		-4.88		000	0.000
Heavy Trucks: 85.3	38 -10.5	59	-1.8	34	-1.20		-5.25	0.0	000	0.000
Unmitigated Noise Levels (wi		d barri	er atte	nuation)						
VehicleType Leq Peak H			Leq E	vening		Night		Ldn		CNEL
	70.9	68.8		66.2		63.3		70.9		71.3
	70.6	68.2		64.4		64.	-	71.8	-	72.0
	71.7 75.9	70.1		62.9 69.5		63.6		71.5 76.2		71.6 76.4
Centerline Distance to Noise				00.0			•	. 0.2	_	. 0
Mile Biolanes to Holds		/	70	dBA	65	dBA		60 dBA	5	5 dBA
		Ldn:	1	96	4	22		908	1	,957
		CNEL:	2	03	4	38		943		.032

	FHW	A-RD-77-108	HIGHV	VAY N	OISE P	REDICT	ON MO	DEL			
	o: HY e: Kimball Av. t: w/o Hellman	Av.					Name: umber:		tead		
SITE S	PECIFIC INF	UT DATA				Ν	IOISE I	MODE	INPUT	S	
Highway Data				S	ite Cor	ditions	(Hard =	10, So	ft = 15)		
Average Daily T	raffic (Adt): 2	6,819 vehicle	s					Autos:	15		
Peak Hour F	Percentage:	10%			Me	dium Tr	icks (2	Axles):	15		
Peak Ho	our Volume: 2	2,682 vehicles	3		He	avy Tru	cks (3+)	Axles):	15		
Veh	icle Speed:	50 mph		1/	ehicle	Miv					
Near/Far Lan	e Distance:	51 feet		ř		icleType		Dav	Evening	Night	Daily
Site Data							Autos:	74.1%	10.3%	15.6%	
Rarr	ier Height:	0.0 feet			М	edium T	rucks:	69.0%	7.1%	23.8%	7.029
Barrier Type (0-Wa		0.0				Heavy T	rucks:	82.1%	3.9%	13.9%	3.339
Centerline Dist	t. to Barrier:	49.0 feet		٨	loise Si	ource El	evation	s (in fe	et)		
Centerline Dist. to	Observer:	49.0 feet		- "	10/30 01	Auto		000	01)		
Barrier Distance to	o Observer:	0.0 feet			Madiu	m Truck		297			
Observer Height (A	lbove Pad):	5.0 feet				vy Truck		004	Grade Ad	iustment	0.0
Pad	d Elevation:	0.0 feet								dournorn	0.0
Road	d Elevation:	0.0 feet		L	ane Eq	uivalent	Distan	ce (in f	eet)		
R	oad Grade:	0.0%				Auto		140			
	Left View:	-90.0 degree	s			m Truck		929			
	Right View:	90.0 degree	es		Hear	y Truck	s: 41.	950			
FHWA Noise Model	Calculations										
VehicleType		Traffic Flow	Dista			Road	Fresi		Barrier Att		m Atten
Autos:	70.20	1.51		1.01		-1.20		-4.64		000	0.00
Medium Trucks:	81.00	-9.55		1.04		-1.20		-4.87		000	0.00
Heavy Trucks:	85.38	-12.79		1.04		-1.20		-5.44	0.0	000	0.00
Unmitigated Noise											
	eq Peak Hour			Leq Ev		,	Night		Ldn		VEL
Autos:	71.5		69.4		66.9		63.9	-	71.	-	71.
Medium Trucks:	71.3		68.9		65.0		65.	-	72.	-	72.
Heavy Trucks: Vehicle Noise:	72.4 76.6		70.8 74.6		63.6 70.2		64.3	-	72.2 76.8		72. 77.
VOLINGIO I VOISE.					10.2		03.	•	, 0.0		11.
Cantarlina Diat											
Centerline Distance	e to Noise Con	,		70 d	BA	65	dBA	6	0 dBA	55	dBA
Centerline Distance	e to Noise Con	, ,	Ldn:	70 d			dBA 02	6	0 dBA 651		dBA 402

	FHV	VA-RD-77-108	HIGHW	AY NO	ISE PI	REDICT	ION MC	DEL			
Scenario Road Name Road Segmen	e: Archibald A	v.				Project Job N	Name: umber:		stead		
SITE S	PECIFIC IN	PUT DATA							L INPUT	S	
Highway Data				Si	te Con	ditions	(Hard =	: 10, Sc	oft = 15)		
Average Daily T	raffic (Adt):	36,343 vehicle	es					Autos:	15		
Peak Hour I	Percentage:	10%			Me	edium Tri	ucks (2	Axles):	15		
Peak Ho	our Volume:	3,634 vehicle	S		He	eavy Truc	cks (3+	Axles):	15		
Veh	icle Speed:	50 mph		V	ehicle i	Mix					
Near/Far Lar	e Distance:	78 feet		<u> </u>		icleType		Day	Evening	Night	Daily
Site Data							Autos:	74.1%	10.3%	15.6%	89.65
Bar	rier Heiaht:	0.0 feet			М	edium T	rucks:	69.0%	7.1%	23.8%	7.02
Barrier Type (0-Wa	all, 1-Berm):	0.0			-	Heavy Ti	rucks:	82.1%	3.9%	13.9%	3.33
Centerline Dis		76.0 feet		N	oise So	ource El	evation	s (in fe	eet)		
Centerline Dist. t		76.0 feet				Auto	s: 0	.000			
Barrier Distance t		0.0 feet			Mediu	m Truck	s: 2	297			
Observer Height (A	Above Pad): d Flevation:	5.0 feet			Heav	vy Truck	s: 8	.004	Grade Ad	ljustment	0.0
	d Elevation: d Flevation:	0.0 feet		1.	no Ea	uivalent	Dictor	co (in	Foot)		
	a Elevation: Road Grade:	0.0 feet 0.0%		Le	ine Ly	Auto		422	eei)		
,	Left View:	-90.0 degre			Modiu	m Truck		286			
	Right View:	90.0 degree				vy Truck		.299			
HWA Noise Mode	l Calculation:	i									
VehicleType	REMEL	Traffic Flow	Dista		Finite	Road	Fres		Barrier At		m Atte
Autos:	70.20	2.83		-1.85		-1.20		-4.73		000	0.0
Medium Trucks:	81.00	-8.23		-1.84		-1.20		-4.88		000	0.0
Heavy Trucks:	85.38	-11.47		-1.84		-1.20		-5.25	0.	000	0.0
Unmitigated Noise VehicleType						1	A II aufo t	_	t da		
Autos:	Leq Peak Hou 70		67.9	eq Eve	ening 65.3		Night 62	4	Ldn 70		NEL 70
Medium Trucks:	69	-	67.3		63.5		64.		70.	-	71
Heavy Trucks:	70		69.2		62.1		62.	-	70.	-	70
Vehicle Noise:	75	-	73.0		68.6		67.	-	75.	_	75
Centerline Distanc	e to Noise Co	ntour (in feet)								
				70 dE	3A	65	dBA	- 6	60 dBA	55	dBA
			Ldn:	171		21	39		794	- 1	711
			Luii.	17.1		31	55		134	٠,	

Thursday, August 8, 2019

	FH	WA-RD-77-10	B HIG	HWAY	NOISE PE	REDICTI	ON M	ODEL			
Scena	rio: HY					Project	Name	: Homes	stead		
	ne: Limonite A					Job N	umber	: 11968			
Road Segme	ent: e/o Hellma	n Av.									
SITE	SPECIFIC IN	NPUT DATA							L INPUT	S	
Highway Data					Site Con	ditions (Hard	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	33,972 vehic	les					Autos:	15		
Peak Hou	r Percentage:	10%			Me	dium Tru	icks (2	Axles):	15		
Peak I	Hour Volume:	3,397 vehicle	es		He	avy Truc	ks (3+	+ Axles):	15		
Ve	ehicle Speed:	50 mph			Vehicle I	Miv					
Near/Far La	ane Distance:	78 feet				icleType		Dav	Evening	Night	Daily
Site Data							lutos:	74.1%		15.6%	
D-	rrier Height:	0.0 feet			M	edium Tr	ucks:	69.0%	7.1%	23.8%	7.02%
Barrier Type (0-V		0.0			I	Heavy Tr	ucks:	82.1%	3.9%	13.9%	3.33%
	ist. to Barrier:	76.0 feet			Noise Sc	51		(! 6-	41		
Centerline Dist.	to Observer:	76.0 feet			Noise Sc	Autos		0.000	eet)		
Barrier Distance	to Observer:	0.0 feet			Modiu	Autos m Trucks		2.297			
Observer Height	(Above Pad):	5.0 feet				y Trucks		2.29 <i>1</i> B.004	Grade Ad	liuetmant	. 0 0
F	Pad Elevation:	0.0 feet				•				justinone	. 0.0
Ro	ad Elevation:	0.0 feet			Lane Eq	uivalent	Dista	nce (in i	feet)		
	Road Grade:	0.0%				Autos	s: 6	5.422			
	Left View:	-90.0 degre	ees		Mediu	m Trucks	s: 6	5.286			
	Right View:	90.0 degre	ees		Heav	y Trucks	8: 6	5.299			
FHWA Noise Mod	lel Calculation	ıs									
VehicleType	REMEL	Traffic Flow		stance		Road	Fre		Barrier At		m Atten
Autos:				-1.8		-1.20		-4.73		000	0.000
Medium Trucks.				-1.8		-1.20		-4.88		000	0.000
Heavy Trucks:	85.38	-11.76	3	-1.8	34	-1.20		-5.25	0.	000	0.000
Unmitigated Nois											
VehicleType	Leq Peak Ho		,	Leq E	vening	Leq I			Ldn		VEL
Autos:		9.7	67.6		65.0		62		69.		70.1
Medium Trucks.		9.4	67.0		63.2		63		70.	-	70.8
Heavy Trucks:		0.6	68.9		61.8			2.5	70.		70.5
Vehicle Noise.		1.7	72.7		68.3		67	7.6	75.	0	75.2
Centerline Distan	ce to Noise C	ontour (in fee	t)							,	
			!		dBA	65 (6	60 dBA		dBA
			Ldn:		64	35	-		759	,	636
		(NEL:	1	70	36	66		789	1,	699

Thursday, August 8, 2019

Scenario: HY
Highway Data Site Conditions (Hard = 10, Soft = 15) Autos: 15
Average Daily Traffic (Adt): 54,064 vehicles Peak Hour Percentage: 10% Medium Trucks (2 Axles): 15
Peak Hour Percentage: 10% Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15 Heavy Trucks (3+ Axles): 15
Peak Hour Volume: 5,406 vehicles Yehicle Speed: 50 mph Yehicle Mix
Near/Far Lane Distance: 78 feet Vehicle Mix Vehicle Type Day Evening Night Dai
Near/Far Lane Distance: 78 feet VehicleType Day Evening Night Dai
Barrier Height: 0.0 feet Medium Trucks: 69.0% 7.1% 23.8% 7.0
Barrier Type (0-Wall, 1-Berm): 0.0 teet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Pad Elevation: 0.0 feet Heavy Trucks: 8.1% 3.9% 13.9% 3.3 Moise Source Elevations (in feet) Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0
Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet
Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Pad Elevation: 0.0 feet
Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0
Barrier Distance to Observer: 0.0 feet
Pad Elevation: 0.0 feet
Pad Elevation: 0.0 feet
Road Elevation: 0.0 feet Lane Equivalent Distance (in feet)
Road Grade: 0.0% Autos: 65.422
Left View: -90.0 degrees Medium Trucks: 65.286
Right View: 90.0 degrees Heavy Trucks: 65.299
FHWA Noise Model Calculations
VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atte
Autos: 70.20 4.56 -1.85 -1.20 -4.73 0.000 0.0
Medium Trucks: 81.00 -6.50 -1.84 -1.20 -4.88 0.000 0.0
Heavy Trucks: 85.38 -9.74 -1.84 -1.20 -5.25 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: 71.7 69.6 67.1 64.1 71.7 7
Medium Trucks: 71.5 69.1 65.2 65.7 72.6 7
Heavy Trucks: 72.6 70.9 63.8 64.5 72.3 7 Vehicle Noise: 76.7 74.7 70.3 69.6 77.0 7
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA
Ldn: 223 480 1,035 2,230
CNEL: 232 499 1.075 2.316

	FH\	WA-RD-77-108	HIGH	1 YAWH	IOISE P	REDICT	ION M	ODEL			
	io: HY e: Limonite Av nt: e/o Sumne							: Home: : 11968			
	SPECIFIC IN						NOISE	MODE	L INPUT	2	
Highway Data	SELCII IC III	FUIDAIA			Site Cor				oft = 15)		
Average Daily	Traffic (Adt):	44,429 vehicle	29					Autos			
	Percentage:	10%			Me	edium Ti	rucks (2				
	our Volume:	4,443 vehicle	s			eavy Tru		,			
Vei	hicle Speed:	50 mph			Vehicle						
Near/Far Lai	ne Distance:	78 feet		-		iviix nicleTyp	۵	Dav	Evening	Night	Dailv
Site Data					VC/		Autos:	74.19		15.6%	- /
	uda u Haladat	0.0 feet			N	ledium 1		69.0%		23.8%	
Barrier Type (0-W	rier Height:	0.0 reet 0.0				Heavy 7	rucks:	82.1%	6 3.9%	13.9%	
Centerline Dis	. ,	76.0 feet		-							
Centerline Dist		76.0 feet			Noise S				eet)		
Barrier Distance	to Observer:	0.0 feet				Auto		0.000			
Observer Height (Above Pad):	5.0 feet				m Truck		2.297	Crada Ad	i rotmont	
Pa	ad Elevation:	0.0 feet			неа	vy Truci	(S: (3.004	Grade Ad	usuneni	. 0.0
Roa	ad Elevation:	0.0 feet			Lane Eq	uivalen	t Dista	nce (in	feet)		
F	Road Grade:	0.0%				Auto	os: 6	5.422			
	Left View:	-90.0 degree	es		Mediu	ım Truck	ks: 6	5.286			
	Right View:	90.0 degree	es		Hea	vy Truck	ks: 6	5.299			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	stance		Road	Fre		Barrier Att		m Atten
Autos:	70.20	3.71		-1.8	-	-1.20		-4.73		000	0.00
Medium Trucks:	81.00	-7.36		-1.8		-1.20		-4.88		000	0.00
Heavy Trucks:	85.38	-10.59		-1.8		-1.20		-5.25	0.0	000	0.00
Unmitigated Noise							A Contact		Ldn		NEL
VehicleType Autos:	Leq Peak Hou		68.8	Leq E	vening 66.2		Night	3.3	70.9		VEL 71.
Medium Trucks:	70		68.2		64.4			.8	70.8		71.
Heavy Trucks:	71		70.1		62.9		63		71.6		71.
Vehicle Noise:	-	i.9	73.9		69.5		68		76.2		76.
Centerline Distanc	e to Noise Co	ontour (in feet)								
		,		70	dBA	65	dBA		60 dBA	55	dBA
			Ldn:	19	96	4	122		908	1,	957
		0	NEL:		03		138		943	2	032

	FH\	WA-RD-77-108	HIGHW	AY N	DISE PR	EDICTIO	N MODE	ĒL			
Scenario Road Name Road Segmen	e: Limonite A					Project Na Job Nun			ad		
	SPECIFIC IN	NPUT DATA							NPUTS	;	
Highway Data				S	ite Con	ditions (H	ard = 10), Soft:	= 15)		
Average Daily	Traffic (Adt):	55,789 vehicle	es					ıtos:	15		
Peak Hour I		10%				dium Truck		,	15		
	our Volume:	5,579 vehicles	5		Hea	avy Trucks	(3+ Ax	les):	15		
	hicle Speed:	50 mph		V	ehicle N	1ix					
Near/Far Lar	ne Distance:	78 feet			Vehi	cleType	Di	ay E	/ening	Night	Daily
Site Data						Aut	os: 74	1.1%	10.3%	15.6%	89.65%
Bar	rier Height:	0.0 feet			Me	edium Truc	ks: 69	9.0%	7.1%	23.8%	7.02%
Barrier Type (0-Wa	-	0.0			H	leavy Truc	ks: 82	2.1%	3.9%	13.9%	3.33%
Centerline Dis	t. to Barrier:	76.0 feet		N	nise Sn	urce Elev	ations (in feet)		
Centerline Dist. t	to Observer:	76.0 feet		Ë	0,00 00	Autos:	0.00				
Barrier Distance t	to Observer:	0.0 feet			Mediur	n Trucks:	2.29				
Observer Height (/	,	5.0 feet			Heav	y Trucks:	8.00	4 Gr	ade Adju	ustment	0.0
	d Elevation:	0.0 feet		-							
	d Elevation:	0.0 feet		L	ane Equ	ivalent D		•	t)		
F	Road Grade:	0.0%				Autos:	65.42	_			
	Left View: Right View:	-90.0 degree				n Trucks: y Trucks:	65.28 65.29	-			
FHWA Noise Mode	l Calculation	•									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresnel	Ba	rrier Atte	n Ber	m Atten
Autos:	70.20	4.70		-1.85		-1.20	-4	1.73	0.0	00	0.000
Medium Trucks:	81.00	-6.37		-1.84		-1.20	-4	.88.	0.0	00	0.000
Heavy Trucks:	85.38	-9.61		-1.84		-1.20	-5	.25	0.0	00	0.000
Unmitigated Noise	Levels (with	out Topo and	barrier	attenu	ation)						
.,	Leq Peak Hou	- 1 - 7		eq Ev		Leq Ni		Lo		CI	VEL
Autos:			69.8		67.2		64.2		71.9		72.2
Medium Trucks:			69.2		65.3		65.8		72.8		73.0
Heavy Trucks:			71.1		63.9		64.6		72.5		72.6
Vehicle Noise:			74.9		70.5		69.7		77.1		77.4
Centerline Distanc	e to Noise Co	ontour (in feet)	70 di	DA I	65 dB	4	60 0	ID A		dBA
			I dn:	70 al		65 aB 491	м	1.0			ава 277
			Lan: VFI:	236		509		1,0		,	27 <i>1</i> 365
		Ci	¥LL.	230	,	303		1,0	50	۷,	000

Thursday, August 8, 2019

	FH\	WA-RD-77-108 HIG	HWAY	NOISE PF	REDICTIO	ON M	ODEL			
Scenario Road Namo Road Segmen	: Limonite A				Project I Job Nu					
SITE S	PECIFIC IN	IPUT DATA			NO	DISE	MODE	L INPUT	S	
Highway Data				Site Con	ditions (l	Hard:	= 10, S	oft = 15)		
Average Daily	raffic (Adt):	43,258 vehicles					Autos.	: 15		
Peak Hour I	Percentage:	10%		Me	dium True	cks (2	Axles).	: 15		
Peak He	our Volume:	4,326 vehicles		He	avy Truck	ks (3+	Axles).	: 15		
Vel	icle Speed:	50 mph		Vehicle I	Miss					
Near/Far Lar	e Distance:	78 feet			icleType		Day	Evening	Night	Dailv
Site Data				V C//		ıtos:	74.19	-	15.6%	89.65%
				1.//	adium Tri.		69.09		23.8%	7.02%
	rier Height:	0.0 feet 0.0			leavy Tru		82.19		13.9%	3.33%
Barrier Type (0-Wa Centerline Dis		76.0 feet			loury inc	iono.	02.17	0.070	10.070	0.007
Centerline Dist. t		76.0 feet		Noise Sc	urce Ele	vatio	ns (in f	eet)		
Barrier Distance t		0.0 feet			Autos:	. (0.000			
Observer Height (5.0 feet		Mediui	n Trucks.	2	2.297			
	d Flevation:	0.0 feet		Heav	y Trucks:	: 8	3.004	Grade Ad	ljustment.	0.0
	d Elevation:	0.0 feet		Lane Equ	uivalent l	Dista	nce (in	feet)		
	Coad Grade:	0.0%			Autos		5.422	,		
,	Left View:	-90.0 degrees		Mediu	n Trucks	-	5.286			
	Right View:	90.0 degrees		Heav	y Trucks.	6	5.299			
FHWA Noise Mode	l Calculation	s								
VehicleType	REMEL	Traffic Flow D	istance	Finite	Road	Fres		Barrier At	ten Ber	m Atten
Autos:	70.20	3.59	-1.5		-1.20		-4.73		000	0.000
Medium Trucks:	81.00	-7.47	-1.8		-1.20		-4.88		000	0.000
Heavy Trucks:	85.38	-10.71	-1.8	84	-1.20		-5.25	0.	000	0.000
Unmitigated Noise										
,,	Leq Peak Hou		,	Evening	Leq N	_		Ldn		VEL
Autos:	70			66.1		63		70.	-	71.1
Medium Trucks:	70			64.2		64		71.		71.9
Heavy Trucks:	71			62.8		63		71.		71.5
Vehicle Noise:	75			69.4		68	.6	76.	0	76.3
Centerline Distanc	e to Noise Co	ontour (in feet)	70		05.1					10.4
				dBA	65 d			60 dBA		dBA
		Ldn:		192 200	414			892	,	922
		CNEL:	. 2	200	430	J		926	1,9	996

Thursday, August 8, 2019

FHW/	A-RD-77-108 H	GHWA	ΥN	OISE PF	REDICTI	ON MO	DEL			
Scenario: HY Road Name: Limonite Av. Road Segment: e/o Hamner A	۸v.				Project Job No	Name: I umber:		stead		
SITE SPECIFIC INP	UT DATA				N	OISE N	/ODE	L INPUT	S	
Highway Data			S	ite Con	ditions (Hard =	10, S	oft = 15)		
Average Daily Traffic (Adt): 6	5,190 vehicles						Autos:	15		
Peak Hour Percentage:	10%			Me	dium Tru	icks (2 A	(xles	15		
Peak Hour Volume: 6	,519 vehicles			He	avy Truc	ks (3+ A	(xles	15		
Vehicle Speed:	45 mph		ν	ehicle I	Mix					
Near/Far Lane Distance:	78 feet		F	Vehi	cleType		Day	Evening	Night	Daily
Site Data			Ť		Α	utos:	74.1%	10.3%	15.6%	89.65%
Barrier Height:	0.0 feet			Me	edium Tr	ucks:	69.0%	7.1%	23.8%	7.02%
Barrier Type (0-Wall, 1-Berm):	0.0			F	leavy Tr	ucks:	82.1%	3.9%	13.9%	3.33%
Centerline Dist. to Barrier:	76.0 feet		٨	loise So	urce Ele	vation	s (in f	oet)		
Centerline Dist. to Observer:	76.0 feet		f	0.00 00	Autos		000	301)		
Barrier Distance to Observer:	0.0 feet			Mediu	n Trucks		297			
Observer Height (Above Pad):	5.0 feet			Heav	y Trucks	: 8.0	004	Grade Ad	iustment	: 0.0
Pad Elevation:	0.0 feet		L		<i>'</i>					
Road Elevation:	0.0 feet		L	ane Equ	uivalent			feet)		
Road Grade:	0.0%				Autos					
	-90.0 degrees				n Trucks					
Right View:	90.0 degrees			Heav	y Trucks	: 65.	299			
FHWA Noise Model Calculations										
// .		Distanc		Finite		Fresn		Barrier Att		m Atten
Autos: 68.46	5.83		1.85		-1.20		-4.73		000	0.000
Medium Trucks: 79.45	-5.23		1.84		-1.20		-4.88		000	0.000
Heavy Trucks: 84.25	-8.47	-	1.84		-1.20		-5.25	0.0	000	0.000
Unmitigated Noise Levels (withou	it Topo and ba	rrier at	tenu	ıation)						
VehicleType Leq Peak Hour	Leq Day		q Ev	ening	Leq I			Ldn		NEL
Autos: 71.2				66.6		63.6		71.2	-	71.6
Medium Trucks: 71.2				64.9		65.4		72.4		72.6
Heavy Trucks: 72.7 Vehicle Noise: 76.6				63.9 70.1		64.6		72.5 76.8		72.6 77.1
		.0		70.1		09.4	•	70.0)	//.1
Centerline Distance to Noise Con	tour (iri feet)	Τ :	70 d	BA	65 0	IBA		60 dBA	55	dBA
							<u> </u>			
	La	n:	217	7	46	7		1,006	2.	168

Scenario: HY+P	
Highway Data Site Conditions (Hard = 10, Soft = 15)	
Average Daily Traffic (Act): 35 AA2 vehicles Autos: 15	
Peak Hour Percentage: 10% Medium Trucks (2 Axles): 15	
Peak Hour Volume: 3,544 vehicles Heavy Trucks (3+ Axles): 15	
Vehicle Speed: 55 mph	
Near/Far Lane Distance: 93 feet VehicleType Day Evening Nigh	nt Dailv
Site Data Autos: 74.1% 10.3% 15.6	
Barrier Height: 0.0 feet Medium Trucks: 69.0% 7.1% 23.8	3% 7.09%
Barrier Type (0-Wall, 1-Berm): 0.0 Heavy Trucks: 82.1% 3.9% 13.9	9% 3.61%
Centerline Dist. to Barrier: 74.0 feet Noise Source Elevations (in feet)	
Centerline Dist. to Observer: 74.0 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 Adjustme	ont: 0 0
Pad Elevation: 0.0 feet	.nr. 0.0
Road Elevation: 0.0 feet Lane Equivalent Distance (in feet)	
Road Grade: 0.0% Autos: 57.782	
Left View: -90.0 degrees Medium Trucks: 57.629	
Right View: 90.0 degrees Heavy Trucks: 57.644	
FHWA Noise Model Calculations	
VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten E	Berm Atten
Autos: 71.78 2.29 -1.05 -1.20 -4.73 0.000	0.00
Medium Trucks: 82.40 -8.70 -1.03 -1.20 -4.88 0.000	0.000
Heavy Trucks: 86.40 -11.64 -1.03 -1.20 -5.25 0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)	
VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn	CNEL
Autos: 71.8 69.7 67.2 64.2 71.8	72.2
Medium Trucks: 71.5 69.1 65.2 65.7 72.6	72.9
Heavy Trucks: 72.5 70.9 63.7 64.4 72.3	72.4
Vehicle Noise: 76.7 74.7 70.4 69.6 77.0	77.3
Centerline Distance to Noise Contour (in feet)	
	55 dBA
70 dBA 65 dBA 60 dBA Ldn: 218 469 1,011 CNEL: 226 487 1,050	2,177 2.261

F	HW.	A-RD-77-108	HIGH	1 YAW	NOISE PI	REDICTIO	N MOD	EL			
Scenario: HY+P Road Name: Archibal Road Segment: n/o Chin						Project N Job Nu	lame: H mber: 1		tead		
SITE SPECIFIC	INF	PUT DATA				NO	ISE M	ODEL	INPUT	S	
Highway Data					Site Con	ditions (l	lard = 1	0, Soi	ft = 15)		
Average Daily Traffic (Adt): 3	8,166 vehicle	es				Α	utos:	15		
Peak Hour Percentage		10%			Me	edium Truc	ks (2 A)	des):	15		
Peak Hour Volume	: 3	3,817 vehicles	8		He	avy Truck	s (3+ A)	des):	15		
Vehicle Speed	l:	55 mph		+	Vehicle i	Miv					
Near/Far Lane Distance	e:	93 feet		F		icleType	Γ.	Dav	Evening	Night	Dailv
Site Data								4.1%	10.3%	15.6%	. ,
Barrier Heigh	٠.	0.0 feet			М	edium Tru	cks: 6	9.0%	7.1%	23.8%	7.09%
Barrier Type (0-Wall, 1-Berm):	0.0			1	Heavy Tru	cks: 8	2.1%	3.9%	13.9%	3.59%
Centerline Dist. to Barrie		74.0 feet			Noise So	ource Ele	vations	(in fe	et)		
Centerline Dist. to Observe		74.0 feet				Autos:	0.00	00	-		
Barrier Distance to Observe		0.0 feet			Mediu	m Trucks:	2.29	97			
Observer Height (Above Pad		5.0 feet			Heav	vy Trucks:	8.00	04	Grade Ad	ljustmen	t: 0.0
Pad Elevation		0.0 feet				-				-	
Road Elevation		0.0 feet		Ľ	Lane Eq	uivalent l		_	eet)		
Road Grade		0.0%				Autos:					
Left Viev		-90.0 degree				m Trucks:					
Right View		90.0 degree	es		Heav	vy Trucks:	57.6	44			
FHWA Noise Model Calculati											
VehicleType REMEL		Traffic Flow	Dis	stance	_	Road	Fresne		Barrier Att		rm Atten
Autos: 71.		2.62		-1.0		-1.20		4.73		000	0.00
Medium Trucks: 82.		-8.38		-1.0		-1.20		4.88		000	0.00
Heavy Trucks: 86.		-11.34		-1.0	-	-1.20		5.25	0.0	000	0.00
Unmitigated Noise Levels (w											
VehicleType Leq Peak I	Tour		70.1	Leq E	vening 67.5	Leq N	ight 64.5		Ldn 72.:		NEL 72
Autos: Medium Trucks:	71.8	-	70.1 69.4		65.5		66.0		72.	_	72.
	72.8		71.2		64.0		64.7		73.0	-	73.7
Heavy Trucks:	77.0		75.0		70.7		69.9		77.		77.
Vehicle Noise:											
)								
Venicie Noise: Centerline Distance to Noise)	70 (dBA	65 di	BA	60	0 dBA	55	5 dBA
		ntour (in feet) Ldn:		dBA 28	65 di			0 dBA		5 dBA ,285

Thursday, August 8, 2019

FHWA	-RD-77-108 HIGH\	WAY NOISE	PREDICTIO	N MODEL			
Scenario: HY+P Road Name: Archibald Av. Road Segment: s/o Schaefer I	Av.			ame: Home nber: 11968			
SITE SPECIFIC INP	UT DATA		NO	ISE MODE	L INPUT	S	
Highway Data		Site C	onditions (H	ard = 10, S	oft = 15)		
Average Daily Traffic (Adt): 33	3,790 vehicles			Autos	15		
Peak Hour Percentage:	10%		Medium Truci	ks (2 Axles)	: 15		
Peak Hour Volume: 3,	379 vehicles		Heavy Trucks	(3+ Axles)	: 15		
Vehicle Speed:	55 mph	Vehic	la Miv				
Near/Far Lane Distance:	93 feet		ehicleType	Dav	Evening	Night	Daily
Site Data				os: 74.19		15.6%	89.29%
Barrier Height:	0.0 feet		Medium Truc	ks: 69.09	6 7.1%	23.8%	7.09%
Barrier Type (0-Wall, 1-Berm):	0.0		Heavy Truc	ks: 82.19	3.9%	13.9%	3.62%
Centerline Dist. to Barrier:	74.0 feet	Noise	Source Elev	ations (in f	eet)		
Centerline Dist. to Observer:	74.0 feet	110,00	Autos:	0.000	001)		
Barrier Distance to Observer:	0.0 feet	Mer	dium Trucks:	2.297			
Observer Height (Above Pad):	5.0 feet		eavy Trucks:	8.004	Grade Ad	liustment:	0.0
Pad Elevation:	0.0 feet		•			,	
Road Elevation:	0.0 feet	Lane	Equivalent D		feet)		
Road Grade:	0.0%		Autos:	57.782			
	-90.0 degrees		dium Trucks:	57.629			
Right View:	90.0 degrees	H	eavy Trucks:	57.644			
FHWA Noise Model Calculations							
// .			ite Road	Fresnel	Barrier At		m Atten
Autos: 71.78	2.09	-1.05	-1.20	-4.73		000	0.000
Medium Trucks: 82.40	-8.91	-1.03	-1.20	-4.88		000	0.000
Heavy Trucks: 86.40	-11.84	-1.03	-1.20	-5.25	0.	000	0.000
Unmitigated Noise Levels (withou			-	-1-1	Ldn		VEL
VehicleType Leq Peak Hour Autos: 71.6	Leq Day 69.5	Leq Evening	Leq Ni	9nt 64.0	Lan 71.		VEL 72.0
Medium Trucks: 71.6	68.9		5.0	65.5	71.		72.0
Heavy Trucks: 71.3	70.7		3.5	64.2	72.		72.2
Vehicle Noise: 76.5	74.5).2	69.4	76.		77.
Centerline Distance to Noise Cont	tour (in feet)			-			
Conto Diotaile to Hoise Cont	((70 dBA	65 dB	Α	60 dBA	55	dBA
						 	
	Ldn:	211	455		980	2,1	110

	FHV	VA-RD-77-108	HIGH	WAY N	IOISE P	REDICT	ION MO	DEL			
Road Nam	io: HY+P ne: Archibald A nt: s/o Ontario						t Name: lumber:		tead		
SITE	SPECIFIC IN	IPUT DATA				1	NOISE I	MODE	L INPUT	S	
Highway Data					Site Cor	nditions	(Hard =	10, Sc	ft = 15)		
Average Daily	Traffic (Adt):	41,113 vehicle	es					Autos:	15		
Peak Hour	Percentage:	10%			Me	edium Ti	ucks (2	Axles):	15		
Peak H	lour Volume:	4,111 vehicle	s		He	eavy Tru	cks (3+	Axles):	15		
Ve	hicle Speed:	55 mph		H	Vehicle	Mix					
Near/Far La	ne Distance:	93 feet		F		nicleType	9	Day	Evening	Night	Daily
Site Data							Autos:	74.1%	Ü	15.6%	,
Rai	rrier Height:	0.0 feet			M	ledium 7	rucks:	69.0%	7.1%	23.8%	7.06%
Barrier Type (0-W	/all, 1-Berm):	0.0				Heavy 7	rucks:	82.1%	3.9%	13.9%	3.56%
Centerline Dis		74.0 feet		1	Noise S	ource E	levation	s (in fe	et)		
Centerline Dist.		74.0 feet				Auto	s: 0.	000			
Barrier Distance		0.0 feet			Mediu	ım Truck	rs: 2.	297			
Observer Height (5.0 feet			Hea	vy Truck	rs: 8.	004	Grade Ad	justmen	t: 0.0
	ad Elevation:	0.0 feet		- 1	l ana Ea	ii.colon	4 Dioton	oo (in i	in n 4 l		
	ad Elevation:	0.0 feet		Ľ	Lane ⊑q	uivaien Auto	t Distan	ce (in 1 782	eet)		
	Road Grade:	0.0%			Modiu	Auto ım Truck					
	Left View:	-90.0 degree				ım Truck vy Truck		629 644			
	Right View:	90.0 degree	es		rica	vy Truck	13. 37.	.044			
FHWA Noise Mode											
VehicleType	REMEL	Traffic Flow	Dis	stance		Road	Fresi		Barrier Att		rm Atten
Autos:	71.78	2.94		-1.0	-	-1.20		-4.73		000	0.000
Medium Trucks:	82.40	-8.08		-1.0	-	-1.20		-4.88		000	0.000
Heavy Trucks:	86.40	-11.06		-1.0		-1.20		-5.25	0.0	000	0.000
Unmitigated Noise								_			
VehicleType Autos:	Leq Peak Hou		70.4	Leq E	vening 67.8		Night 64.9	1	Ldn 72		72.9
Medium Trucks:	72		69.7		65.8		66.3	-	73.	-	73.5
Heavy Trucks:	73		71.5		64.3		65.0	-	72.	-	73.0
Vehicle Noise:	77	• •	75.3		71.0		70.2	-	77.	_	77.9
Centerline Distance	ce to Noise Co	ontour (in feet)								
•				70 (dBA	65	dBA	6	0 dBA	55	5 dBA
			Ldn:	23	39	5	16		1,111	2	,394
		C	NEL:	24	49	5	36		1,154	2	,487

	FH	WA-RD-77-108	HIGH	IWAY N	OISE P	REDICT	ION MO	DDEL			
Scenario Road Name Road Segmen	e: Archibald A						t Name: lumber:	Homes 11968	tead		
SITE S	SPECIFIC IN	NPUT DATA					NOISE	MODE	L INPUTS	ŝ	
Highway Data				5	Site Cor			= 10, So			
Average Daily	Traffic (Adt):	43.762 vehicl	es					Autos:	15		
Peak Hour I	. ,	10%			Me	dium Ti	ucks (2	Axles):	15		
	our Volume:	4,376 vehicle	s		He	avy Tru	cks (3+	Axles):	15		
Vel	nicle Speed:	55 mph		,	/ehicle	Miv					
Near/Far Lar	e Distance:	93 feet		- 1		icleTyp	9	Dav	Evening	Night	Dailv
Site Data							Autos:	74.1%	10.3%	15.6%	/
Par	rier Height:	0.0 feet			Μ	edium 1	rucks:	69.0%	7.1%	23.8%	7.03%
Barrier Type (0-Wa		0.0 reet				Heavy 1	rucks:	82.1%	3.9%	13.9%	3.539
Centerline Dis	. ,	74.0 feet			laina C	nuraa E	lovotio	ns (in fe	.041		
Centerline Dist. t	o Observer:	74.0 feet		,	voise 3	Auto		.000	ei)		
Barrier Distance t	o Observer:	0.0 feet			Modiu	Auto m Truck		.000			
Observer Height (/	Above Pad):	5.0 feet				n Truci		.004	Grade Ad	uetmont	0.0
Pa	d Elevation:	0.0 feet			пеа	ry Truci	18. 0	.004	Grade Au	usunen	0.0
Roa	d Elevation:	0.0 feet		L	ane Eq	uivalen	t Distar	nce (in f	eet)		
F	Road Grade:	0.0%				Auto	s: 57	.782			
	Left View:	-90.0 degre	es		Mediu	m Truck	rs: 57	.629			
	Right View:	90.0 degre	es		Hea	y Truck	s: 57	.644			
FHWA Noise Mode	I Calculation	IS									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fres	nel	Barrier Atte	en Ber	m Atten
Autos:	71.78	3.22		-1.05	5	-1.20		-4.73	0.0	00	0.00
Medium Trucks:	82.40	-7.83		-1.03	3	-1.20		-4.88	0.0	00	0.00
Heavy Trucks:	86.40	-10.82		-1.03	3	-1.20		-5.25	0.0	00	0.00
Unmitigated Noise	Levels (with	out Topo and	barrie	er atten	uation)						
VehicleType	Leq Peak Ho			Leq Ev		Leq	Night		Ldn		VEL
Autos:		2.8	70.7		68.1		65.		72.8		73.
Medium Trucks:		2.3	69.9		66.1		66.		73.5		73.
Heavy Trucks:		3.3	71.7		64.5		65.		73.1		73.
Vehicle Noise:	77	7.6	75.6		71.3		70	.5	77.9)	78.
Centerline Distanc	e to Noise C	ontour (in feet	:)					_			
			L	70 a			dBA		0 dBA		dBA
		_	Ldn: NEL:	24 25	-	-	36 57		1,155 1.200	,	489
											585

Scenario: HY+P Road Name: Archibald Av. Road Segment: slo Eucalyptus Av.		FH'	WA-RD-77-108	HIGHW	AY N	DISE PREDIC	CTION MC	DEL		
Average Daily Traffic (Adt):	Road Nan	ne: Archibald A							ead	
Average Daily Traffic (Adt):		SPECIFIC IN	NPUT DATA							
Peak Hour Percentage:	Highway Data				S	ite Conditior	s (Hard =	: 10, So	ft = 15)	
Peak Hour Volume: Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet Vehicle Mix Vehicle Mix Vehicle Mix Vehicle Type Day Evening Night Daily Evening Night Daily Vehicle Type Day Evening Night Daily Near Night	Average Daily	Traffic (Adt):	40,879 vehicle	es						
Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet Vehicle Mix Vehicle Type Day Evening Night Daily Daily Site Data Barrier Height: 0.0 feet Medium Trucks: 69.0% 0,71.% 23.8% 7.06% 93.3% 35.6% Barrier Type (0-Wall, 1-Berm): 0.0 Heavy Trucks: 82.1% 3.9% 13.9% 3.56% 3.9% 3.56% Centerline Dist. to Observer: 74.0 feet Autos: 0.00 Noise Source Elevations (in feet) Abserver Height (Above Pad): 0.0 feet Medium Trucks: 8.040 Grade Adjustment: 0.0 Pad Elevation: 0.0 feet Medium Trucks: 8.004 Grade Adjustment: 0.0 Road Elevation: 0.0 feet Autos: Noise Source Elevations (in feet) Lane Equivalent Distance (in feet) Road Grade: 0.0% Autos: 77.76 Autos: 75.762 Heavy Trucks: 57.64 Heavy Trucks: 57.644 Barrier Atten Berm Atten								,		
Near/Far Lane Distance: 93 feet VehicleType Day Evening Night Daily			4,088 vehicle	S		Heavy T	rucks (3+	Axles):	15	
Site Data Sarrier Height: O.0 feet Barrier Height: O.0 feet Barrier Type (O-Wall, 1-Berm): O.0 feet Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: O.0 feet Centerline Dist. to Observer: 0.0 feet Centerline Dist. to Observer:					ν	ehicle Mix				
Barrier Height: 0.0 feet	Near/Far La	ane Distance:	93 feet			VehicleTy	pe	Day	Evening 1	Vight Dail
Barrier Type (0-Wall, 1-Berm):	Site Data						Autos:	74.1%	10.3%	15.6% 89.39
Barrier Type (0-Wall, 1-Berm): Centerline Dist. to Barrier: 74.0 feet	Ва	rrier Heiaht:	0.0 feet			Medium	Trucks:	69.0%	7.1%	23.8% 7.06
Centerline Dist. to Observer: 8 All feet Companies Compani			0.0			Heavy	Trucks:	82.1%	3.9%	13.9% 3.56
Autos: 0.000	Centerline D	ist. to Barrier:	74.0 feet			nico Sourco	Elovation	e (in fo	n#l	
Medium Trucks: 2.297 Medium Trucks: 2.297 Medium Trucks: 2.297 Medium Trucks: 8.004 Grade Adjustment: 0.0	Centerline Dist.	to Observer:	74.0 feet		/*			_	<i>=:</i> /	
Diserver Height (Above Pad): 5.0 feet Heavy Trucks: 8.004 Grade Adjustment: 0.0	Barrier Distance	to Observer:	0.0 feet							
Pad Elevation: 0.0 feet	Observer Height	(Above Pad):	5.0 feet						Grade Adius	stment: 0.0
Road Grade:			0.0 feet		L					
Left View:					L	•			eet)	
FHWA Noise Model Calculations										
FHWA Noise Mode Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnet Barrier Atten Berm Atten										
VehicleType				es		Heavy Iru	CKS: 57	.644		
Autos: 71.78 2.92 -1.05 -1.20 -4.73 0.000 0.000 Medium Trucks: 82.40 -8.11 -1.03 -1.20 -4.88 0.000 0.000 0.000 Medium Trucks: 86.40 -11.08 -1.03 -1.20 -5.25 0.000 0.000 0.000 Medium Trucks: 86.40 -11.08 -1.03 -1.20 -5.25 0.000 0.000 Medium Trucks: Without Topo and barrier attenuation)										
Medium Trucks: 82.40	,,			Distar						
Heavy Trucks: 86.40							-			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL							-			
VehicleType							0	-3.23	0.00	0 0.0
Autos: 72.5 70.4 67.8 64.8 72.5 72.6 Medium Trucks: 72.1 69.7 65.8 66.3 73.2 73.5 Heavy Trucks: 73.1 71.4 64.3 65.0 72.8 73.0 Vehicle Noise: 77.3 75.3 71.0 70.2 77.6 77.5 Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 238 514 1,107 2,385	•						a Niaht	1	I do	CNEL
Medium Trucks: 72.1 69.7 65.8 66.3 73.2 73.5 Heavy Trucks: 73.1 71.4 64.3 65.0 72.8 73.0 Vehicle Noise: 77.3 75.3 71.0 70.2 77.6 77.5 Centerline Distance to Noise Contour (in few) 0.0 65.0 0.0<		- 1	- 1 - 7		ey Ev					
Heavy Trucks: 73.1 71.4 64.3 65.0 72.8 73.0 Vehicle Noise: 77.3 75.3 71.0 70.2 77.6 77.5 Centerline Distance to Noise Contour (In feet)								-		
Vehicle Noise: 77.3 75.3 71.0 70.2 77.6 77.5 Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 238 514 1,107 2,385								-		
70 dBA 65 dBA 60 dBA 55 dBA Ldn: 238 514 1,107 2,385								-		
Ldn: 238 514 1,107 2,385	Centerline Distan	ce to Noise C	ontour (in feet)						
			•		70 di	BA 6	5 dBA	60	0 dBA	55 dBA
CNEL: 248 534 1,150 2,477				Ldn:	238	3	514	1	,107	2,385
			C	NEL:	248	3	534	1	,150	2,477

Thursday, August 8, 2019

	FH\	WA-RD-77-108 HIG	HWAY	NOISE PF	REDICTIO	N M	ODEL			
Road Nam	io: HY+P e: Archibald A nt: s/o Limonit				Project N Job Nu		: Home: : 11968	stead		
SITE S	SPECIFIC IN	IPUT DATA			NO	DISE	MODE	L INPUT	S	
Highway Data				Site Con	ditions (l	lard	= 10, S	oft = 15)		
Average Daily	Traffic (Adt):	44,797 vehicles					Autos:	15		
Peak Hour	Percentage:	10%		Me	dium Truc	cks (2	Axles):	15		
Peak H	our Volume:	4,480 vehicles		He	avy Truck	is (3+	- Axles):	15		
Ve	hicle Speed:	50 mph		Vehicle I	/liv					
Near/Far Lai	ne Distance:	78 feet			cleType	Т	Dav	Evening	Night	Daily
Site Data						ıtos:	74.1%		15.6%	89.60%
Par	rier Height:	0.0 feet		Me	edium Tru	cks:	69.0%	7.1%	23.8%	7.00%
Barrier Type (0-W		0.0		F	łeavy Tru	icks:	82.1%	3.9%	13.9%	3.39%
Centerline Dis	st. to Barrier:	76.0 feet		Noise So	urce Fle	vatio	ns (in fi	eet)		
Centerline Dist.	to Observer:	76.0 feet			Autos	_	0.000	,		
Barrier Distance	to Observer:	0.0 feet		Mediur	n Trucks:		2.297			
Observer Height (.	Above Pad):	5.0 feet			y Trucks:		3.004	Grade Ad	liustment.	0.0
Pa	ad Elevation:	0.0 feet							,	
Roa	ad Elevation:	0.0 feet		Lane Equ				feet)		
I	Road Grade:	0.0%			Autos:	-	5.422			
	Left View:	-90.0 degrees			n Trucks:	-	5.286			
	Right View:	90.0 degrees		Heav	y Trucks:	6	5.299			
FHWA Noise Mode		-								
VehicleType	REMEL		istance	Finite		Fres	snel	Barrier At		m Atten
Autos:	70.20	3.74	-1.8		-1.20		-4.73		000	0.000
Medium Trucks:	81.00	-7.33	-1.8		-1.20		-4.88		000	0.000
Heavy Trucks:	85.38	-10.47	-1.8	34	-1.20		-5.25	0.	000	0.000
		out Topo and barr							_	
	Leq Peak Hou			vening	Leq N	_		Ldn		VEL
Autos:	70			66.2		63		70.		71.3
Medium Trucks:	70			64.4		64		71.		72.0
Heavy Trucks: Vehicle Noise:	71	.9 70.2		63.1 69.5		63		71. 76.		71.8 76.5
			'	69.5		68	1.8	/6.	2	76.5
Centerline Distanc	e to Noise Co	ontour (in feet)	70	dBA	65 di	DΛ	-	60 dBA		dBA
		Ldn:		97	65 di			917		ав <i>я</i> 975
		CNFI:		97	443	-		917	,	975 050
		CIVEL								JUU

	FHW	A-RD-77-108	HIGH	IWAY N	IOISE PI	REDICTI	ON MO	DEL			
Road Nam	io: HY+P e: Archibald Av nt: s/o 65th St.	:					Name: umber:				
	SPECIFIC INF	PUT DATA							L INPUT	S	
Highway Data					Site Con	ditions	(Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt): 3	36,580 vehicle	es					Autos.	15		
Peak Hour	Percentage:	10%			Me	dium Tru	ıcks (2 i	Axles).	15		
Peak H	our Volume:	3,658 vehicles	3		He	avy Truc	ks (3+)	Axles).	15		
	hicle Speed:	50 mph		-	Vehicle I	Wix					
Near/Far Lai	ne Distance:	78 feet			Veh	icleType		Day	Evening	Night	Daily
Site Data						F	lutos:	74.1%	6 10.3%	15.6%	89.72%
Bar	rier Height:	0.0 feet			M	edium Tı	ucks:	69.0%	7.1%	23.8%	6.97%
Barrier Type (0-W		0.0			- 1	Heavy Tr	ucks:	82.1%	3.9%	13.9%	3.31%
Centerline Dis	st. to Barrier:	76.0 feet			Noise So	urce Fl	ovation	e (in f	oot)		
Centerline Dist.	to Observer:	76.0 feet		H.	110/30 00	Autos		000	coty		
Barrier Distance	to Observer:	0.0 feet			Mediu	m Trucks		297			
Observer Height (,	5.0 feet				y Trucks		004	Grade Ad	iustmen	t: 0.0
	ad Elevation:	0.0 feet		L		•					
	ad Elevation:	0.0 feet		μ.	Lane Eq				feet)		
F	Road Grade:	0.0%				Autos		422			
	Left View:	-90.0 degree				m Trucks	00.	286			
	Right View:	90.0 degree	es		Heat	y Trucks	S: 65.	299			
FHWA Noise Mode	el Calculations										
VehicleType		Traffic Flow	Dis	tance		Road	Fresr		Barrier Att		rm Atten
Autos:	70.20	2.87		-1.8	-	-1.20		-4.73		000	0.000
Medium Trucks:	81.00	-8.23		-1.8		-1.20		-4.88		000	0.000
Heavy Trucks:	85.38	-11.47		-1.8		-1.20		-5.25	0.0	000	0.000
Unmitigated Noise	•										
	Leq Peak Hour			Leq E	vening	Leq	Night		Ldn		NEL
Autos:	70.0	-	67.9		65.4		62.4		70.0	-	70.4
Medium Trucks:	69.7 70.9		67.3 69.2		63.5 62.1		64.0 62.8		70.9 70.0		71.1 70.8
Heavy Trucks: Vehicle Noise:	70.8		73.0		68.6		67.9		70.0		70.8
Centerline Distance	e to Noise Cor									-	
		, ,		70 (dBA	65 (dBA		60 dBA	55	dBA
			Ldn:	17	71	36	39		795	1	,714
		CI	VEL:	17	78	38	33		826	1	,780

	FH\	WA-RD-77-108	HIGH	1 YAW	NOISE P	REDICT	ION MO	DDEL			
	o: HY+P e: Limonite Av t: e/o Hellma						t Name: lumber:		stead		
SITE S	SPECIFIC IN	IPUT DATA				1	NOISE	MODE	L INPUT	S	
Highway Data					Site Cor	nditions	(Hard =	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	34,440 vehicle	es					Autos:	15		
Peak Hour I	Percentage:	10%			Me	edium Tı	rucks (2	Axles):	15		
Peak Ho	our Volume:	3,444 vehicles	S		He	eavy Tru	cks (3+	Axles):	15		
Vel	nicle Speed:	50 mph		-	Vehicle	Mix					
Near/Far Lar	e Distance:	78 feet		H		nicleType	9	Day	Evening	Night	Daily
Site Data							Autos:	74.1%	10.3%	15.6%	89.56%
Rar	rier Height:	0.0 feet			M	ledium 7	rucks:	69.0%	7.1%	23.8%	6.99%
Barrier Type (0-Wa		0.0				Heavy 7	rucks:	82.1%	3.9%	13.9%	6 3.44%
Centerline Dis		76.0 feet		-	M-1 0			/! #	41		
Centerline Dist. t	o Observer:	76.0 feet		H.	Noise S	Auto		.000	eet)		
Barrier Distance t	o Observer:	0.0 feet			11-15	Auto ım Truck		.000			
Observer Height ()	Above Pad):	5.0 feet						.297	Grade Ad	i rotmon	4.00
Pa	d Elevation:	0.0 feet			Hea	vy Truck	is: 8	.004	Grade Ad	usunen	i. 0.0
Roa	d Elevation:	0.0 feet			Lane Eq	uivalen	t Distar	ice (in	feet)		
F	Road Grade:	0.0%				Auto	s: 65	.422			
	Left View:	-90.0 degree	es		Mediu	ım Truck	rs: 65	.286			
	Right View:	90.0 degree	es		Hea	vy Truck	rs: 65	.299			
FHWA Noise Mode	I Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fres	nel	Barrier Att	en Be	rm Atten
Autos:	70.20	2.60		-1.8	5	-1.20		-4.73	0.0	000	0.000
Medium Trucks:	81.00	-8.48		-1.8	4	-1.20		-4.88	0.0	000	0.000
Heavy Trucks:	85.38	-11.56		-1.8	4	-1.20		-5.25	0.0	000	0.000
Unmitigated Noise								_			
,,	Leq Peak Hou			Leq E	vening		Night	1	Ldn		NEL
Autos:	69		67.7		65.1		62.		69.	-	70.1
Medium Trucks:	69		67.1		63.2		63.		70.		70.9
Heavy Trucks:	70		69.1		62.0		62.		70.		70.7
Vehicle Noise:	74		72.8		68.4		67	.7	75.	1	75.3
Centerline Distanc	e to Noise Co	ontour (in feet)	70	dBA	65	dBA		60 dBA	5/	5 dBA
			I dn:		66		UDA 58	١,	771		.662
			NFI:		73	_	72		801		.725
		Ci							501		,. 20

	FHWA	A-RD-77-108 H	HIGHWAY	NOISE P	REDICTION	ON MODEL			
Road Nan	rio: HY+P ne: Kimball Av. nt: w/o Hellman	Av.				Vame: Hom Imber: 1196			
	SPECIFIC INP	UT DATA				DISE MOD		S	
Highway Data				Site Con	ditions (Hard = 10, 3	Soft = 15)		
Average Daily	Traffic (Adt): 2	7,202 vehicles				Auto	s: 15		
Peak Hour	Percentage:	10%		Me	dium Tru	cks (2 Axles): 15		
Peak F	lour Volume: 2	,720 vehicles		He	avy Truci	ks (3+ Axles): 15		
Ve	hicle Speed:	50 mph		Vehicle I	Mix				
Near/Far La	ne Distance:	51 feet			icleType	Day	Evening	Night	Daily
Site Data					A	utos: 74.1	% 10.3%	15.6%	89.51%
Ra	rrier Height:	0.0 feet		М	edium Tru	icks: 69.0	% 7.1%	23.8%	7.01%
Barrier Type (0-W	-	0.0		F	Heavy Tru	icks: 82.1	% 3.9%	13.9%	3.48%
Centerline Di		49.0 feet		Maina Ca	uraa Ela	vations (in	foot)		
Centerline Dist.	to Observer:	49.0 feet		Noise 30	Autos		ieet)		
Barrier Distance	to Observer:	0.0 feet		A de elle	Autos. m Trucks				
Observer Height	(Above Pad):	5.0 feet			m Trucks vy Trucks.		Grade Ad	liuetmant	. 0 0
P	ad Elevation:	0.0 feet		пеач	y Trucks.	0.004	Orado Ad	jusunon	0.0
Ro	ad Elevation:	0.0 feet		Lane Eq	uivalent l	Distance (ii	feet)		
	Road Grade:	0.0%			Autos.	42.140			
	Left View:	-90.0 degrees		Mediu	m Trucks	41.929			
	Right View:	90.0 degrees		Heav	y Trucks	41.950			
FHWA Noise Mode	el Calculations			l					
VehicleType	REMEL 1	raffic Flow	Distance	Finite	Road	Fresnel	Barrier Att	ten Ber	m Atten
Autos:		1.57		01	-1.20	-4.6		000	0.000
Medium Trucks:		-9.49		04	-1.20	-4.8		000	0.000
Heavy Trucks:	85.38	-12.53	1.	04	-1.20	-5.4	1 0.	000	0.000
Unmitigated Noise			arrier atte	nuation)					
VehicleType	Leq Peak Hour	Leq Day		Evening	Leq N		Ldn		VEL
Autos:			9.5	66.9		64.0	71.	-	72.0
Medium Trucks:			9.0	65.1		65.6	72.		72.7
Heavy Trucks:	72.7		1.0	63.9		64.6	72.		72.6
Vehicle Noise:			4.7	70.3		69.5	77.	0	77.2
Centerline Distant	ce to Noise Con	tour (in feet)							

Thursday, August 8, 2019

	FHWA	A-RD-77-108 HI	GHWAY	NOISE PE	REDICTIO	N M	ODEL			
Scenario: HY+l Road Name: Limo Road Segment: e/o A	nite Av.	Av.			Project I Job Nu		: Home : 11968			
SITE SPECIF	IC INP	UT DATA			NO	DISE	MODE	L INPUT	S	
Highway Data				Site Con	ditions (l	lard	= 10, S	oft = 15)		
Average Daily Traffic (Adt): 5-	4,746 vehicles					Autos.	15		
Peak Hour Percent	age:	10%		Me	dium True	cks (2	Axles).	: 15		
Peak Hour Voll	ume: 5	,475 vehicles		He	avy Truck	rs (3+	- Axles).	: 15		
Vehicle Sp	eed:	50 mph		Vehicle I	Miv					
Near/Far Lane Dista	nce:	78 feet			icleType	Т	Day	Evening	Night	Daily
Site Data				1011		itos:	74.19	-	15.6%	89.49%
	lanta di	0.0 feet		Me	edium Tri.		69.09		23.8%	7.02%
Barrier He Barrier Type (0-Wall, 1-Be		0.0 reet 0.0		ŀ	Heavy Tru	icks:	82.19	6 3.9%	13.9%	3.49%
Centerline Dist. to Ba		76.0 feet								
Centerline Dist. to Obse		76.0 feet		Noise Sc		_		eet)		
Barrier Distance to Obse		0.0 feet			Autos:		0.000			
Observer Height (Above I		5.0 feet			m Trucks.		2.297			
Pad Fleva		0.0 feet		Heav	y Trucks:		3.004	Grade Ad	ijustment.	0.0
Road Eleva	ation:	0.0 feet		Lane Equ	uivalent l	Dista	nce (in	feet)		
Road Gi	rade:	0.0%			Autos	6	5.422			
Left \	/iew:	-90.0 degrees		Mediui	m Trucks.	6	5.286			
Right \	/iew:	90.0 degrees		Heav	y Trucks:	6	5.299			
FHWA Noise Model Calcu										
VehicleType REM			Distance			Fre		Barrier At		m Atten
Autos:	70.20	4.61	-1.		-1.20		-4.73		000	0.000
Medium Trucks:	81.00	-6.45	-1.		-1.20		-4.88		000	0.000
Heavy Trucks:	85.38	-9.49	-1.		-1.20		-5.25	0.	000	0.000
Unmitigated Noise Levels VehicleType Leg Pe	(witho น ak Hour	It Topo and ba Leg Day	_	enuation) Evening	Leg N	liedat	1	Ldn		VFI
Autos:	71.8			67.1	Leyn	1911t 64	2	71.		72.2
Medium Trucks:	71.5			65.3		65		72.		72.9
Heavy Trucks:	72.8			64.0		64		72.		72.7
Vehicle Noise:	76.8		_	70.4		69	••	77.	_	77.4
Centerline Distance to No	ise Con	tour (in feet)								
) dBA	65 d	BA		60 dBA	55	dBA
		Ld		227	489	9		1,055	2,	272
		CNF	1	236	508	2		1.095	2 '	358

Thursday, August 8, 2019

	FH	WA-RD-77-108	HIGH	NAY NO	DISE P	REDICT	ION M	ODEL			
	o: HY+P e: Limonite A nt: e/o Harriso					.,		: Home:	stead		
SITE S	SPECIFIC IN	NPUT DATA				١	NOISE	MODE	L INPUT	S	
Highway Data				S	ite Cor	nditions	(Hard	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	56,437 vehicl	es					Autos:	15		
Peak Hour	Percentage:	10%			Me	edium Tr	ucks (2	Axles):	15		
Peak H	our Volume:	5,644 vehicle	s		He	eavy Tru	cks (3+	- Axles):	15		
Vei	hicle Speed:	50 mph		ν	ehicle	Mix					
Near/Far Lai	ne Distance:	78 feet		Ė		icleType	9	Dav	Evening	Night	Daily
Site Data							Autos:	74.1%		15.6%	
Rar	rier Height:	0.0 feet			M	ledium T	rucks:	69.0%	7.1%	23.8%	7.02%
Barrier Type (0-W	all, 1-Berm):	0.0				Heavy T	rucks:	82.1%	3.9%	13.9%	3.48%
Centerline Dis		76.0 feet		N	oise S	ource E	levatio	ns (in f	eet)		
Centerline Dist.		76.0 feet				Auto	s: (0.000			
Barrier Distance		0.0 feet			Mediu	m Truck	rs: 2	2.297			
Observer Height (.	,	5.0 feet			Hea	vy Truck	rs: 8	3.004	Grade Ad	ljustmen	t: 0.0
	d Elevation:	0.0 feet					4 Di-4-	/!	£4\		
	d Elevation:	0.0 feet		L	ane Eq	uivalen Auto		nce (in 5.422	reet)		
,	Road Grade:	0.0%			Modiu	m Truck		5.286			
	Right View:	-90.0 degre 90.0 degre				vy Truck	-	5.299			
FHWA Noise Mode											
	REMEI	Traffic Flow	Diet	ance	Finito	Road	Fres	anol .	Barrier Att	lon Do	rm Atten
VehicleType Autos:	70.20			-1.85	ririile	-1.20	ries	-4.73		000	0.000
Medium Trucks:	81.00			-1.84		-1.20		-4.88		000	0.000
Heavy Trucks:	85.38			-1.84		-1.20		-5.25		000	0.000
Unmitigated Noise	Levels (with	out Topo and	barrie	r attenu	ation)						
VehicleType	Leq Peak Ho	ur Leq Day	/	Leq Eve	ening	Leq	Night		Ldn	C	NEL
Autos:	71	1.9	69.8		67.2		64	.3	71.	9	72.3
Medium Trucks:	71	1.6	69.2		65.4		65	.9	72.	8	73.0
Heavy Trucks:	73	3.0	71.3		64.2		64	.9	72.	7	72.9
Vehicle Noise:	77	7.0	75.0		70.6	i	69	.8	77.	3	77.5
Centerline Distance	e to Noise C	ontour (in feet)	70.							
			L	70 di			dBA		0 dBA	_	5 dBA
			Ldn: NFI:	232	-		99		1,076		,318
		C	NEL:	241		5	119		1,117	2	,407

_	FHW	/A-RD-77-108	HIGH	WAY N	IOISE PI	REDICT	ION MO	DEL	_		
Road Name	o: HY+P e: Limonite Av nt: e/o Scholar						t Name: lumber:		tead		
SITE S	SPECIFIC IN	PUT DATA				١	NOISE I	ИODE	L INPUTS	3	
Highway Data					Site Con	ditions	(Hard =	10, So	ft = 15)		
Peak He	Percentage: our Volume:	43,821 vehicle 10% 4,382 vehicle					ucks (2 . cks (3+ .	,	15 15 15		
	hicle Speed:	50 mph		1	Vehicle	Mix					
Near/Far Lar	ne Distance:	78 feet			Veh	icleType	•	Day	Evening	Night	Daily
Site Data Barrier Type (0-Wa	rier Height:	0.0 feet 0.0				edium T Heavy T		74.1% 69.0% 82.1%	7.1%	15.6% 23.8% 13.9%	7.049
Centerline Dis	st. to Barrier:	76.0 feet		,	Voise S	ource F	levation	s (in fe	et)		
Centerline Dist. t Barrier Distance t Observer Height (to Observer:	76.0 feet 0.0 feet 5.0 feet 0.0 feet		ĺ	Mediu	Auto m Truck ry Truck	s: 0.	000 297 004	Grade Adj	iustmen	t: 0.0
	id Elevation:	0.0 feet		1	Lane Eq	uivalen	t Distan	ce (in f	eet)		
F	Road Grade: Left View: Right View:	0.0% -90.0 degree 90.0 degree				Auto m Truck vy Truck	s: 65.	422 286 299			
FHWA Noise Mode	el Calculations	i .									
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresi	nel	Barrier Atte	en Be	rm Atten
Autos:	70.20	3.64		-1.8	-	-1.20		-4.73	0.0	000	0.00
Medium Trucks:	81.00	-7.40		-1.84		-1.20		-4.88	0.0		0.00
Heavy Trucks:	85.38	-10.40		-1.84	4	-1.20		-5.25	0.0	000	0.00
Unmitigated Noise	Levels (with	out Topo and	barrie	r atten	uation)						
,,	Leq Peak Hou	- 7 - 7		Leq E		Leq	Night		Ldn		NEL
Autos:	70.	-	68.7		66.1		63.2	-	70.8		71.
Medium Trucks:	70.	-	68.2		64.3		64.	-	71.7		71.
Heavy Trucks: Vehicle Noise:	71. 75.	_	70.3 73.9		63.1		68.4		71.7 76.2		71. 76.
			7 0.0		09.5		08.6)	70.2	-	70.
Centerline Distanc	e to Noise Co	ntour (in feet)	70	10.4		10.4				- 10.1
			L	70 c			dBA	6	0 dBA		5 dBA
			Ldn:	19			24		912		,966
		Ci	NEL:	20)4	4	40		947	2	,041

	FHW	/A-RD-77-108	HIGHW	AY NO	ISE PR	EDICTIO	N MOE	EL			
Scenario: HY Road Name: Lim Road Segment: e/o	onite Av					Project Na Job Nun			tead		
SITE SPEC	IFIC IN	PUT DATA				NO	ISE M	ODE	L INPUT	S	
Highway Data				Si	te Cond	ditions (H	ard =	10, Sc	ft = 15)		
Average Daily Traffic	(Adt):	45,043 vehicle	:S				A	utos:	15		
Peak Hour Perce	ntage:	10%			Med	dium Truci	ks (2 A	xles):	15		
Peak Hour Vo	olume:	4,504 vehicles			Hea	avy Trucks	3+ A	xles):	15		
Vehicle S	Speed:	50 mph		Ve	hicle N	lix					
Near/Far Lane Dis	tance:	78 feet		-		cleType	- 1	Dav	Evening	Night	Daily
Site Data							tos:	4.1%	Ü	15.6%	89.44
Barrier H	leiaht.	0.0 feet			Ме	dium Truc	cks: 6	9.0%	7.1%	23.8%	7.03
Barrier Type (0-Wall, 1-I	Berm):	0.0			Н	leavy Truc	cks: 8	32.1%	3.9%	13.9%	3.52
Centerline Dist. to E		76.0 feet		No	ise So	urce Elev	ations	(in fe	eet)		
Centerline Dist. to Obs		76.0 feet				Autos:	0.0	00			
Barrier Distance to Obs		0.0 feet			Mediun	n Trucks:	2.2	97			
Observer Height (Above		5.0 feet			Heav	Trucks:	8.0	04	Grade Ad	ljustmen	t: 0.0
Pad Ele		0.0 feet		-							
Road Ele		0.0 feet		La	ne Equ	ivalent D		_	eet)		
Road (0.0%				Autos:	65.4				
	View:	-90.0 degree				n Trucks: y Trucks:	65.2 65.2				
FHWA Noise Model Cald	culations	;									
VehicleType RE	MEL	Traffic Flow	Dista	nce	Finite I	Road	Fresne	e/	Barrier At	ten Be	rm Atter
Autos:	70.20	3.76		-1.85		-1.20		4.73	0.	000	0.0
Medium Trucks:	81.00	-7.29		-1.84		-1.20	-	4.88	0.	000	0.0
										000	0.0
Heavy Trucks:	85.38	-10.29		-1.84		-1.20		5.25	0.	000	
Unmitigated Noise Leve	ls (with	out Topo and		attenua				5.25			
Unmitigated Noise Leve VehicleType Leq P	ls (witho	out Topo and	L		ning	-1.20 Leq Ni	ght	5.25	Ldn	C	NEL
Unmitigated Noise Leve VehicleType Leq F Autos:	ls (witho	r Leq Day	68.8	attenua	ning 66.3		ght 63.3	5.25	Ldn 70.	9 C	71
VehicleType Leq F Autos: Medium Trucks:	ls (without leak Hou 70.	out Topo and Leq Day	68.8 68.3	attenua	ning 66.3 64.4		ght 63.3 64.9	5.25	Ldn 70.	9 8	71 72
VehicleType Leq F Autos: Medium Trucks: Heavy Trucks:	ls (with one of the original o	put Topo and a Leq Day 9	68.8 68.3 70.4	attenua	66.3 64.4 63.2		ght 63.3 64.9 64.0	5.25	Ldn 70. 71.	9 8 8	71 72 71
Unmitigated Noise Leve VehicleType Leq F Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	ris (without 70. 70. 72. 76.	put Topo and r Leq Day 9 7 0 0	68.8 68.3 70.4 74.0	attenua	ning 66.3 64.4		ght 63.3 64.9	5.25	Ldn 70.	9 8 8	71 72 71
VehicleType Leq F Autos: Medium Trucks: Heavy Trucks:	ris (without 70. 70. 72. 76.	put Topo and r Leq Day 9 7 0 0	68.8 68.3 70.4 74.0	attenua eq Eve	66.3 64.4 63.2 69.6		ght 63.3 64.9 64.0 68.9		Ldn 70. 71.	9 8 8 3	71 72 71 76
Unmitigated Noise Leve VehicleType Leq F Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	ris (without 70. 70. 72. 76.	out Topo and Leq Day 9 7 0 0 ntour (in feet)	68.8 68.3 70.4 74.0	attenua	66.3 64.4 63.2 69.6	Leq Ni	ght 63.3 64.9 64.0 68.9		Ldn 70. 71. 71. 76.	9 8 8 8 3	71 72 71 76

Thursday, August 8, 2019

FHWA-RD-77-108 HIGHWA	Y NOISE PREDICTION MODEL
Scenario: HY+P Road Name: Limonite Av. Road Segment: e/o Hamner Av.	Project Name: Homestead Job Number: 11968
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS
Highway Data	Site Conditions (Hard = 10, Soft = 15)
Average Daily Traffic (Adt): 65,651 vehicles	Autos: 15
Peak Hour Percentage: 10%	Medium Trucks (2 Axles): 15
Peak Hour Volume: 6,565 vehicles	Heavy Trucks (3+ Axles): 15
Vehicle Speed: 45 mph	Vehicle Mix
Near/Far Lane Distance: 78 feet	VehicleType Day Evening Night Daily
Site Data	Autos: 74.1% 10.3% 15.6% 89.49%
	Medium Trucks: 69.0% 7.1% 23.8% 7.049
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 82.1% 3.9% 13.9% 3.479
Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet	770079 7700707 02.779 0.070 10.070 0.177
Centerline Dist. to Observer: 76.0 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 Flevation: 0.0 feet	Heavy Trucks: 8.004 Grade Adjustment: 0.0
Road Flevation: 0.0 feet	Lane Equivalent Distance (in feet)
Road Grade: 0.0%	Autos: 65 422
Left View: -90.0 degrees	Medium Trucks: 65.286
Right View: 90.0 degrees	Heavy Trucks: 65.299
FHWA Noise Model Calculations	
VehicleType REMEL Traffic Flow Distance	
	1.85 -1.20 -4.73 0.000 0.00
	1.84 -1.20 - <i>4.88</i> 0.000 0.00
	1.84 -1.20 -5.25 0.000 0.00
Inmitigated Noise Levels (without Topo and barrier at	
VehicleType Leq Peak Hour Leq Day Lec	Evening
Medium Trucks: 71.2 68.8	65.0 65.5 72.4 72.
Heavy Trucks: 72.9 71.3	64.1 64.9 72.7 72.
Vehicle Noise: 76.7 74.7	70.1 69.5 76.9 77.
Centerline Distance to Noise Contour (in feet)	10.1
	70 dBA 65 dBA 60 dBA 55 dBA
Ldn:	220 474 1,022 2,201
	228 492 1.060 2.284

APPENDIX 9.1:

OPERATIONAL STATIONARY-SOURCE NOISE CALCULATIONS



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12/12/2019

20.0

Observer Location: R1 Project Name: The Homestead

Source: Roof-Top Air Conditioning Unit Job Number: 11965
Condition: Operational Analyst: B. Lawson

NOISE MODEL INPUTS

Noise Distance to Observer 1,204.0 feet
Noise Distance to Barrier: 1,194.0 feet
Noise Distance to Observer: 10.0 feet
Noise Distance to Observer: 10.0 feet
Noise Source Height: 5.0 feet
Observer Height: 5.0 feet

Observer Elevation: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0

Noise Source Elevation: 30.0 feet

Barrier Elevation: 0.0 feet 20 = 6 dBA per doubling of distance 15 = 4.5 dBA per doubling of distance

	NOISE MODEL PROJECTIONS									
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax			
Reference (Sample)	5.0	77.2	0.0	76.1	0.0	0.0	78.2			
Distance Attenuation	1,204.0	-47.6	-47.6	-47.6	-47.6	-47.6	-47.6			
Shielding (Barrier Attenuation)	1,194.0	-5.3	-5.3	-5.3	-5.3	-5.3	-5.3			
Raw (Distance + Barrier)		24.3	-52.9	23.2	-52.9	-52.9	25.3			
60 Minute Hourly Adjustmen	nt	24.3	-52.9	23.2	-52.9	-52.9	25.3			

STATIONARY SOURCE NOISE PREDICTION MODEL 12/12/2019

Drop Off Coefficient:

Observer Location: R1 Project Name: The Homestead

Source: Truck Unloading/Docking Activity

Job Number: 11965

Condition: Operational

Analyst: B. Lawson

NOISE MODEL INPUTS

Noise Distance to Observer 731.0 feet Barrier Height: 721.0 feet Noise Source Height: 8.0 feet Barrier Distance to Observer: 10.0 feet Observer Height: 5.0 feet

Observer Elevation: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0

Noise Source Elevation: 0.0 feet Drop Off Coefficient: 20.0

	NOISE	MODEL P	ROJECTI	ONS			
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	30.0	67.2	0.0	67.2	0.0	0.0	80.0
Distance Attenuation	731.0	-27.7	-27.7	-27.7	-27.7	-27.7	-27.7
Shielding (Barrier Attenuation)	721.0	-5.5	-5.5	-5.5	-5.5	-5.5	-5.5
Raw (Distance + Barrier)		34.0	-33.2	34.0	-33.2	-33.2	46.8
60 Minute Hourly Adjustmen	nt	34.0	-33.2	34.0	-33.2	-33.2	46.8

12/12/2019

20.0

Observer Location: R1 Project Name: The Homestead

Source: Parking Lot Vehicle Movements Job Number: 11965
Condition: Operational Analyst: B. Lawson

NOISE MODEL INPUTS

Noise Distance to Observer 711.0 feet Barrier Height: 6.0 feet
Noise Distance to Barrier: 701.0 feet Noise Source Height: 5.0 feet
Barrier Distance to Observer: 10.0 feet Observer Height: 5.0 feet

Observer Elevation: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0

Noise Source Elevation: 0.0 feet Drop Off Coefficient:

Barrier Elevation: 0.0 feet 20 = 6 dBA per doubling of distance 15 = 4.5 dBA per doubling of distance

	NOISE MODEL PROJECTIONS									
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax			
Reference (Sample)	10.0	52.2	0.0	50.0	0.0	0.0	71.9			
Distance Attenuation	711.0	-37.0	-37.0	-37.0	-37.0	-37.0	-37.0			
Shielding (Barrier Attenuation)	701.0	-5.5	-5.5	-5.5	-5.5	-5.5	-5.5			
Raw (Distance + Barrier)		9.7	-42.5	7.5	-42.5	-42.5	29.4			
60 Minute Hourly Adjustmen	nt	9.7	-42.5	7.5	-42.5	-42.5	29.4			

STATIONARY SOURCE NOISE PREDICTION MODEL 12/12/2019

Observer Location: R2 Project Name: The Homestead

Source: Roof-Top Air Conditioning Unit

Job Number: 11965

Condition: Operational

Analyst: B. Lawson

NOISE MODEL INPUTS

Noise Distance to Observer590.0 feetBarrier Height:6.0 feetNoise Distance to Barrier:580.0 feetNoise Source Height:5.0 feetBarrier Distance to Observer:10.0 feetObserver Height:5.0 feet

Observer Elevation: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0

Noise Source Elevation: 30.0 feet Drop Off Coefficient: 20.0

NOISE MODEL PROJECTIONS									
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax		
Reference (Sample)	5.0	77.2	0.0	76.1	0.0	0.0	78.2		
Distance Attenuation	590.0	-41.4	-41.4	-41.4	-41.4	-41.4	-41.4		
Shielding (Barrier Attenuation)	580.0	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1		
Raw (Distance + Barrier)		30.7	-46.5	29.6	-46.5	-46.5	31.7		
60 Minute Hourly Adjustmen	nt	30.7	-46.5	29.6	-46.5	-46.5	31.7		

12/12/2019

20.0

Observer Location: R2 Project Name: The Homestead

Source: Truck Unloading/Docking Activity

Job Number: 11965

Condition: Operational

Analyst: B. Lawson

NOISE MODEL INPUTS

Noise Distance to Observer 504.0 feet Barrier Height: 6.0 feet
Noise Distance to Barrier: 494.0 feet Noise Source Height: 8.0 feet
Barrier Distance to Observer: 10.0 feet Observer Height: 5.0 feet

Observer Elevation: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0

Noise Source Elevation: 0.0 feet Drop Off Coefficient:

Barrier Elevation: 0.0 feet 20 = 6 dBA per doubling of distance 15 = 4.5 dBA per doubling of distance

	NOISE MODEL PROJECTIONS									
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax			
Reference (Sample)	30.0	67.2	0.0	67.2	0.0	0.0	80.0			
Distance Attenuation	504.0	-24.5	-24.5	-24.5	-24.5	-24.5	-24.5			
Shielding (Barrier Attenuation)	494.0	-5.4	-5.4	-5.4	-5.4	-5.4	-5.4			
Raw (Distance + Barrier)		37.3	-29.9	37.3	-29.9	-29.9	50.1			
60 Minute Hourly Adjustmen	nt	37.3	-29.9	37.3	-29.9	-29.9	50.1			

STATIONARY SOURCE NOISE PREDICTION MODEL 12/12/2019

Observer Location: R2 Project Name: The Homestead

Source: Parking Lot Vehicle Movements

Job Number: 11965

Condition: Operational

Analyst: B. Lawson

NOISE MODEL INPUTS

Noise Distance to Observer 337.0 feet Barrier Height: 6.0 feet
Noise Distance to Barrier: 327.0 feet Noise Source Height: 5.0 feet
Barrier Distance to Observer: 10.0 feet Observer Height: 5.0 feet

Observer Elevation: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0

Noise Source Elevation: 0.0 feet Drop Off Coefficient: 20.0

	NOISE MODEL PROJECTIONS									
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax			
Reference (Sample)	10.0	52.2	0.0	50.0	0.0	0.0	71.9			
Distance Attenuation	337.0	-30.6	-30.6	-30.6	-30.6	-30.6	-30.6			
Shielding (Barrier Attenuation)	327.0	-5.5	-5.5	-5.5	-5.5	-5.5	-5.5			
Raw (Distance + Barrier)		16.1	-36.1	13.9	-36.1	-36.1	35.8			
60 Minute Hourly Adjustmen	nt	16.1	-36.1	13.9	-36.1	-36.1	35.8			

12/12/2019

20.0

Observer Location: R3 Project Name: The Homestead

Source: Roof-Top Air Conditioning Unit Job Number: 11965
Condition: Operational Analyst: B. Lawson

NOISE MODEL INPUTS

Noise Distance to Observer 1,655.0 feet
Noise Distance to Barrier: 1,645.0 feet
Noise Distance to Barrier: 1,645.0 feet
Noise Source Height: 5.0 feet
Observer Height: 5.0 feet

Observer Elevation: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0

Noise Source Elevation: 30.0 feet

Barrier Elevation: 0.0 feet 20 = 6 dBA per doubling of distance 15 = 4.5 dBA per doubling of distance

	NOISE MODEL PROJECTIONS									
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax			
Reference (Sample)	5.0	77.2	0.0	76.1	0.0	0.0	78.2			
Distance Attenuation	1,655.0	-50.4	-50.4	-50.4	-50.4	-50.4	-50.4			
Shielding (Barrier Attenuation)	1,645.0	-5.3	-5.3	-5.3	-5.3	-5.3	-5.3			
Raw (Distance + Barrier)		21.5	-55.7	20.4	-55.7	-55.7	22.5			
60 Minute Hourly Adjustmen	nt	21.5	-55.7	20.4	-55.7	-55.7	22.5			

STATIONARY SOURCE NOISE PREDICTION MODEL 12/12/2019

Drop Off Coefficient:

Observer Location: R3 Project Name: The Homestead

Source: Truck Unloading/Docking Activity

Job Number: 11965

Condition: Operational

Analyst: B. Lawson

NOISE MODEL INPUTS

Noise Distance to Observer 1,742.0 feet
Noise Distance to Barrier: 1,732.0 feet
Noise Distance to Barrier: 1,732.0 feet
Noise Source Height: 8.0 feet
Observer Height: 5.0 feet

Observer Elevation: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0

Noise Source Elevation: 0.0 feet Drop Off Coefficient: 20.0

	NOISE	MODEL P	ROJECTI	ONS	NOISE MODEL PROJECTIONS									
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax							
Reference (Sample)	30.0	67.2	0.0	67.2	0.0	0.0	80.0							
Distance Attenuation	1,742.0	-35.3	-35.3	-35.3	-35.3	-35.3	-35.3							
Shielding (Barrier Attenuation)	1,732.0	-5.5	-5.5	-5.5	-5.5	-5.5	-5.5							
Raw (Distance + Barrier)		26.4	-40.8	26.4	-40.8	-40.8	39.2							
60 Minute Hourly Adjustmen	nt	26.4	-40.8	26.4	-40.8	-40.8	39.2							

12/12/2019

20.0

Observer Location: R3 Project Name: The Homestead

> Source: Parking Lot Vehicle Movements Job Number: 11965

Condition: Operational Analyst: B. Lawson

NOISE MODEL INPUTS

Noise Distance to Observer 1,457.0 feet Barrier Height: 6.0 feet Noise Source Height: 5.0 feet Noise Distance to Barrier: 1,447.0 feet Observer Height: 5.0 feet Barrier Distance to Observer: 10.0 feet

Barrier Type (0-Wall, 1-Berm): 0 Observer Elevation: 0.0 feet

Drop Off Coefficient: Noise Source Elevation: 0.0 feet

20 = 6 dBA per doubling of distance Barrier Elevation: 0.0 feet 15 = 4.5 dBA per doubling of distance

NOISE MODEL PROJECTIONS									
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax		
Reference (Sample)	10.0	52.2	0.0	50.0	0.0	0.0	71.9		
Distance Attenuation	1,457.0	-43.3	-43.3	-43.3	-43.3	-43.3	-43.3		
Shielding (Barrier Attenuation)	1,447.0	-5.5	-5.5	-5.5	-5.5	-5.5	-5.5		
Raw (Distance + Barrier)		3.4	-48.8	1.2	-48.8	-48.8	23.1		
60 Minute Hourly Adjustmer	nt	3.4	-48.8	1.2	-48.8	-48.8	23.1		

STATIONARY SOURCE NOISE PREDICTION MODEL 12/12/2019

Project Name: The Homestead Observer Location: R4

> Job Number: 11965 Source: Roof-Top Air Conditioning Unit Condition: Operational Analyst: B. Lawson

NOISE MODEL INPUTS

Noise Distance to Observer 1.578.0 feet Barrier Height: 6.0 feet Noise Source Height: 5.0 feet Noise Distance to Barrier: 1,568.0 feet Observer Height: 5.0 feet Barrier Distance to Observer: 10.0 feet

Barrier Type (0-Wall, 1-Berm): 0 Observer Elevation: 0.0 feet

Drop Off Coefficient: 20.0 Noise Source Elevation: 30.0 feet

20 = 6 dBA per doubling of distance Barrier Elevation: 0.0 feet 15 = 4.5 dBA per doubling of distance

	NOISE MODEL PROJECTIONS									
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax			
Reference (Sample)	5.0	77.2	0.0	76.1	0.0	0.0	78.2			
Distance Attenuation	1,578.0	-50.0	-50.0	-50.0	-50.0	-50.0	-50.0			
Shielding (Barrier Attenuation)	1,568.0	-5.3	-5.3	-5.3	-5.3	-5.3	-5.3			
Raw (Distance + Barrier)		21.9	-55.3	20.8	-55.3	-55.3	22.9			
60 Minute Hourly Adjustmen	nt	21.9	-55.3	20.8	-55.3	-55.3	22.9			

12/12/2019

20.0

Observer Location: R4 Project Name: The Homestead

Source: Truck Unloading/Docking Activity

Job Number: 11965

Condition: Operational

Analyst: B. Lawson

NOISE MODEL INPUTS

Noise Distance to Observer 1,467.0 feet
Noise Distance to Barrier: 1,457.0 feet
Noise Distance to Barrier: 1,457.0 feet
Noise Source Height: 8.0 feet
Barrier Distance to Observer: 10.0 feet
Observer Height: 5.0 feet

Observer Elevation: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0

Noise Source Elevation: 0.0 feet

Barrier Elevation: 0.0 feet 20 = 6 dBA per doubling of distance 15 = 4.5 dBA per doubling of distance

	NOISE MODEL PROJECTIONS									
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax			
Reference (Sample)	30.0	67.2	0.0	67.2	0.0	0.0	80.0			
Distance Attenuation	1,467.0	-33.8	-33.8	-33.8	-33.8	-33.8	-33.8			
Shielding (Barrier Attenuation)	1,457.0	-5.5	-5.5	-5.5	-5.5	-5.5	-5.5			
Raw (Distance + Barrier)		27.9	-39.3	27.9	-39.3	-39.3	40.7			
60 Minute Hourly Adjustmen	nt	27.9	-39.3	27.9	-39.3	-39.3	40.7			

STATIONARY SOURCE NOISE PREDICTION MODEL 12/12/2019

Drop Off Coefficient:

Observer Location: R4 Project Name: The Homestead

Source: Parking Lot Vehicle Movements

Job Number: 11965

Condition: Operational

Analyst: B. Lawson

NOISE MODEL INPUTS

Noise Distance to Observer 1,365.0 feet
Noise Distance to Barrier: 1,355.0 feet
Noise Distance to Barrier: 1,355.0 feet
Noise Source Height: 5.0 feet
Observer Height: 5.0 feet

Observer Elevation: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0

Noise Source Elevation: 0.0 feet Drop Off Coefficient: 20.0

NOISE MODEL PROJECTIONS							
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	10.0	52.2	0.0	50.0	0.0	0.0	71.9
Distance Attenuation	1,365.0	-42.7	-42.7	-42.7	-42.7	-42.7	-42.7
Shielding (Barrier Attenuation)	1,355.0	-5.5	-5.5	-5.5	-5.5	-5.5	-5.5
Raw (Distance + Barrier)		4.0	-48.2	1.8	-48.2	-48.2	23.7
60 Minute Hourly Adjustment		4.0	-48.2	1.8	-48.2	-48.2	23.7